



Standard Aircraft Characteristics NAVAER 1395A (REV. 1-49)

STANDARD AIRCRAFT CHARACTERISTICS

F8F-1, -1B "BEARCAT"

GRUMMAN

MISSION AND DESCRIPTION

The F8F-1 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 monocoque fuselage. Landing gear, slotted blow up 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.

DIMENSIONS

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

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	7,323.....	
BASIC.....	7,781.....	
DESIGN.....	9,000.....	7.5
COMBAT.....	9,672.....	7.0
MAX.T.O.....	12,740.....	5.3
MAX.LAND.....	10,614.....	

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.....100/130
FUEL SPEC.....AN-F-48

OIL

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

ELECTRONICS

VHF TRANSCEIVER....AN/ARC-1
VHF HOMING.....AN/ARR-2A
RANGE RECEIVER....R-23/ARC-5
IFF.....AN/APX-1

POWER PLANT

NO. & MODEL....(1) R-2800-34W
MFR.....Pratt & Whitney
SUPERCH.....1 Stage, 2 Speed
PROP. GEAR RATIO.....0.450
PROP. MFR.....Aeroproduct
PROP. DES. NO....H20C-156-5M5
NO. BL./DIA.....4/12'-7"

RATINGS

	Bhp @	Rpm @	Alt.
T. O.	2,100	2,800	S. L.
COMBAT	2,750	2,800	S. L.
	2,450	2,800	9,600'
MIL. *	2,100	2,800	3,000'
	1,700	2,800	16,000'
NORMAL	1,700	2,600	8,500'
	1,500	2,600	18,500'
SPEC. NO.	N-8081		

ORDNANCE

GUNS

No.	Size	Location	Rds.
4	.50 cal.	Wing	1200

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

Illuminated Sight..Mk 8 Mod 6

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



PERFORMANCE SUMMARY

LOADING CONDITION	(1) FIGHTER 1-150 Gal. Ext. Tank	(3) BOMBER 2-1000# Bombs 1-150 Gal. Ext. Tank		(6) ESCORT 2-100 Gal. 1-150 Gal. Ext. Tanks
TAKE-OFF WEIGHT lbs.	10,674	12,740		12,083
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.	43.8/7.1	52.3/8.5		49.4/8.1
Stall Speed--Power off kn.	79.7	87.1		84.9
Stall Speed--Power off - No Fuel kn.	71.9	80.0		72.7
Stall Speed--Power on kn.	67.9	74.1		72.3
Maximum Speed/Alt (B) kn/ft.	339/19,600	301/19,000		302/19,000
Take-off Distance, deck -- calm ft.	544	842		747
Take-off Distance, deck 25 kn. ft.	250	418		362
Take-off Distance, Airport ft.				
Rate of climb -- sea level (B) ft/min.	3,230	2,420		2,550
Service Ceiling (B) ft.	34,700	29,500		31,000
Time-to-climb 10,000 ft. (B) min.	3.3	4.3		4.1
Time-to-climb 20,000 ft. (B) min.	7.4	10.3		9.7
Combat Range/V av 15,000 ft. n.mi./n.	1,230/217	910/191		1,810/207
Combat Radius/V av (F-1) ft. n.mi./kn.	216/203	216/189		679/201
LOADING CONDITION	(2) COMBAT	(4) COMBAT	(5) COMBAT	(7) COMBAT
GROSS WEIGHT lbs.	9,672	9,672	9,672	10,740
Engine power	Combat	Military	Normal	Combat
Fuel lbs.	1,110	1,110	1,110	2,010
Bombs/Tanks				0/1-150 Gal.
Max. speed at sea level kn.	366	331	307	346
Max. speed/Alt kn/ft.	372/18,800	372/18,800	360/20,000	352/18,600
Combat speed/Alt kn/ft.	367/15,000	357/15,000	341/15,000	347/15,000
Rate of climb SL ft/min.	5,610	4,830	3,750	4,880
Ceiling for 500 fpm R/C ft.	34,800	34,800	34,000	32,000
Time-to-climb/Alt. min/ft.	4.9/20,000	5.2/20,000	6.2/20,000	5.8/20,000

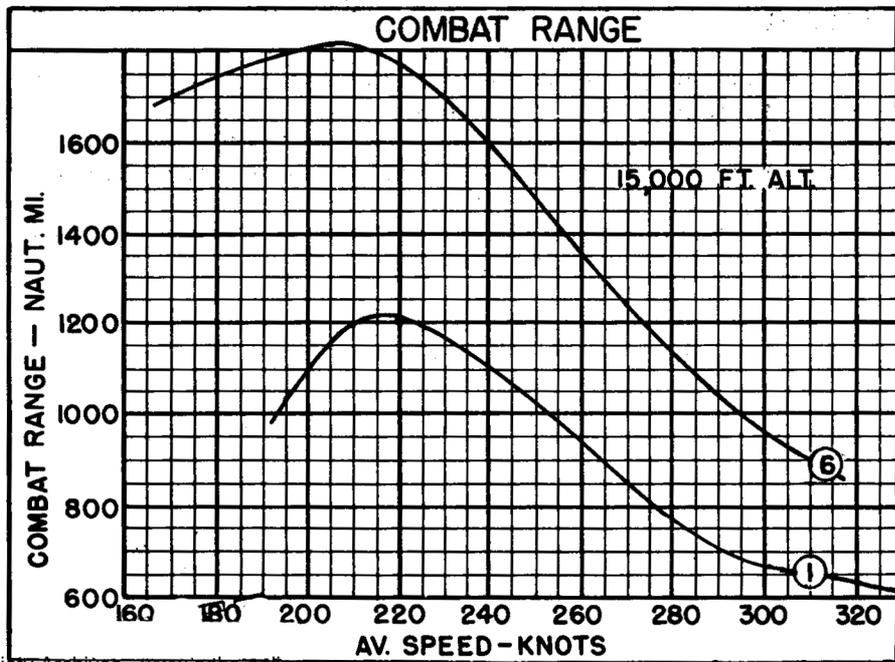
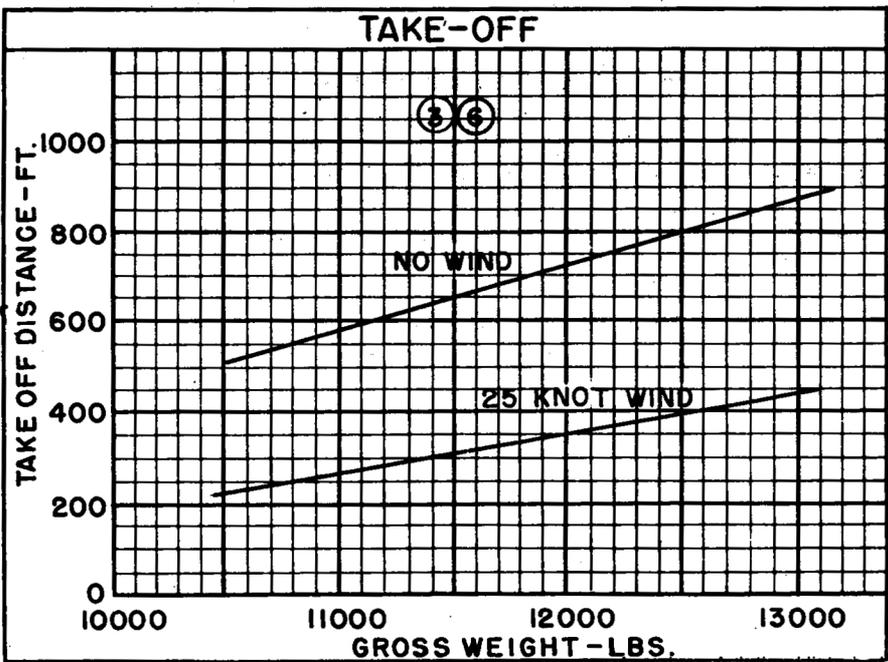
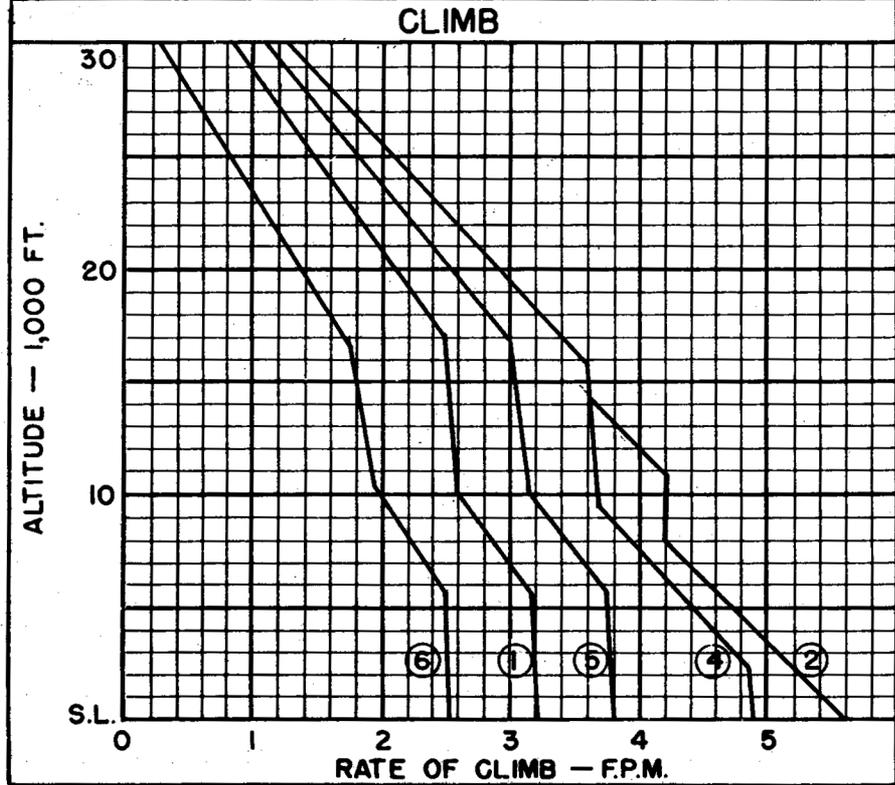
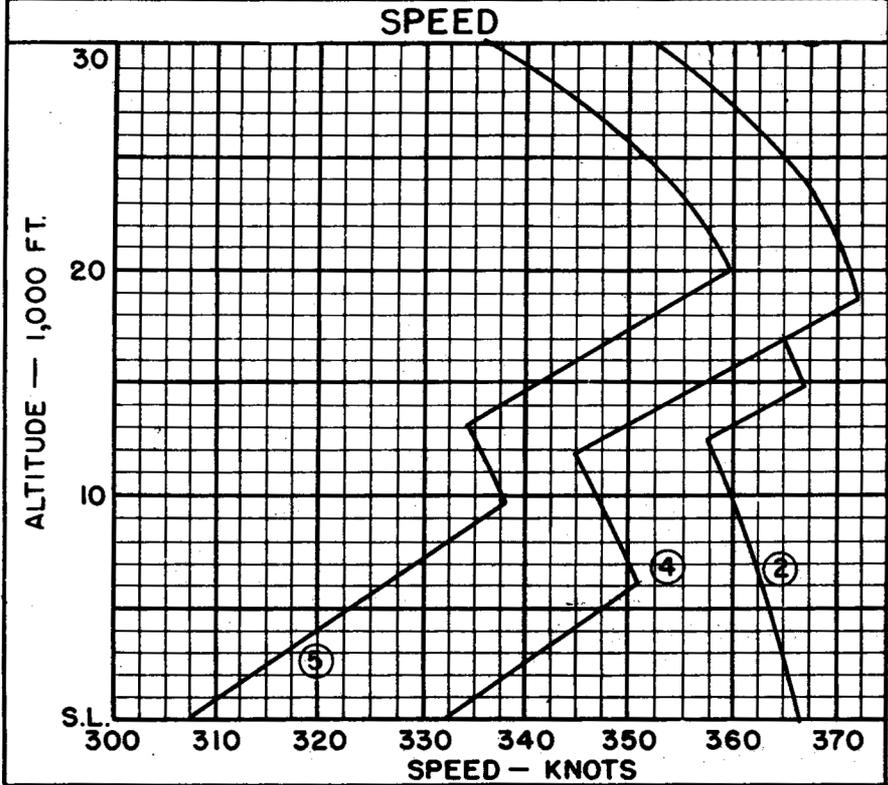
NOTES

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

Performance is based on flight test data and calculations.

 Combat range and radius are based on AEL fuel consumption data increased 5%.

Combat radius in column (6) is calculated on the assumption that the 150 gal. tank is carried through combat, and only dropped when empty.



NOTES

In combat radius, it is assumed that fuel is consumed in the following order:

1. Wing Tanks, if any
2. Centerline Tank
3. Internal Tank

FIGHTER COMBAT RADIUS FORMULA NO. F-1 - CONDITIONS NOS. (1), (4), & (5)

<u>WARM-UP</u> 20 min.	<u>RENDEZVOUS</u> 20 min. at sea level	<u>CLIMB</u> to 15000 ft.	<u>CRUISE-OUT</u> at 15,000 ft. Vel.	<u>DROP BOMBS</u>	<u>COMBAT</u> 20 min. at 15,000 ft.	<u>CRUISE-BACK</u> at 1,500 ft. 170	<u>RESERVE</u> 60 min.
<u>TAKE-OFF</u> 1 min.	at 60% N.S.P. Auto Lean	at N.R.P. Auto Lean	for Max. Range Auto Lean	FIRE ROCKETS	10 min. WEP 10 min. Mil. Pr. & descend	kts. TAS Auto Lean	at Vel. for Max. Range Auto Lean

$$\text{RADIUS} = \text{CLIMB} \div \text{CRUISE-OUT} = \text{CRUISE-BACK}$$

Spotting: 203 ft. length is required to spot 35 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on CV-9 class carriers.

F8F-1B --

The F8F-1B is similar to the F8F-1, except that it has 4 - 20 mm. guns with 820 rounds of ammunition instead of .50 cal. guns.

In any of the loading conditions shown on the previous page, it is 442 lbs. heavier than the F8F-1.

In performance, the high speed is 2 kts. less than for the F8F-1, and the rate of climb at sea level is 250 to 300 ft./min. less.

The take-off distance in a 25 knot wind is about 35 feet more than that of the F8F-1.