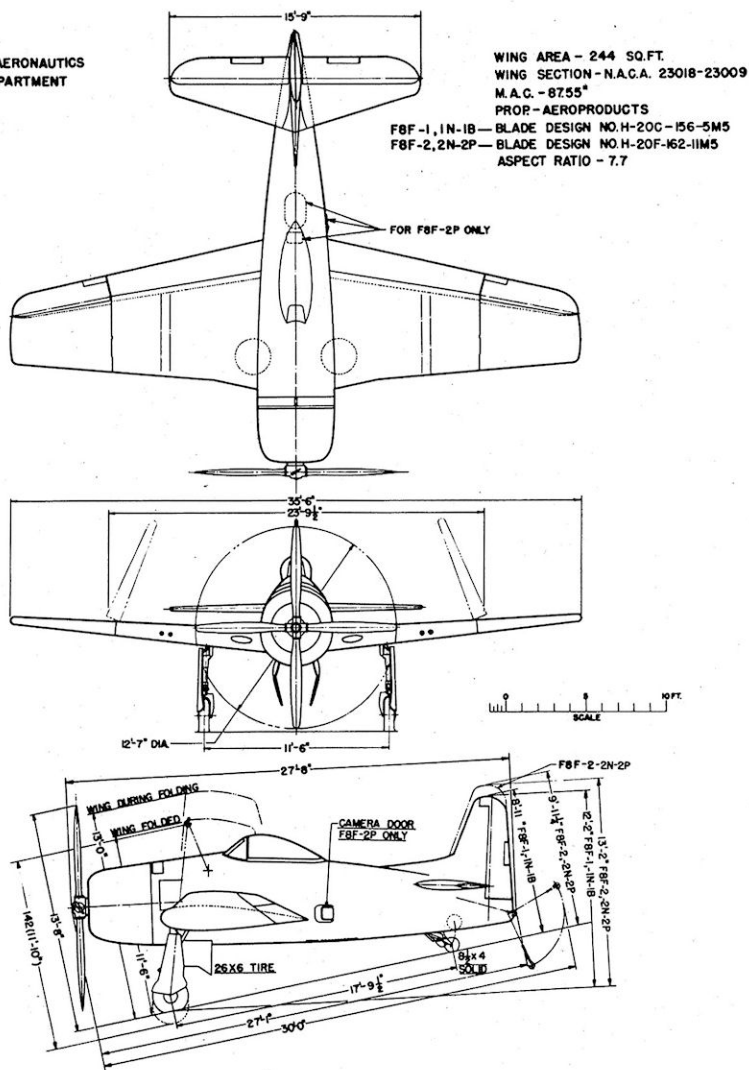


# STANDARD AIRCRAFT CHARACTERISTICS

## F8F-2 "BEARCAT"

GRUMMAN

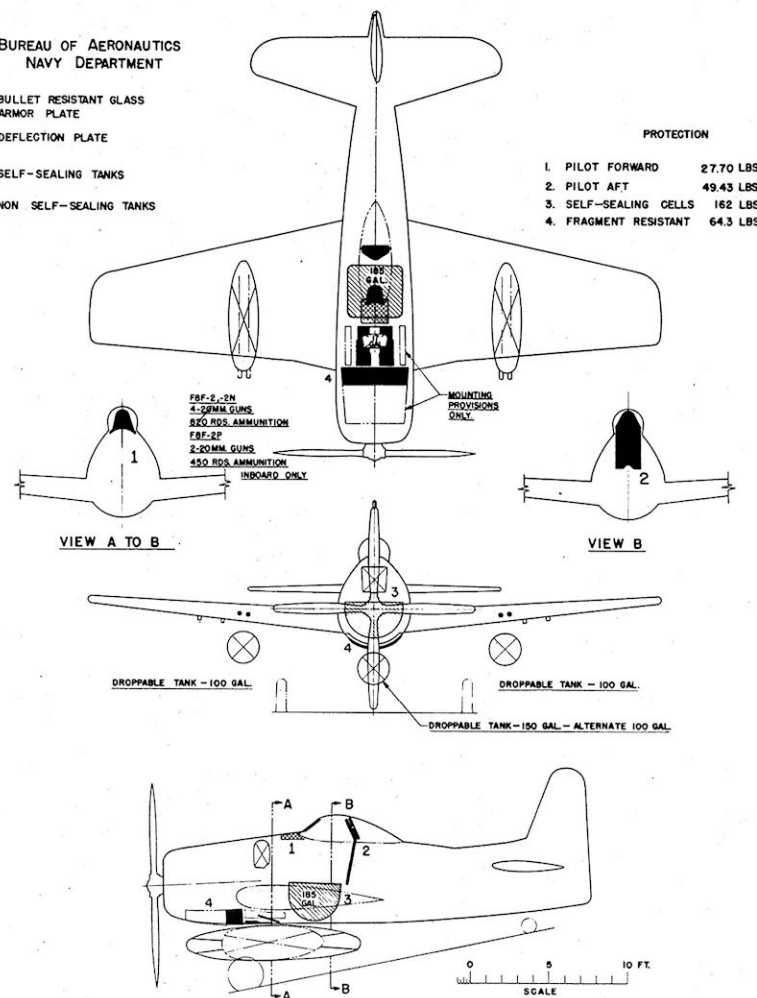
BUREAU OF AERONAUTICS  
NAVY DEPARTMENT



DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

- BULLET RESISTANT GLASS ARMOR PLATE
- ▨ DEFLECTION PLATE
- ▤ SELF-SEALING TANKS
- ⊗ NON SELF-SEALING TANKS



ARMAMENT & TANKS

BUAER NO. 8466

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**MISSION AND DESCRIPTION**

The F8F-2 airplane is a general purpose fighter whose mission is to destroy enemy aircraft and installations. It is capable of bombing and rocket attacks.

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 mono-coque 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.....	7,650.....	
BASIC.....	8,390.....	
DESIGN.....	10,200.....	6.3
COMBAT.....	10,337.....	6.2
MAX.T.O.....	13,460.....	4.75
MAX.LAND.....	13,100.....	

All weights are actual.

**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		

**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

**ORDNANCE**

GUNS

No.	Type	Location	Rds.
4	20 mm	Wing	820

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

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 RECEIVER....R-23/ARC-5  
 IFF.....AN/APX-1  
 RADIO ALTIMETER.....AN/APN-1

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



PERFORMANCE SUMMARY				
LOADING CONDITION		(1) FIGHTER 1 - 150 Gal. Tank	(4) BOMBER 2-1,000# Bombs 1-150 Gal.Tank	(5) ESCORT 1-150 Gal.Tank 2-100 Gal.Tank
TAKE-OFF WEIGHT	lbs.	11,428	13,460	12,837
Fuel (Fixed/Drop)	lbs.	1,110/900	1,110/900	1,110/2,100
Bombs	lbs.		2,000	
Wing/Power Loading (A)	lbs/sq.ft; lbs/bhp.	46.8/7.9	55.2/9.3	52.6/8.9
Stall Speed--Power off	kn.	82.6	89.6	87.4
Stall Speed--Power off - No Fuel	kn.	74.9	82.6	75.7
Stall Speed--Power on	kn.	70.3	76.2	74.4
Maximum Speed/Alt (B)	kn/ft.	346/25,800	294/24,800	297/24,800
Take-off Distance, deck -- calm	ft.	605	940	830
Take-off Distance, deck 25 kn.	ft.	288	480	417
Take-off Distance, Airport	ft.			
Rate of climb -- sea level (B)	ft/min.	2,550	1,965	2,060
Service Ceiling (B)	ft.	36,900	33,400	34,250
Time-to-climb 10,000 ft. (B)	min.	3.7	5.1	4.9
Time-to-climb 20,000 ft. (B)	min.	8.4	11.8	11.1
Combat Range/V av 15,000	ft. n.mi/kn.	1,055/181	770/180	1,595/180
Combat Radius/V av (F-1)	ft. n.mi/kn.	235/182	235/181	635/181
LOADING CONDITION		(2) COMBAT	(3) COMBAT	
GROSS WEIGHT	lbs.	10,337	10,337	
Engine power		Combat	Normal	
Fuel	lbs.	1,110	1,110	
Bombs/Tanks				
Max. speed at sea level	kn.	336	293	
Max. speed/Alt	kn/ft.	388/28,000	363/26,200	
Combat speed/Alt	kn/ft.	375/15,000	342/15,000	
Rate of climb SL	ft/min.	4,465	2,930	
Ceiling for 500 fpm R/C	ft.	38,200	35,100	
Time-to-climb/Alt.	min/ft.	5.5/20,000	7.4/20,000	

NOTES

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

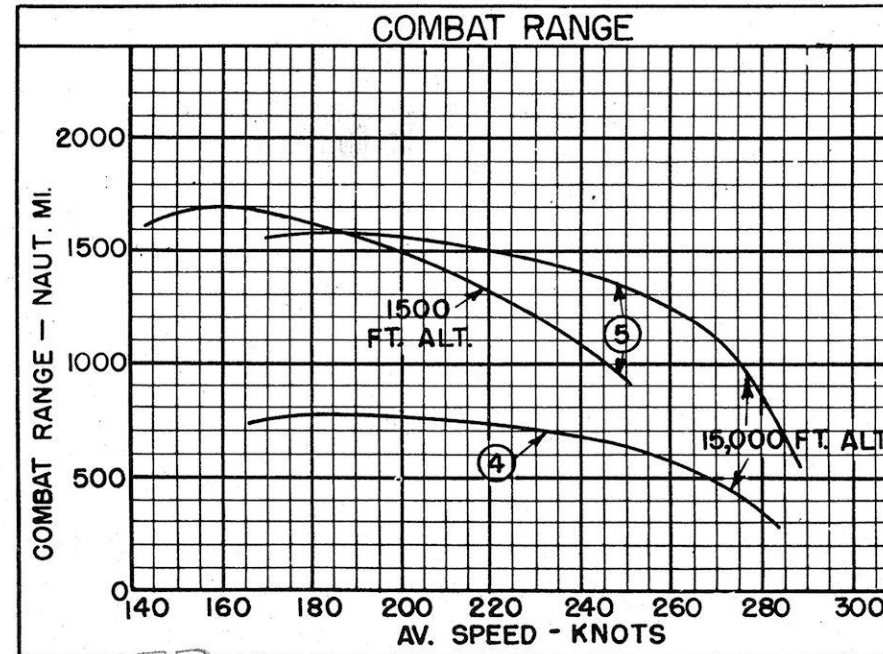
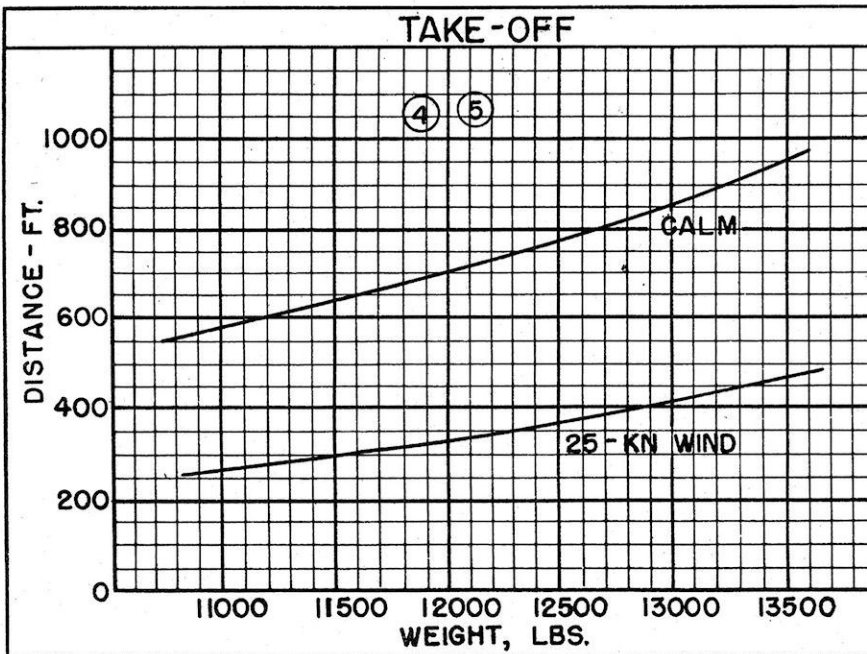
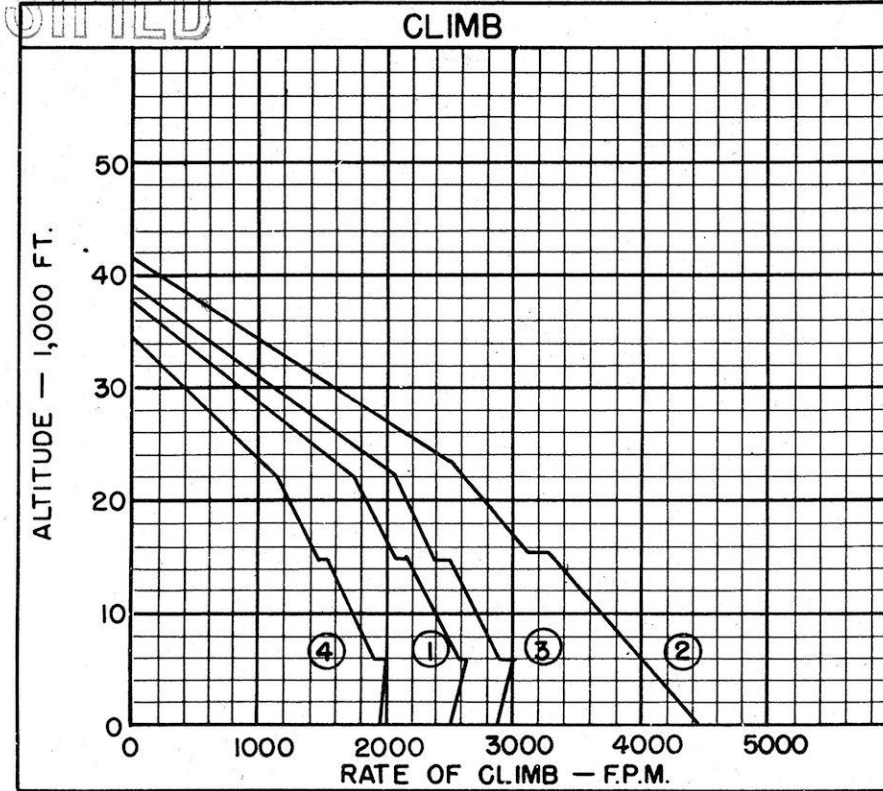
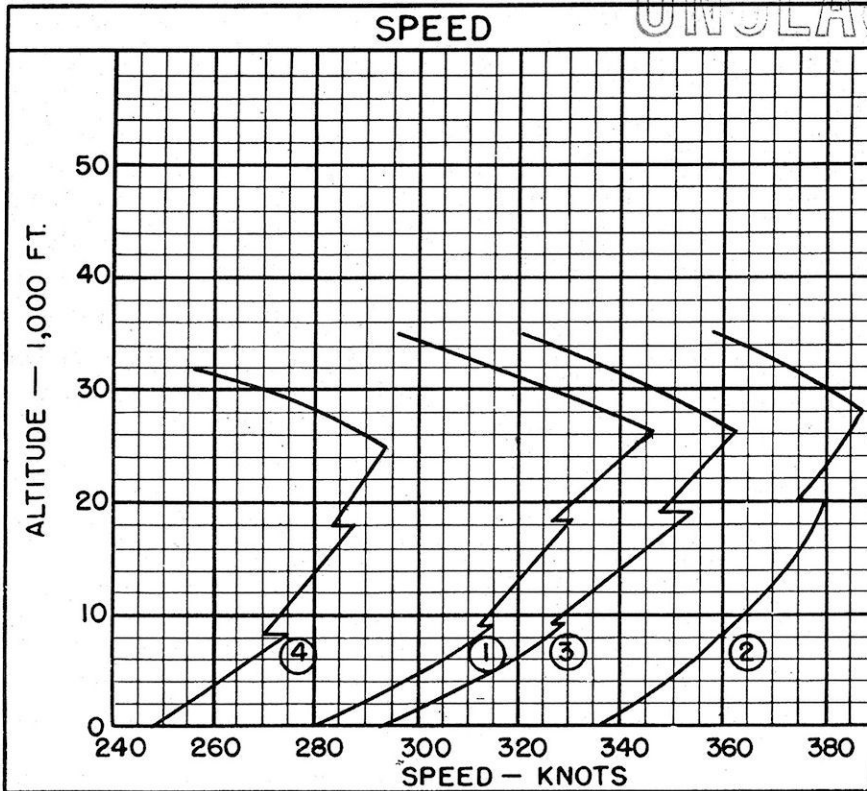
Performance is based on F8F-1 flight test. Range and radius are based on AEL engine test fuel consumption data increased by 5%.

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.

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

LOADING CONDITION COLUMN NUMBER

WWIIaircraftperformance.org

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## NOTES

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

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

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 Combat radius of Column (1) and (4) is limited by the amount of protected fuel available for combat and return. In Column (1), 41 gallons are dropped before entering combat. In Column (4), 13 gallons are dropped. If external tanks are carried into combat, and dropped when empty, the radius in Column (1) would be 300 nautical miles, and Column (4) would be 240 nautical miles.

Combat radius of Column (5) is calculated on the assumption that external tanks containing fuel are carried into combat and dropped when empty.

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 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.  
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