



# STANDARD AIRCRAFT CHARACTERISTICS

## AF-2S "GUARDIAN"

GRUMMAN

CLEARED  
FOR OPEN PUBLICATION

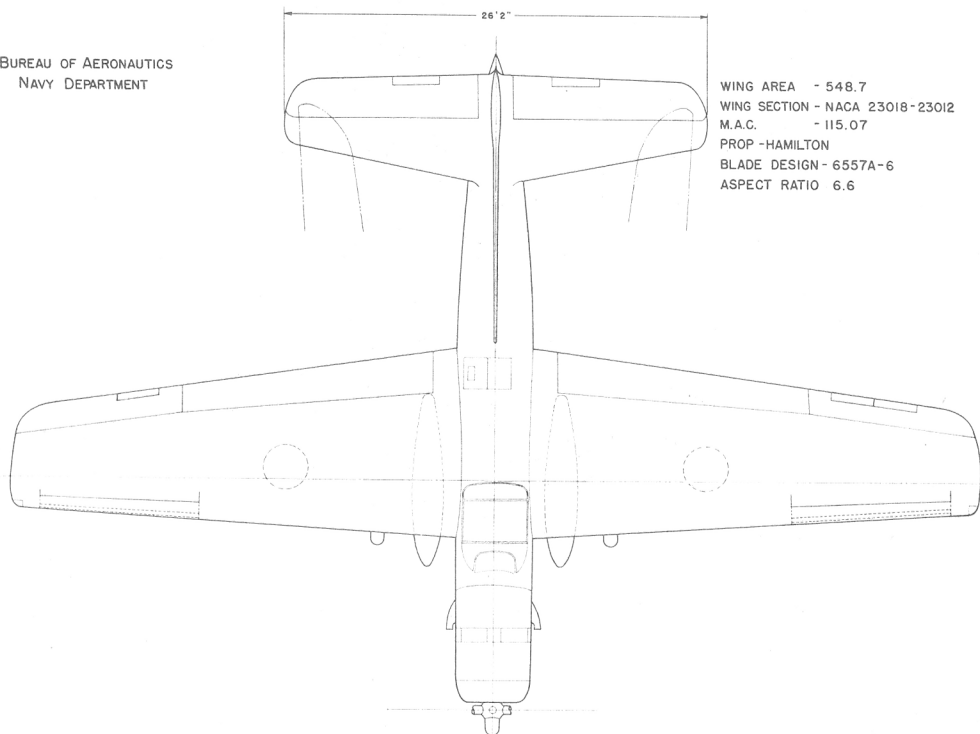
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COMNAVAIRSYSCOM

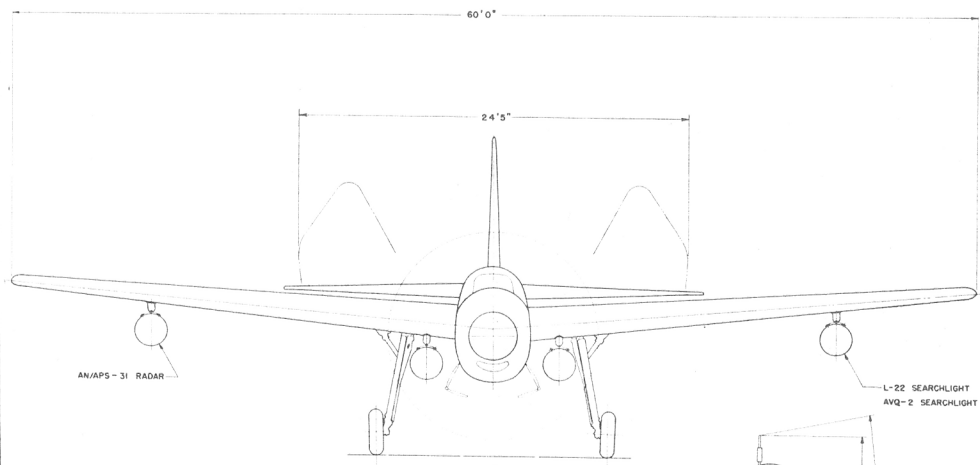
CLASSIFICATION ( ) ( ) TO  
*Unclassified* BY AIR DATE OF  
*AIR-9603*  
ON *1-13-83* *O. H. Person*  
(DATE) (SIGNATURE) ( )  
NAVAL AIR SYSTEMS COMMAND  
DEPARTMENT OF THE NAVY

# SERVICE

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

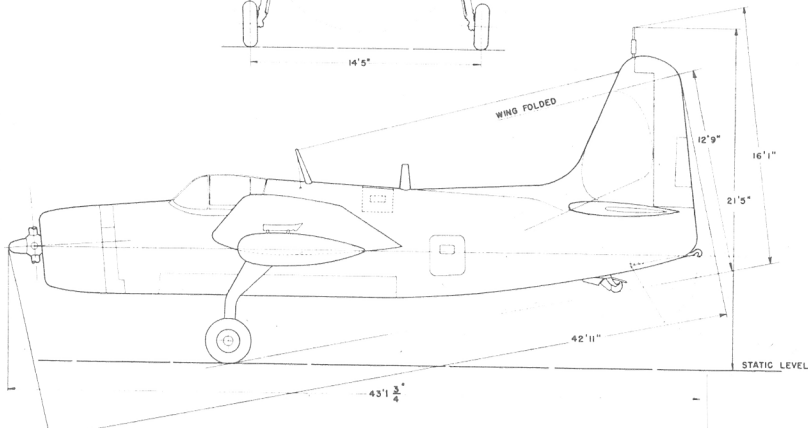


WING AREA - 548.7  
WING SECTION - NACA 23018-23012  
M.A.C. - 115.07  
PROP - HAMILTON  
BLADE DESIGN - 6557A-6  
ASPECT RATIO 6.6



AN/AP-31 RADAR

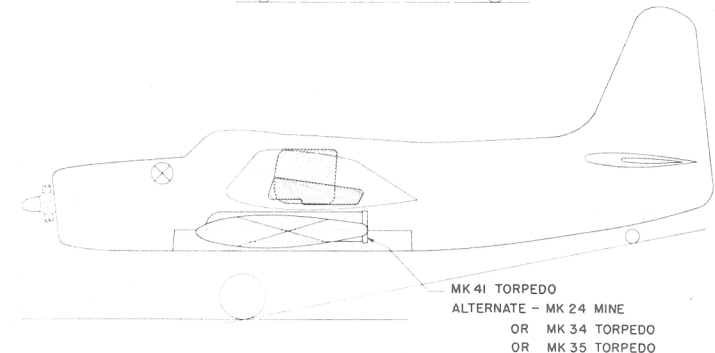
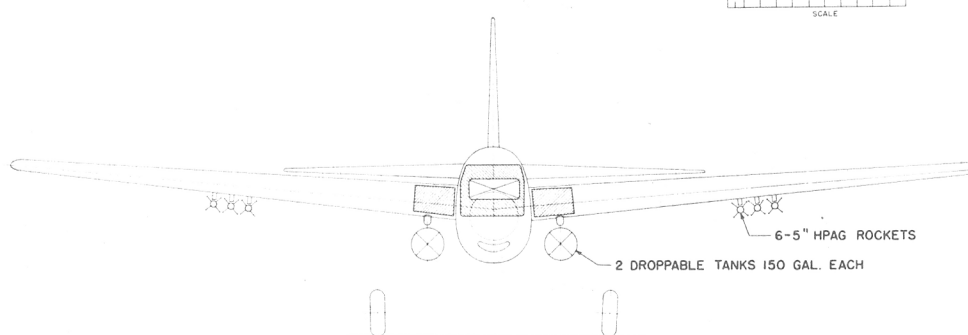
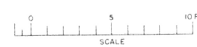
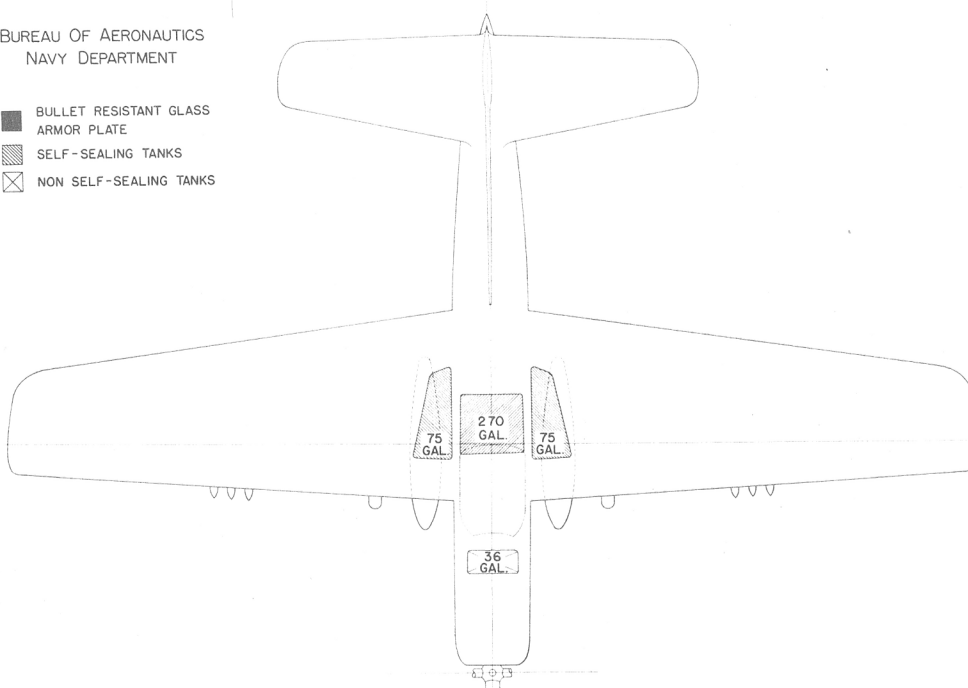
L-22 SEARCHLIGHT (XT83F-25)  
AVQ-2 SEARCHLIGHT (AF-25)



DESCRIPTIVE ARRANGEM

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

- BULLET RESISTANT GLASS ARMOR PLATE
- ▨ SELF-SEALING TANKS
- ⊠ NON SELF-SEALING TANKS



ARMAMENT & TANKS

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

**MISSION AND DESCRIPTION**

The AF-2S airplane's primary mission is to attack enemy submarines after it has been directed to the position last sighted by its companion aircraft, the AF-2W (search version). The AF-2S lays down a pattern of sonobuoys to determine exact location of the enemy submarine, after which, it launches its sonic-directed torpedo to complete the attack. Rockets may be carried to augment the attack.

The airplane is a 3 place land plane for operation ashore or aboard aircraft carriers, with or without the aid of a catapult.

The airplane is conventional in design and structure, with an all-metal 2 spar wing and a semi-monocoque fuselage. Landing gear, slotted flaps, wing folding and pilot's canopy are hydraulically operated. Ailerons are of sealed balance type with spring tabs and one trim tab. Rudder has a combination trim and 4 to 1 ratio balance tab. Elevators are interconnected; one is equipped with a spring tab and the other with a trim tab. Power plant installation is conventional with steel tube mount.

**DIMENSIONS**

WING AREA.....549 sq. ft.  
SPAN.....60' - 0"  
LENGTH.....43' - 2"  
HEIGHT.....16' - 1"  
TREAD.....14' - 5"  
M.A.C.....9' - 7"  
PROP. CLEAR.....9"

**WEIGHTS**

Loadings	Lbs.	L.F.
EMPTY.....	13,971.....	
BASIC.....	15,330.....	
DESIGN.....	19,200.....	5.0
COMBAT.....	17,327.....	5.0
MAX.T.O.....	22,398.....	4.2
MAX.LAND.....	19,200.....	

All weights are calculated.

**FUEL AND OIL**

Gals.	No. Tanks	Location
270	1	Fuse., S.S.
150	2	Wing, S.S.
300	2	Wing, Drop

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

**OIL**

CAPACITY (Gals.).....36  
GRADE.....1100  
SPEC.....AN-O-8

**ELECTRONICS**

RADAR ALT....AN/APN-1 or -1A  
VHF COMMAND.....AN/ARC-1  
MHF LIAISON.....AN/ARC-2  
RANGE REC.....AN/ARC-5  
HOMING.....AN/ARR-2A  
SONOBUOY REC.....AN/ARR-31  
WIRE RECORDER.....13A-3-J  
RADAR.....AN/APS-31  
IFF.....AN/APX-2A  
RADAR RELAY REC....AN/ARR-27  
16 SONOBUOYS IN  
BOMB BAY.....AN/CRT-1B  
SEARCHLIGHT.....AVQ-2

**POWER PLANT**

NO. & MODEL.....(1) R-2800-48  
MFR.....Pratt & Whitney  
SUPERCH.....1 Stage, 1 Speed  
PROP. GEAR RATIO.....0.45  
PROP. MFR.....Ham. Std.  
PROP. DES. NO.....6557A-6  
NO. BL./DIA.....4/13'-2"

**RATINGS**

Bhp @ Rpm @ Alt.

T. O.	2,300	2,800	S. L.
MIL.	2,300	2,800	3,500'
NORMAL	1,900	2,600	7,000'

SPEC. NO. N-8132-A

**ORDNANCE**BOMBS & ROCKETS

Type	Size	Location	No.
Torp.	MK. 41	Bomb Bay	1
Torp.	MK. 34	Bomb Bay	1
Torp.	MK. 35	Bomb Bay	1
Mine	MK. 24	Bomb Bay	1
Bombs	500 #	Wings	4
HPAG	5"	Wings	6

on 6-Aero 14A Rocket Launchers

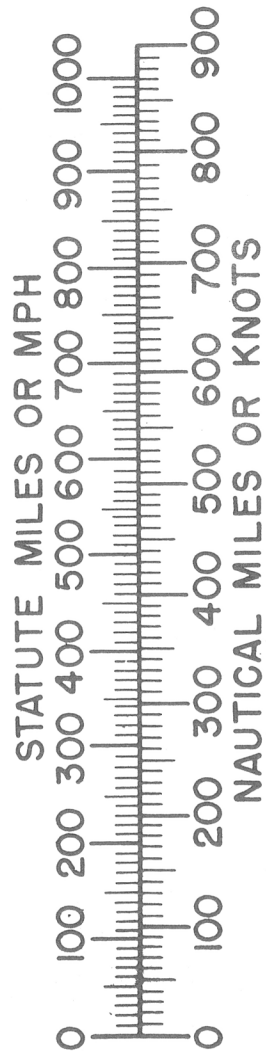
FIRE CONTROL

1 Bombsight, MK. 23-6 mounted on a MK. 41-3 Periscope  
1 Gun Sight, MK. 8-8

CAMERAS

Gun Camera.....AN-N6A  
Recon. Camera.....K-25A  
MAX. BOMB CAPACITY....3,700 #

## PERFORMANCE SUMMARY



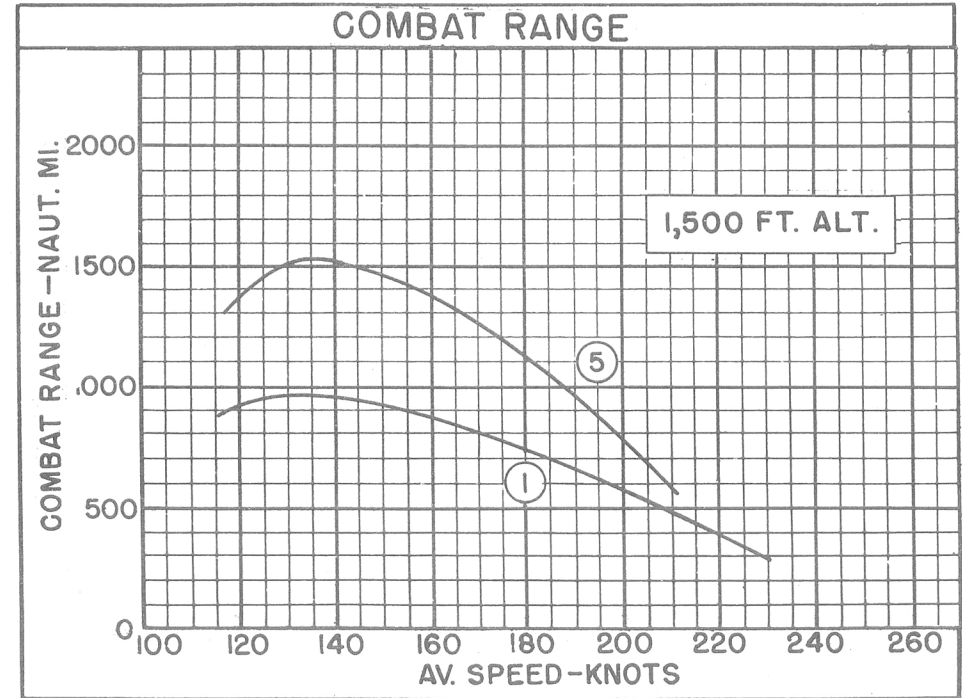
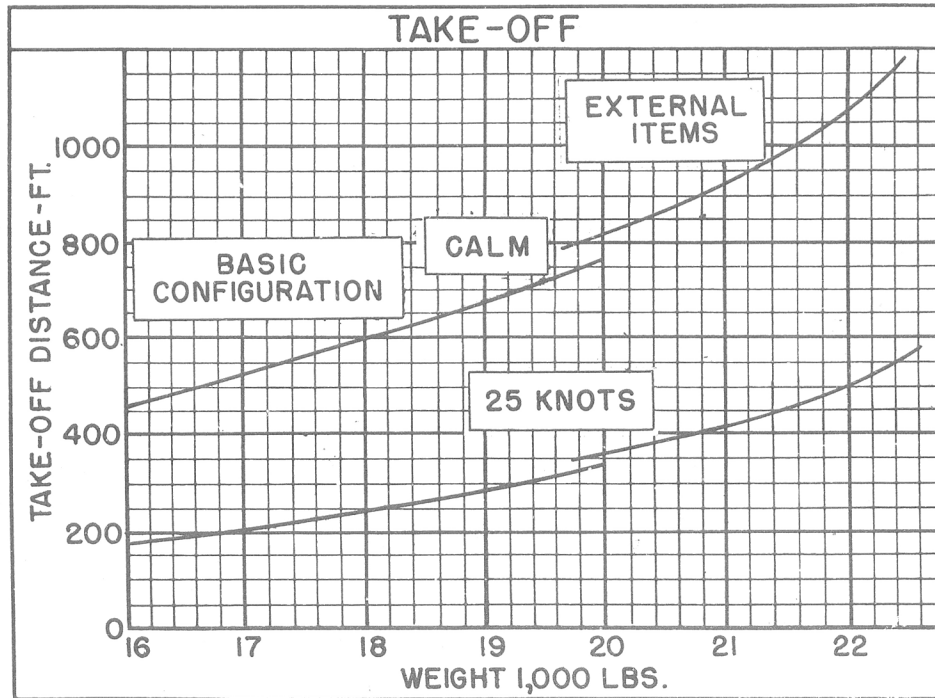
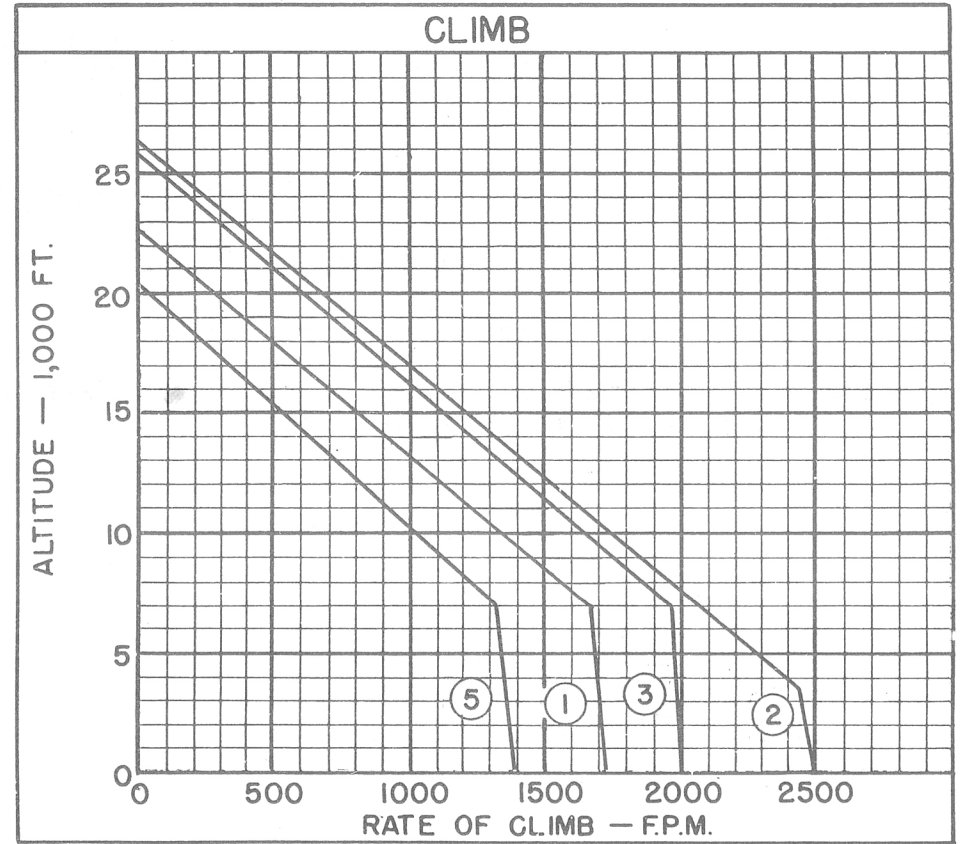
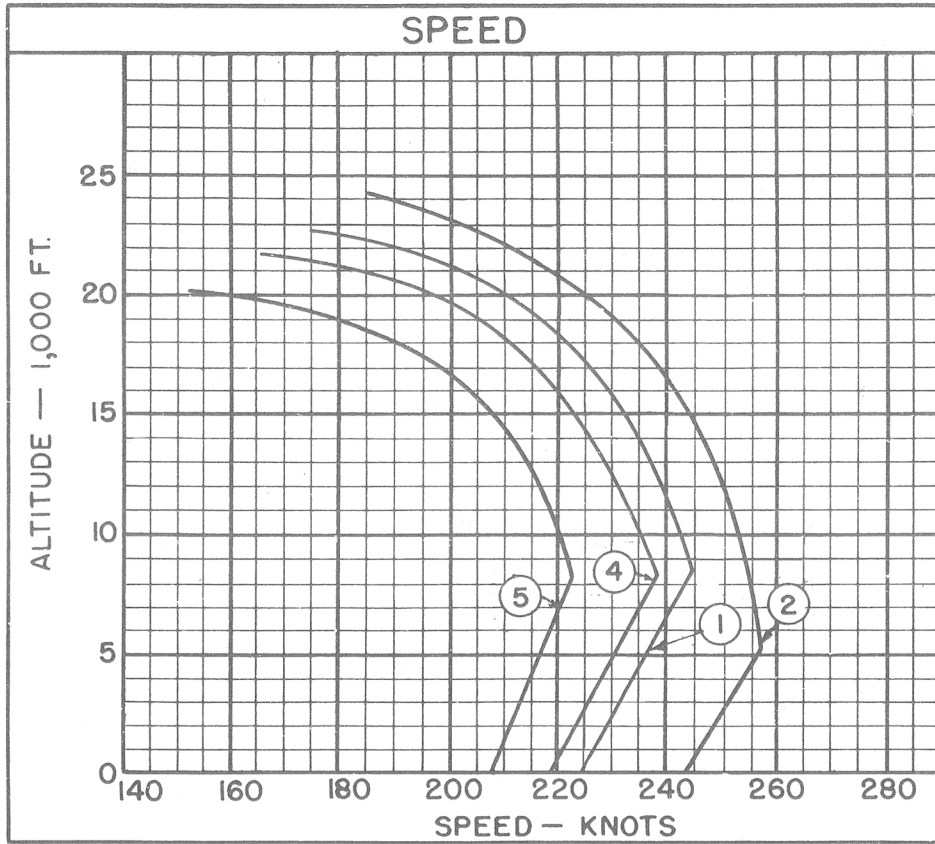
LOADING CONDITION	(1) ATTACK 1-MK. 41 Torp.	(4) ATTACK 1-MK. 41 Torp. 6 - 5" HPAG	(5) ATTACK 1-MK. 41 Torp. 6 - 5" HPAG 2-150 Gal. Tanks
TAKE-OFF WEIGHT lbs.	19,535	20,285	22,398
Fuel (Fixed/Drop) lbs.	2,520/-	2,520/-	2,520/1,800
Bombs lbs.	1,200	1,950	1,950
Wing/Power Loading (A) lbs/sq.ft; lbs/bhp.	35.6/10.3	37.0/10.7	40.8/11.8
Stall Speed--Power off kn.	72.5	74.7	80.6
Stall Speed--Power off - No Fuel kn.	67.6	70.0	72.5
Stall Speed--Power on kn.	67.6	69.6	74.8
Maximum Speed/Alt (B) kn/ft.	244/8,520	238/8,450	223/8,280
Take-off Distance, deck -- calm ft.	729	833	1,142
Take-off Distance, deck 25 kn. ft.	312	379	543
Take-off Distance, Airport ft.			
Rate of climb -- sea level (B) ft/min.	1,720	1,630	1,390
Service Ceiling (B) ft.	21,800	21,300	19,200
Time-to-climb 10,000 ft. (B) min.	6.1	6.5	7.7
Time-to-climb 20,000 ft. (B) min.	20.5	22.8	
Combat Range/V av 1,500 ft. n.mi/kn.	960/133	930/135	1,530/134
Combat Radius/V av 1,500 ft. n.mi/kn.	385/133	370/135	610/134
LOADING CONDITION	(2) COMBAT	(3) COMBAT	
GROSS WEIGHT lbs.	17,327	17,327	
Engine power	Military	Normal	
Fuel lbs.	1,512	1,512	
Bombs/Tanks			
Max. speed at sea level kn.	244	227	
Max. speed/Alt kn/ft.	257/5,180	251/8,600	
Combat speed/Alt kn/ft.	248/1,500	231/1,500	
Rate of climb SL ft/min.	2,490	2,010	
Ceiling for 500 fpm R/C ft.	21,500	21,000	
Time-to-climb/Alt. min/ft.			

### NOTES

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

Performance is based on calculations. Range and radius are based on engine specification fuel consumption data increased by 5%.

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All conditions include AN/AVQ-2 searchlight and AN/APS-31 radar.  
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○ LOADING CONDITION COLUMN NUMBER

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

[REDACTED]

# NOTES

GENERAL ASW PATROL PROBLEM NO. ASW-1

COMBAT RADIUS = 40% of combat range at 1,500 ft. altitude

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Spotting: 205 ft. length is required to spot 20 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on the CV-9 class carriers.