

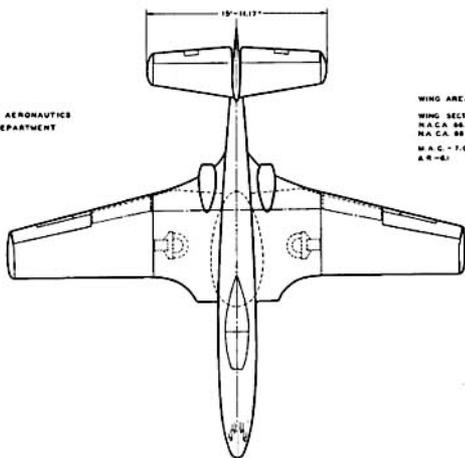
Standard Aircraft Characteristics NAVAER 4335A (REV. 1-49)

# STANDARD AIRCRAFT CHARACTERISTICS

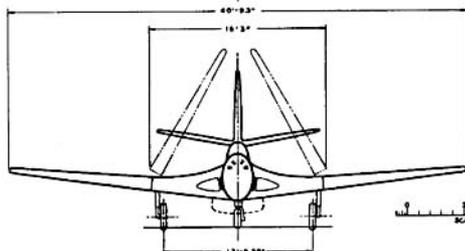
## FH-1 "PHANTOM"

MCDONNELL

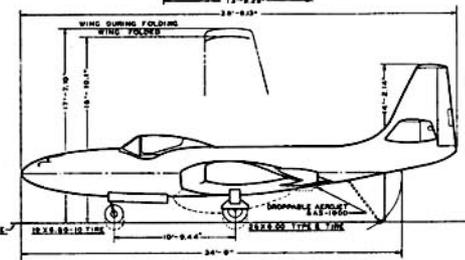
BUREAU OF AERONAUTICS  
NAVY DEPARTMENT



WING AREA - 273.74 SQ. FT.  
WING SECTION  
W.A.C.A. 8827-3181A-20 THEORETICAL ROOT  
W.A.C.A. 882231-444(VA-8) THEORETICAL TIP  
M.A.C. - 7.09 FT.  
A.R. - 81



SCALE 1" = 10 FT.



STATIC GROUND LINE  
12 X 8.88 TYPE 1  
10 X 8.44"  
12 X 8.88 TYPE 1  
34' 8"

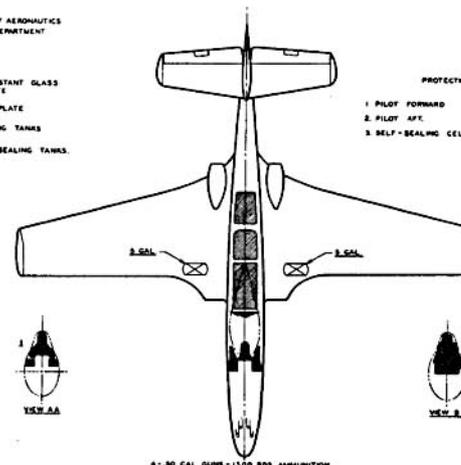
DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

- BULLET RESISTANT GLASS ARMOR PLATE
- DEFLECTOR PLATE
- SELF-SEALING TANKS
- ⊗ NON SELF-SEALING TANKS

PROTECTION

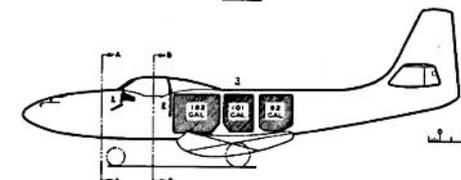
- 1. PILOT FORWARD 53.88 LBS.
- 2. PILOT AFT 48.22 LBS.
- 3. SELF-SEALING CELLS 343.0 LBS.



4 X .30 CAL. GUNS - 1100 RDS. AMMUNITION



300 GALLONS  
233 GALS.



SCALE 1" = 10 FT.

ARMAMENT & TANKS

**MISSION AND DESCRIPTION**

The FH-1 airplane is a single seat general purpose Navy fighter equipped with two turbo-jet engines. It is a carrier-based landplane equipped with retractable tricycle landing gear and retractable arresting gear for deck landings. The airplane is designed for deck or catapult take-off, and provisions are made for jato take-offs.

All controls are conventional. Split flaps are provided for landing and take-off and speed brakes which retract into the wing out-board of the fold provide additional control.

Two belly tanks are provided -- a large one for ferry flights and a smaller one for high speed, maneuvering flight.

**WEIGHTS**

Loadings	Lbs.	L.F.
EMPTY.....	6,699.....	
BASIC.....	7,083.....	
DESIGN.....	9,800.....	7.35
COMBAT.....	9,974.....	7.2
MAX.T.O.....	12,500.....	5.5
MAX.LAND.....	12,500.....	

All weights are actual.

**POWER PLANT**

NO. & MODEL.....(2) J30-WE-20  
MFR.....Westinghouse  
TYPE.....10 Stg. Axial Compr.  
1 Stg. Turbine  
ENG. LENGTH.....94"  
ENG. DIA.....19"

**RATINGS**

Lbs. @ Rpm @ Alt.

T. O. 1,560 17,000 S.S.L.  
MIL. 1,560 17,000 S.S.L.  
NORMAL 1,285 15,700 S.S.L.

SPEC. NO. WAGT-19XB2B-102D

**FUEL AND OIL**

Gals.	No. Tanks	Location
182	1	Fuse., Fwd.
101	1	Fuse., Main
92	1	Fuse., Aft
295	1	Fuse., Drop
FUEL GRADE.....100/130		
FUEL SPEC.....AN-F-48		

**OIL**

CAPACITY (Gals.).....	10
GRADE.....	1010
SPEC .....	AN-O-9

**ORDNANCE****GUNS**

No.	Size	Location	Rds.
4	.50 Cal.	Nose	1,300

**FIRE CONTROL**

Gun Sight.....Mk 23, Mod 0

**DIMENSIONS**

WING AREA.....	274 sq. ft.
SPAN.....	40' - 9"
LENGTH.....	38' - 9"
HEIGHT.....	14' - 2"
TREAD.....	13' - 9"
M.A.C.....	7' - 1"

**ELECTRONICS**

VHF EQUIP.....	AN/ARC-1
RANGE RECEIVER.....	R-23/ARC-5
NAVIGATING.....	AN/ARR-2A
IFF EQUIP.....	AN/APX-1
	or AN/APX-1A

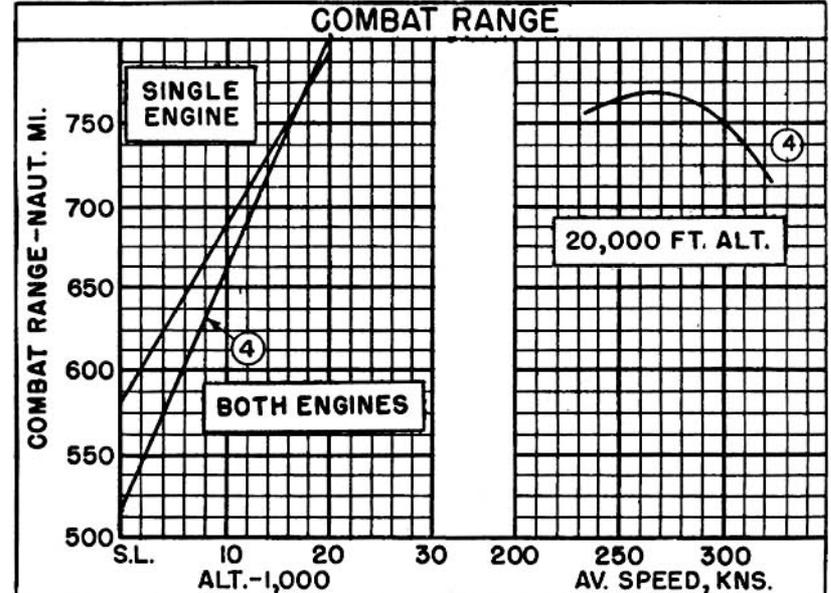
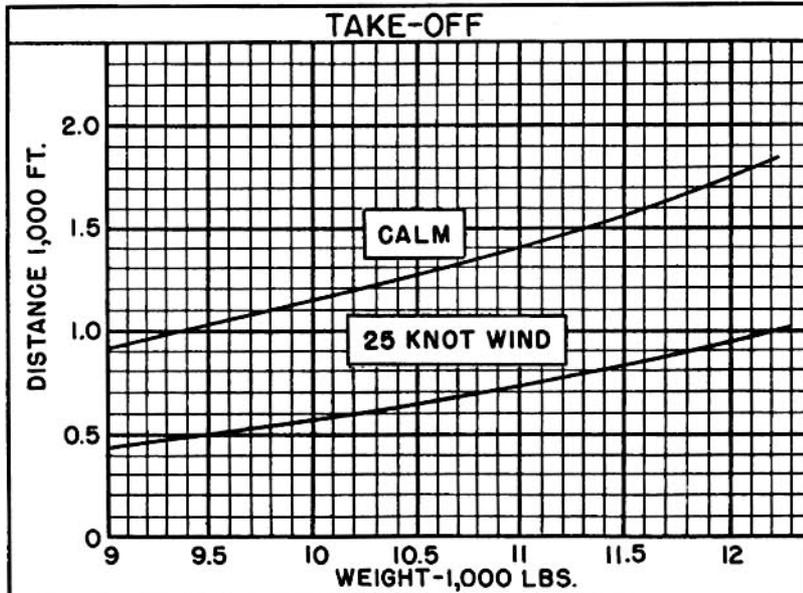
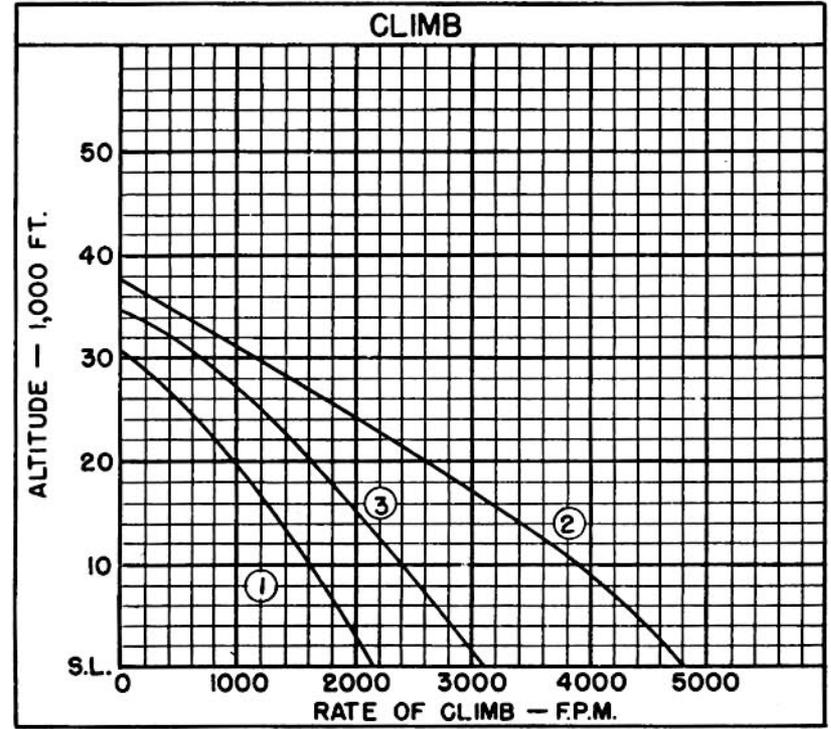
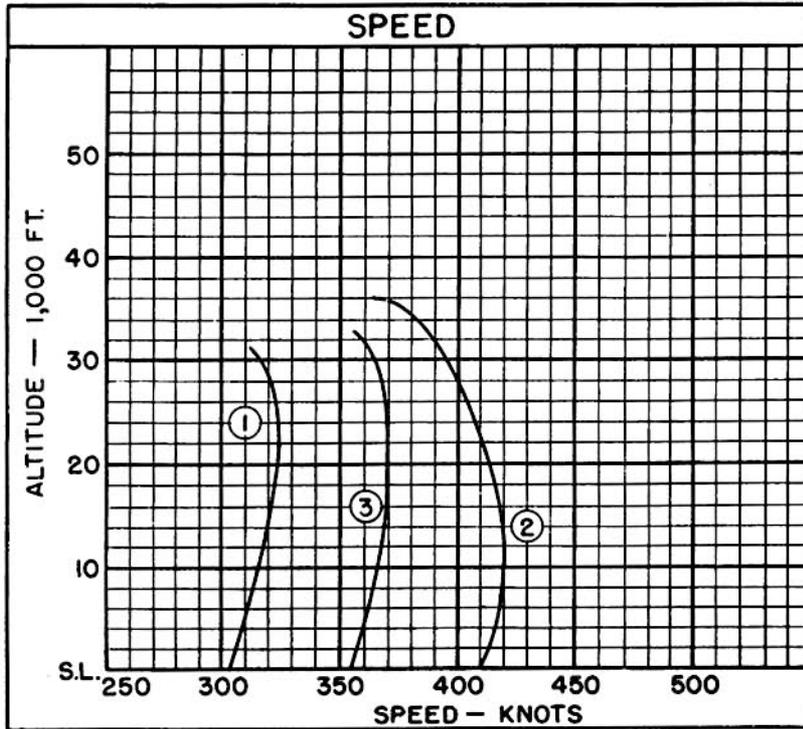


PERFORMANCE SUMMARY				
LOADING CONDITION		(1) FIGHTER 1-190 Gal.Tank		(4) FERRY 1-295 Gal.Tank
TAKE-OFF WEIGHT	lbs.	11,292		11,952
Fuel	lbs.	2,250/1,140		2,250/1,770
Bombs	lbs.			
Wing/Power Loading (A) lbs/sq.ft; lbs/bhp.		41.3/-		43.7/-
Stall Speed--Power off	kn.	86.2		88.6
Stall Speed--Power off - No Fuel	kn.	72.2		72.3
Stall Speed--Power on	kn.	83.0		85.4
Maximum Speed/Alt (B)	kn/ft.	324/20,000		312/20,000
Take-off Distance, deck -- calm	ft.	1,520		1,740
Take-off Distance, deck 25 kn.	ft.	785		920
Take-off Distance, Airport	ft.			
Rate of climb -- sea level (B)	ft/min.	2,133		1,860
Service Ceiling (B)	ft.	29,500		27,700
Time-to-climb 20,000ft. (B)	min.	15.5		17.1
Time-to-climb 30,000ft. (B)	min.			
Combat Range/V av 20,000	ft. n.mi/kn.	670/271		790/267
Combat Radius/V av (F-5)	ft. n.mi/kn.	245/245		320/265
LOADING CONDITION		(2) COMBAT	(3) COMBAT	
GROSS WEIGHT	lbs.	9,974	9,974	
Engine power		Military	Normal	
Fuel	lbs.	2,250	2,250	
Bombs/Tanks				
Max. speed at sea level	kn.	410	355	
Max. speed/Alt	kn/ft.	421/15,000	371/25,000	
Combat speed/Alt	kn/ft.	414/20,000	370/20,000	
Rate of climb SL	ft/min.	4,800	3,100	
Ceiling for 500 fpm R/C	ft.	34,500	31,300	
Time-to-climb/Alt.	min/ft.	11.0/30,000	17.6/30,000	

### NOTES

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

Performance is based on flight test of FH-1 airplane. Range and radius are based on flight test fuel consumption increased by 5%.



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

○ LOADING CONDITION COLUMN NUMBER

## NOTES

Spotting: 200 ft. length is required to spot 30 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on CV-9 class carriers.

## ESCORT FIGHTER COMBAT RADIUS PROBLEM NO. F-5 (Gas Turbine Engine)

<u>WARM-UP TAXI TAKE-OFF</u>	<u>CLIMB (A)</u>	<u>CRUISE-OUT</u>	<u>DESCEND</u>	<u>COMBAT</u>	<u>CLIMB (B)</u>	<u>CRUISE-BACK</u>	<u>RESERVE</u>
5 min. at sea level static normal power of all engines	at max. rate with mil. power to initial cruise-out alt. (Alt. not greater than alt. for 300 ft./min. max. rate of climb with normal power)	with optimum range operation. (State altitudes and any special engine operations involved.)	to 35,000 ft. unless alt. at end of cruise-out is less (No fuel used, no distance made good)  <u>DROP TANKS</u>  only when empty and state when dropped	35,000 ft. or at alt. at end of cruise-out if less, and $V_{max}$ , 15 min. at Mil. power of which 5 min. is with augmentation if available (Fuel used, but no distance made good)	to initial cruise-back alt. under same conditions as for Climb (A) (Fuel used and distance made good)	under same conditions as Cruise-Out	10% of total initial fuel load.

$$\text{COMBAT RADIUS} = \text{CLIMB (A)} \div \text{CRUISE-OUT} = \text{CLIMB (B)} \div \text{CRUISE-BACK}$$

Provisions are incorporated for fuel pump-back from droppable to main tanks after take-off.

