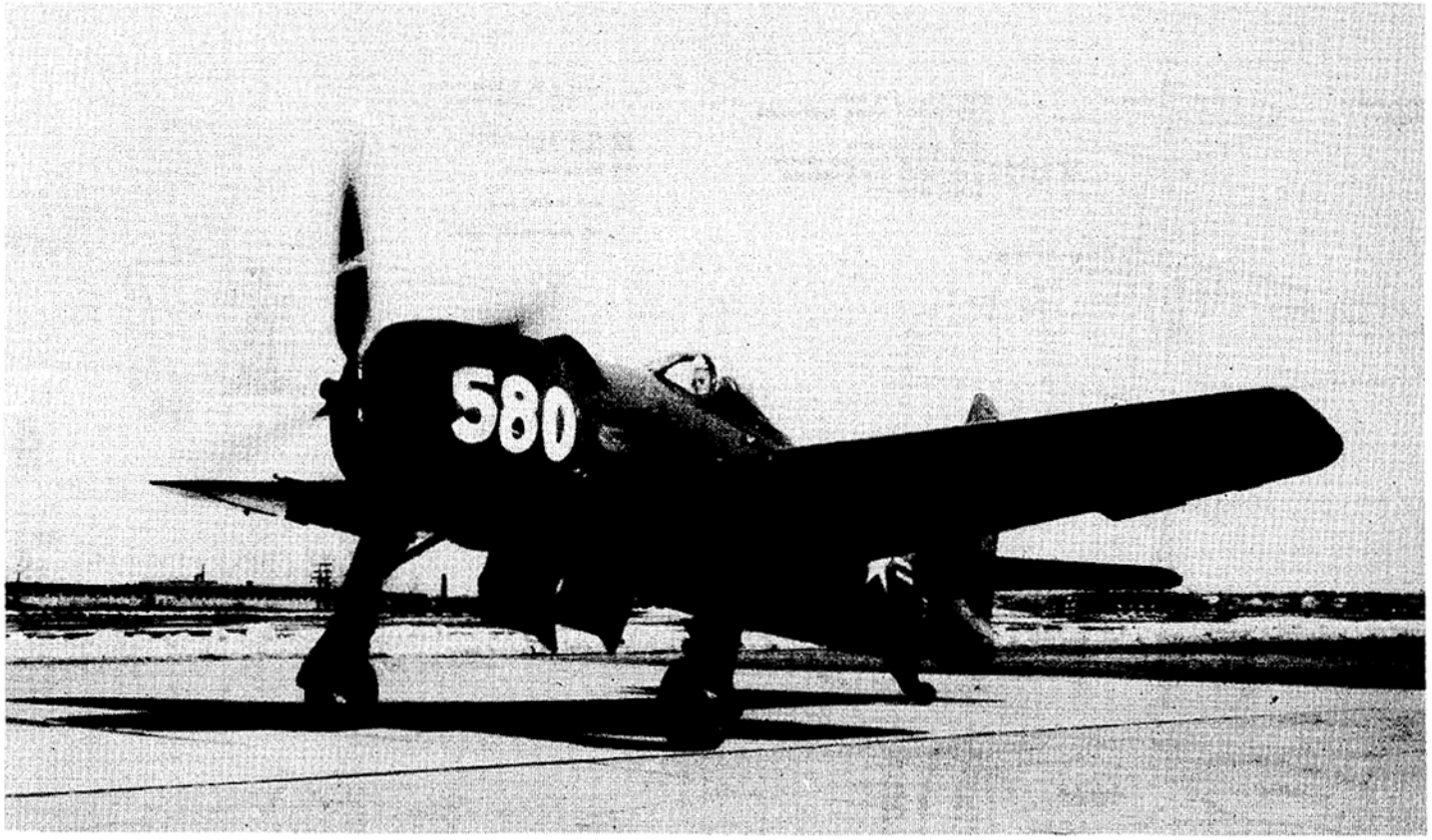


STANDARD AIRCRAFT CHARACTERISTICS

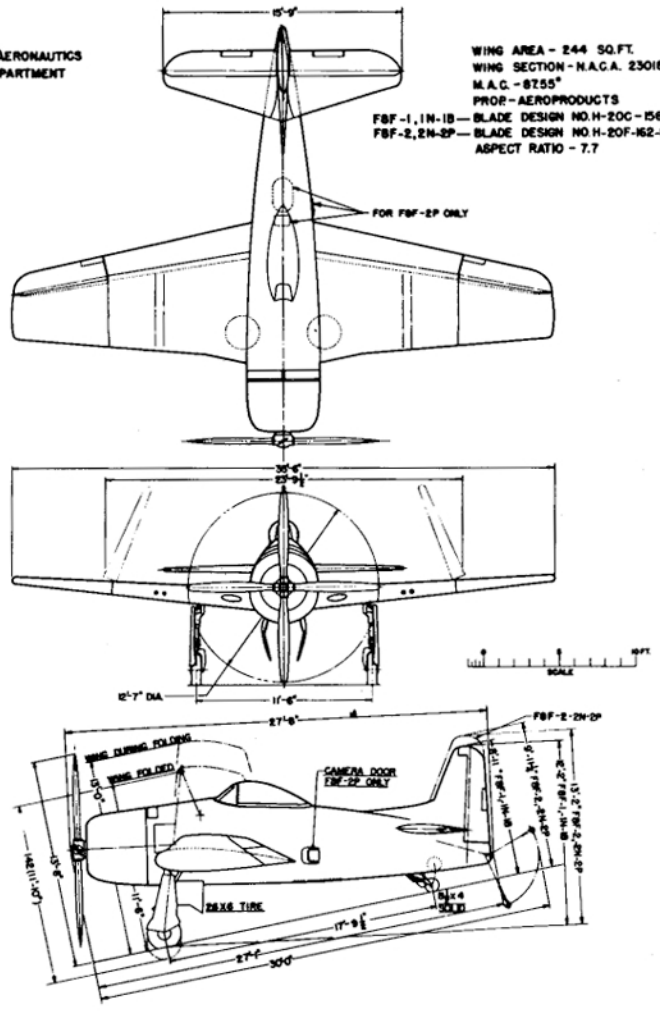
F8F-2P "BEARCAT"

GRUMMAN

Standard Aircraft Characteristics NAVAER 1335A (REV. 1-49)

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 244 SQ.FT.
WING SECTION - N.A.C.A. 23018-23009
M.A.C. - 87.55"
PROP - AEROPRODUCTS
F8F-1, 1N-1B — BLADE DESIGN NO. H-20C-156-5M5
F8F-2, 2N-2P — BLADE DESIGN NO. H-20F-162-11M5
ASPECT RATIO - 7.7



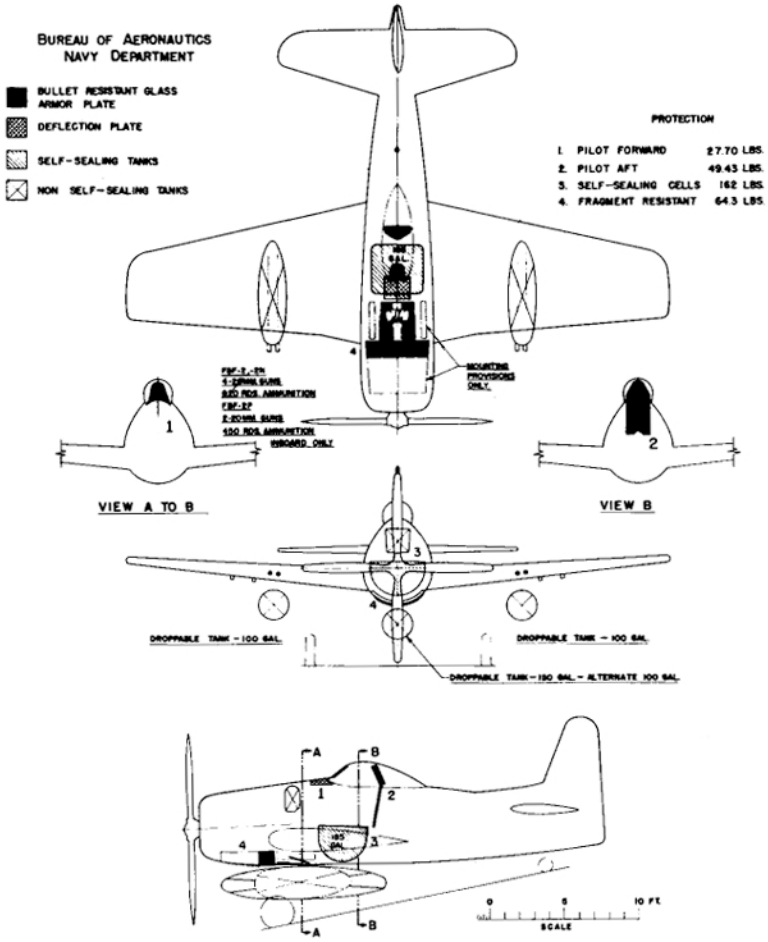
DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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

PROTECTION

1.	PILOT FORWARD	27.70 LBS.
2.	PILOT AFT	49.43 LBS.
3.	SELF-SEALING CELLS	162 LBS.
4.	FRAGMENT RESISTANT	64.3 LBS.



ARMAMENT & TANKS

BUAER NO. 8466

MISSION AND DESCRIPTION

The F8F-2P airplane is a photographic version of the F8F-2 general purpose fighter. It may be converted to an F8F-2 by removal of the camera and installation of two 20mm cannon outboard of the present cannons.

This airplane is designed for catapulting and for arrested landings aboard a carrier. The airplane is conventional in design and structure, with aluminum alloy single spar wing and monocoque fuselage. Landing gear, blow up slotted flaps, under wing type dive recovery flaps, gun charging and oil cooler doors are hydraulically operated. Spring type balancing tabs are provided on both ailerons. The left tab is controllable in flight by the pilot. The rudder and elevators are provided with trim tabs adjustable in flight by the pilot. Capacity of 16 gallons of water is supplied for water-injection.

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY	7,795	
BASIC	8,359	
DESIGN	10,200	6.3
COMBAT	10,080	6.4
MAX.T.O	13,100	4.9
MAX.LAND	13,100	

All weights are actual.

FUEL AND OIL

Gal.	No. Tanks	Location
185	1	Fuse, Seal
150	1	Fuse, Drop
200	2	Wing, Drop

FUEL GRADE.....115/145
FUEL SPEC.....AN-F-48

OIL

CAPACITY (Gals.).....17
GRADE.....1100-1120
SPEC.....AN-O-8

POWER PLANT

NO. & MODEL....(1) R-2800-30W
MFR.....Pratt & Whitney
SUPERCH...1 Stage, Var. Speed
PROP. GEAR RATIO.....0.450
PROP. MFR.....Aeroproducts
PROP. DES. NO...H20F-162-11M5
NO. BL./DIA.....4/12'-7"

RATINGS

	Bhp @	Rpm @	Alt.
T. O.	2,250	2,800	S. L.
COMBAT	2,500	2,800	S. L.
	1,800	2,800	23,250'
MIL.	2,250	2,800	S. L.
	1,600	2,800	22,000'
NORMAL	1,720	2,600	S. L.
	1,450	2,600	22,000'

SPEC. NO. 8118

ORDNANCE

GUNS

No.	Type	Location	Rds.
2	20 mm	Wing	450

BOMBS & ROCKETS

Type	Size	Location	No.
HVAR	5"	Wing	4
A.R.	11.75"	External	3
Bomb	1,000#	Wing	2
Bomb	1,600#	Fuselage	1

FIRE CONTROL

AFCS.....Mk. 6 Mod. 0

CAMERAS

One camera, vertical or oblique. May be K-18 (24") or K-17 (6" or 12" or 24").

MAX. BOMB CAP.....3,600 lbs.

DIMENSIONS

WING AREA	244 sq. ft.
SPAN	35' - 6"
LENGTH	27' - 8"
HEIGHT	13' - 8"
TREAD	11' - 6"
M.A.C	7' - 3"
PROP. CLEAR	6"

ELECTRONICS

VHF TRANSCEIVER.....AN/ARC-1
VHF HOMING.....AN/ARR-2A
RANGE REC.....R-23/ARC-5
IFF.....AN/APX-1
RADIO ALTIMETER.....AN/APN-1

PERFORMANCE SUMMARY

LOADING CONDITION		(1) PHOTO 1-150 Gal.Tank		(4) PHOTO 1-150 Gal.Tank 2-100 Gal.Tanks	
TAKE-OFF WEIGHT	lbs.	11,170		12,580	
Fuel (Fixed/Drop)	lbs.	1,110/900		1,110/2,100	
Bombs	lbs.				
Wing/Power Loading (A)lbs/sq.ft;lbs/bhp.		45.8/7.7		51.5/8.7	
Stall Speed--Power off	kn.	81.6		86.5	
Stall Speed--Power off - No Fuel	kn.	73.9		74.7	
Stall Speed--Power on	kn.	69.4		73.7	
Maximum Speed/Alt (B)	kn/ft.	346/25,800		298/24,800	
Take-off Distance, deck -- calm	ft.	570		795	
Take-off Distance, deck 25kn.	ft.	270		395	
Take-off Distance, Airport	ft.				
Rate of climb -- sea level (B)	ft/min.	2,610		2,100	
Service Ceiling (B)	ft.	37,100		34,400	
Time-to-climb 10,000 ft. (B)	min.	3.8		4.9	
Time-to-climb 20,000 ft. (B)	min.	8.4		11.1	
Combat Range/V av 15,000 ft.	n.mi/kn.	1,055/181		1,595/180	
Combat Radius/V av (F-1) ft.	n.mi/kn.	235/182		635/181	
LOADING CONDITION		(2) COMBAT	(3) COMBAT		
GROSS WEIGHT	lbs.	10,080	10,080		
Engine power		Combat	Normal		
Fuel	lbs.	1,110	1,110		
Bombs/Tanks					
Max. speed at sea level	kn.	334	291		
Max. speed/Alt	kn/ft.	388/28,000	363/26,200		
Combat speed/Alt	kn/ft.	374/15,000	341/15,000		
Rate of climb SL	ft/min.	4,570	3,000		
Ceiling for 500 fpm R/C	ft.	38,350	35,400		
Time-to-climb/Alt.	min/ft.	5.4/20,000	7.3/20,000		

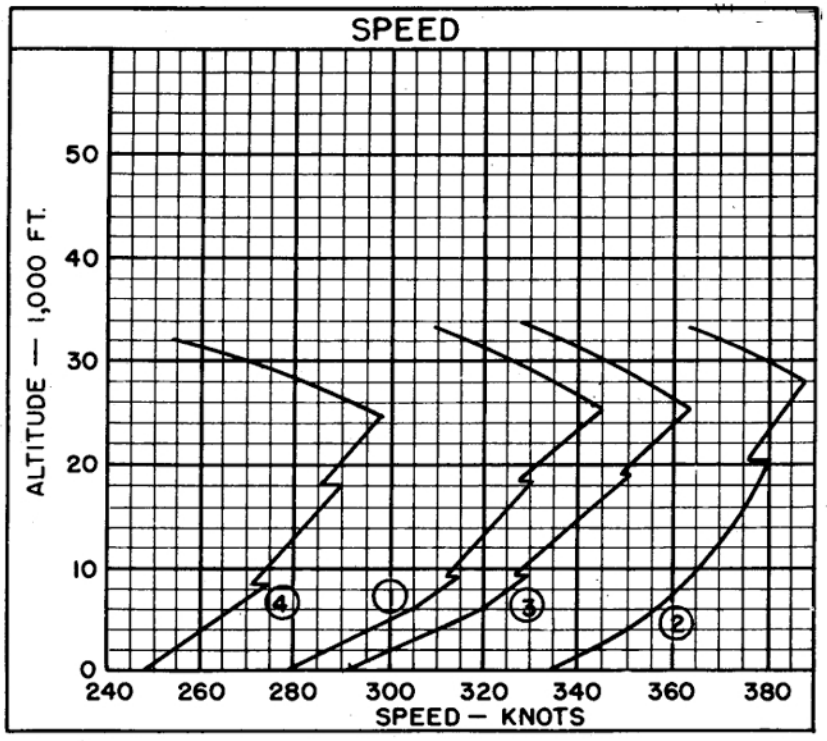
NOTES

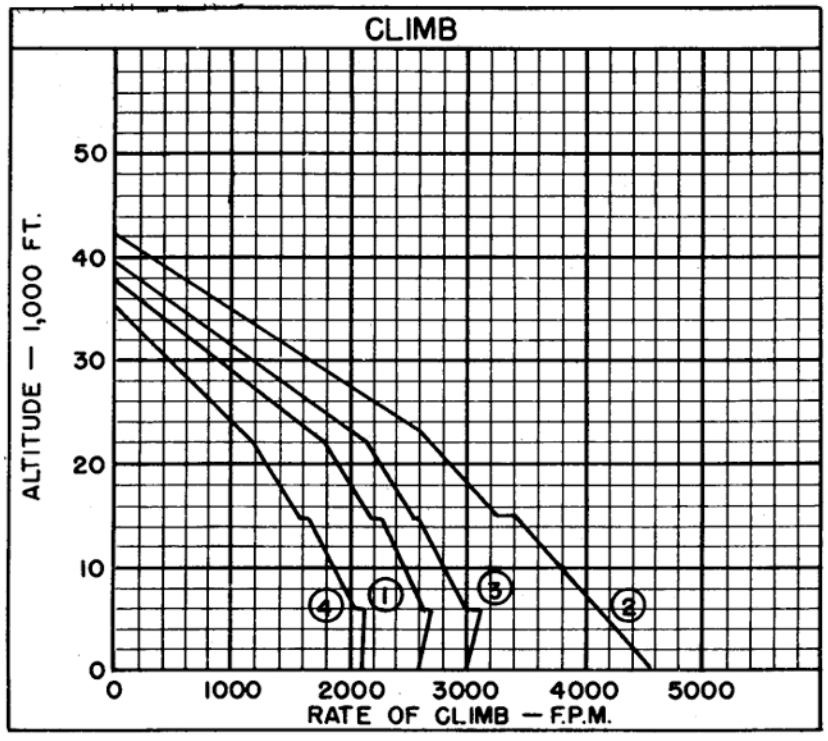
(A) BHP at Maximum Critical Altitude
(B) Normal BHP

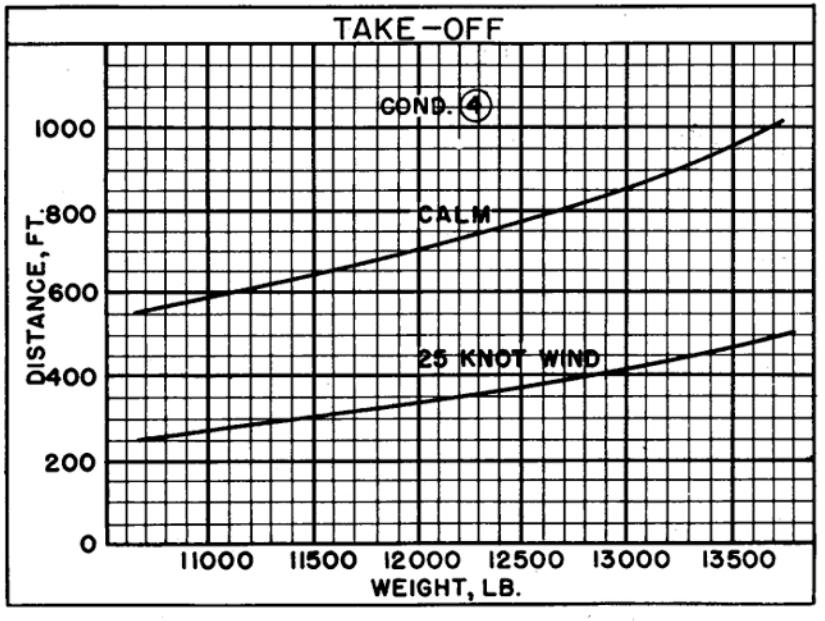
Performance is based on F8F-1 flight test. Range and radius are based on AEL engine test fuel consumption data increased by 5%.

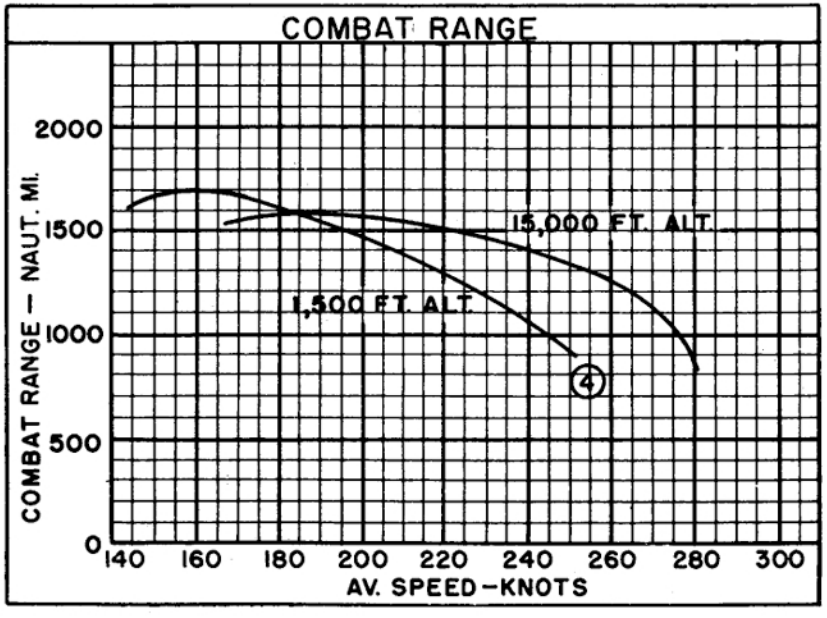
In all conditions, one MK 51-9 fuselage bomb-rack and sway bracing, and two faired MK 51-9 wing bomb racks and sway bracing, are aboard. Rocket launchers not aboard.

Removal of all bomb racks and sway braces increases $V_{max.}$/S.L. by 11 knots in Col. 2. Maximum speed at altitude is increased by 10 knots.









NOTES

FIGHTER COMBAT RADIUS PROBLEM NO. F-1 (Recip. Eng.)

WARM-UP	RENDEZVOUS	CLIMB	CRUISE-OUT	DROP TANKS	COMBAT	CRUISE-BACK	RESERVE
20 min. 50% N. RPM TAKE-OFF 1 min. at T.O.Pr.	20 min. at sea level at 60% Nor. Pr.	to 15,000 ft. at Nor. Pr.	at 15,000 ft. V for Max. Range	and BOMBS FIRE ROCKETS	20 min. at 15,000 ft. 10 min. Combat & 10 min. Mil. Pr. and descend	1500', 170 kn TAS (under 60% NSP) or V Max. Range if over 170 kn	60 min. at V for Max. Range

RADIUS = CLIMB + CRUISE-OUT = CRUISE-BACK

Combat radius of Column (1) is limited by the amount of protected fuel available for combat and return. In Column (1), 41 gallons are dropped before entering combat. If external tanks are carried into combat, and dropped when empty, the radius would be 300 nautical miles.

Combat radius of Column (4) is calculated on the assumption that external tanks containing fuel are carried into combat and dropped when empty.

Spotting: 200 foot length is required to spot 28 airplanes on the 96 foot wide deck immediately aft of the forward ramp on the CV-9 class carriers.
