

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

STANDARD AIRCRAFT CHARACTERISTICS AF-2S "GUARDIAN"

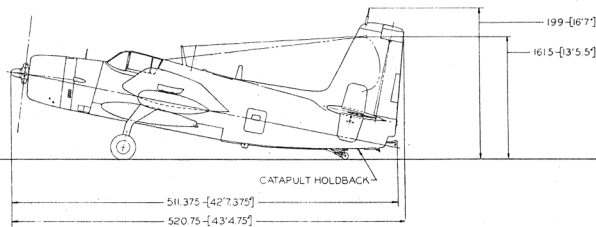
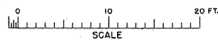
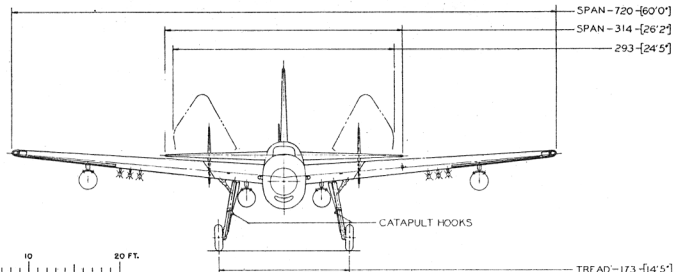
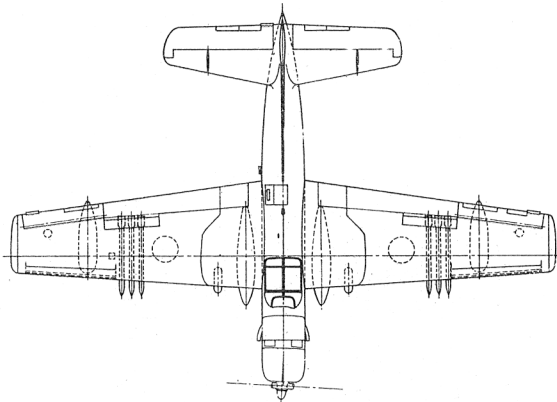
GRUMMAN

DECLASSIFIED
UPGRADED AT 3 YEAR INTERVALS:
DECLASSIFIED AFTER 12 YEARS.
DOB DIR 5200.10

SERVICE

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

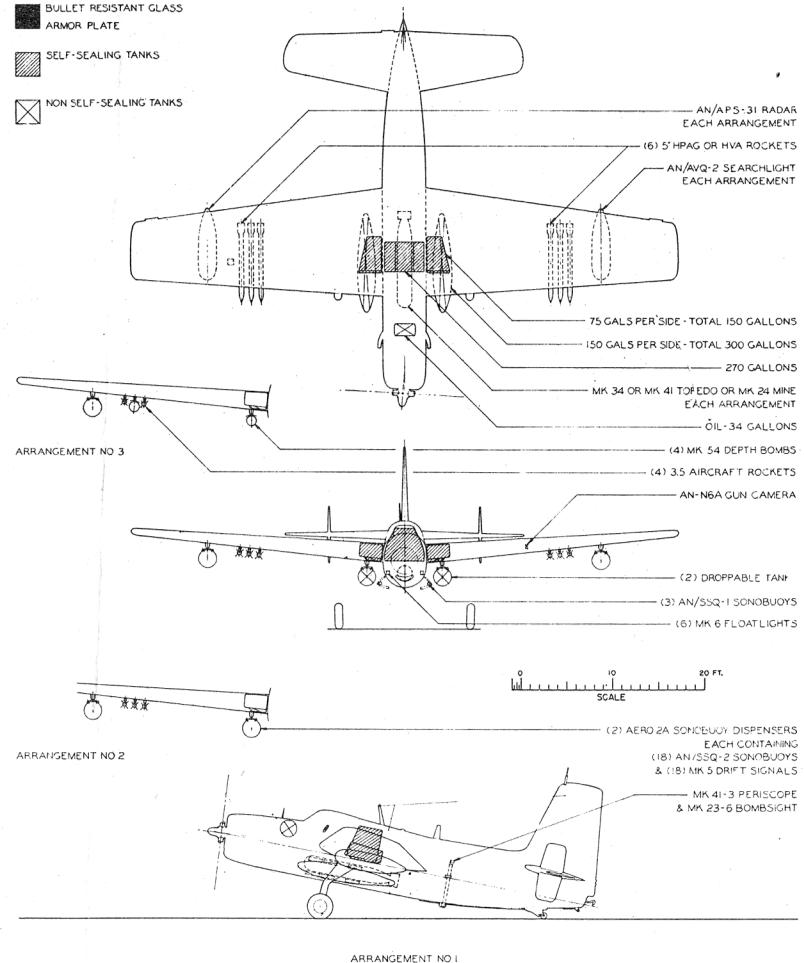
WING AREA—548.7
WING SECTION—
N.A.C.A. 23018-23012
M.A.C.—115.07
ASPECT RATIO—6.6



DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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



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

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-C	

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ORDNANCE			
BOMBS AND ROCKETS			
Type	Size	Location	No.
Torp.	Mk. 41	Bomb Bay	1
Torp.	Mk. 34	Bomb Bay	1
Torp.	Mk. 24	Bomb Bay	1
D.B.	Mk. 54	Wings	4
on 2 stub wing racks and 2 middle Aero 14A launchers (3.5" rockets only adjacent)			
HVAR	5"	Wings	6
on 6 - Aero 14A launchers			
Sono.			
Disp.	Aero 2A	Wings	2

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 #	

MISSION AND DESCRIPTION

The AF-2S airplane's primary mission is to attack enemy submarines after it has been directed to the submarine 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 and depth bombs 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' - 5"
HEIGHT.....	16' - 7"
TREAD.....	14' - 5"
M.A.C.....	9' - 7"
PROP. CLEAR.....	9"

WEIGHTS		
Loadings	Lbs.	L.F.
EMPTY.....	14,658.....	
BASIC.....	15,336.....	
DESIGN.....	19,200..5.0	
COMBAT.....	18,123..5.0	
MAX.T.O. (Field).....	23,015..4.2	
MAX.LAND.(Field).....	22,500.....	

All weights are actual.

*Maximum anticipated loading.

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..MIL-F-5572		

OIL	
CAPACITY (Gals.).....	32
GRADE.....	1100
SPEC.....	MIL-C-6082

ELECTRONICS	
VHF COMMAND.....	AN/ARC-1
UHF COMM.....	AN/ARC-27 or -27A (P.S.I., Repl. for AN/ARC-1)
MHF LIAISON.....	AN/ARC-2
INTERPHONE.....	AN/AIC-4 or -4A
HOMING.....	AN/ARR-2A
HOMING.....	AN/ARR-21 (P.S.I., Repl. for AN/ARR-2A)
RANGE RECEIVER....	R-23A/ARC-5
MARKER BEACON REC..	AN/ARN-12 (Planned Service Installation)
RADAR ALT.....	AN/AFN-1 or -22
Continued on NOTES sheet.	

SERVICE

PERFORMANCE SUMMARY						
TAKE-OFF LOADING CONDITION		(1) ATTACK 1-Mk. 34 Torp.	(3) ATTACK 1-Mk. 34 Torp. 3-Mk. 54 D.B. 4-3, 5" ASW Rock.	(4) ATTACK 1-Mk. 41-1 Torp. 6-5" HPAG Rock.	(5) ATTACK 1-Mk. 41-1 Torp. 6-5" HPAG Rock. 1-150 Gal. Tank	
TAKE-OFF WEIGHT	lb.	20,298	21,555	21,463	22,565	
Fuel (Fixed/Drop)	lb.	2,520/-	2,520/-	2,520/-	2,520/900	
Payload	lb.	1,167	2,424	2,332	2,332	
Wing loading	lb./sq.ft.	37.0	39.3	39.1	41.1	
Stall speed - power-off	kn.	76.9	79.2	79.0	81.0	
Take-off run at S.L. - calm	ft.	925	1,070	1,055	1,200	
Take-off run at S.L. 17.5kn. wind	ft.	545	640	630	730	
Take-off to clear 50 ft. - calm	ft.	---	---	---	---	
Max. speed/altitude (1)	kn./ft.	231/9,200	216/9,200	225/9,200	221/9,200	
Rate of climb at S.L. (1)	fpm	1,480	1,310	1,350	1,220	
Time: S.L. to 10,000 ft. (1)	min.	7.3	8.3	7.8	8.9	
Time: S.L. to 20,000 ft. (1)	min.	22.0	27.8	26.1	31.8	
Service ceiling (100 fpm) (1)	ft.	22,900	21,100	21,700	20,500	
Combat range	n.mi.	795	655	710	990	
Average cruising speed	kn.	144	146	147	148	
Cruising altitude(s)	ft.	1,500	1,500	1,500	1,500	
Combat radius	n.mi.	320	260	285	395	
Average cruising speed	kn.	144	146	147	148	
COMBAT LOADING CONDITION		(2) COMBAT				
COMBAT WEIGHT	lb.	18,123				
Engine power		Military				
Fuel	lb.	1,512				
Combat speed/combat altitude	kn./ft.	233/1,500				
Rate of climb/combat altitude	fpm/ft.	2,280/1,500				
Combat ceiling (500 fpm)	ft.	21,600				
Rate of climb at S.L.	fpm	2,300				
Max. speed at S.L.	kn.	230				
Max. speed/altitude	kn./ft.	239/4,000				
LANDING WEIGHT	lb.	16,862				
Fuel	lb.	249				
Stall speed - power-off	kn.	70.1				
Stall speed - with approach power	kn.	65.1				

NOTES

(1) Normal Power

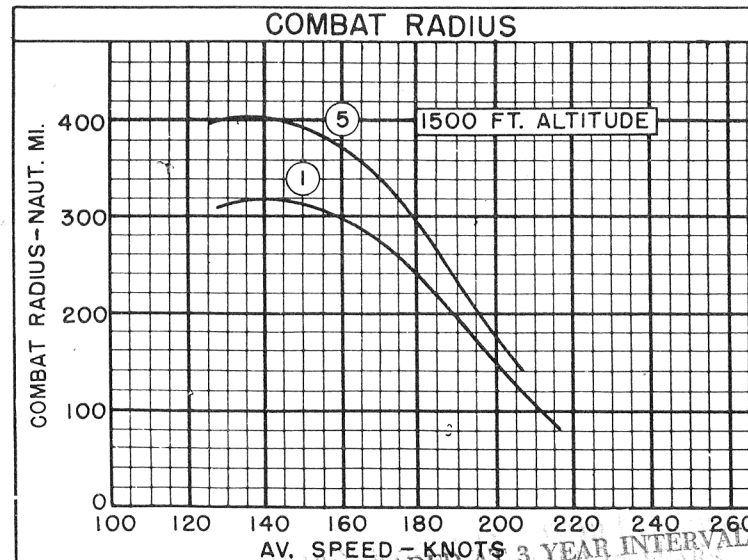
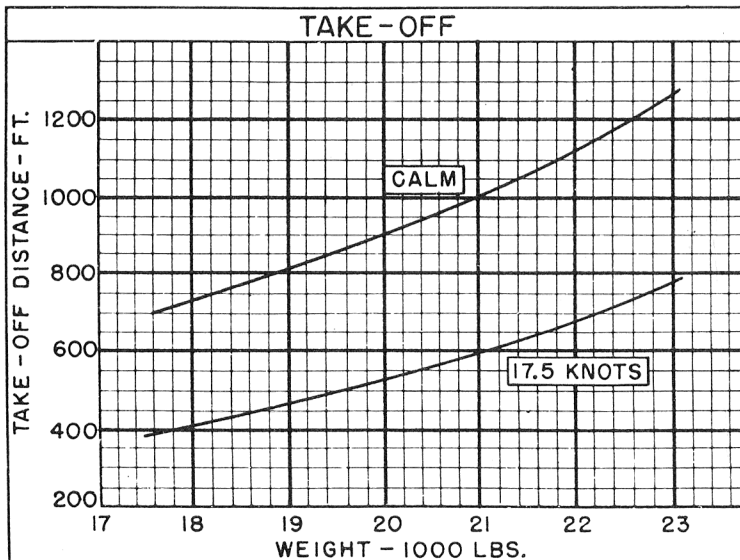
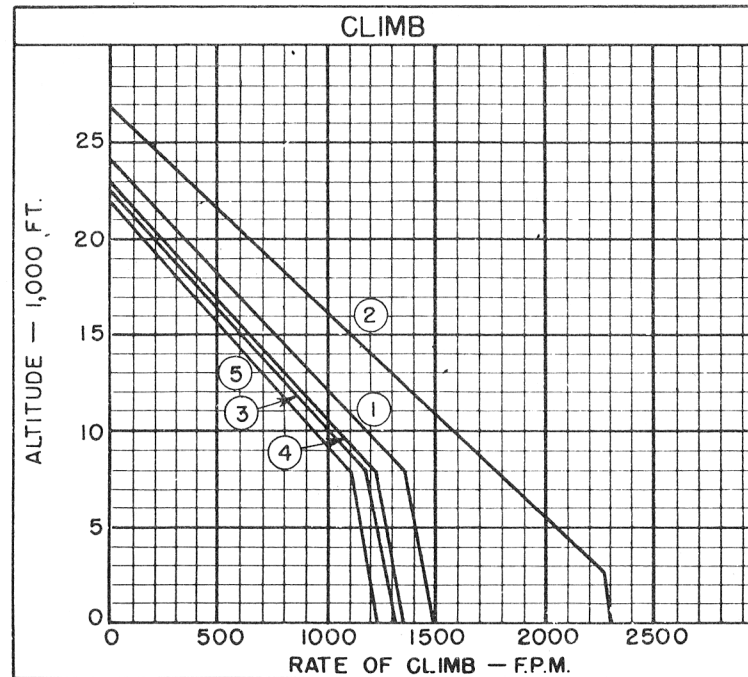
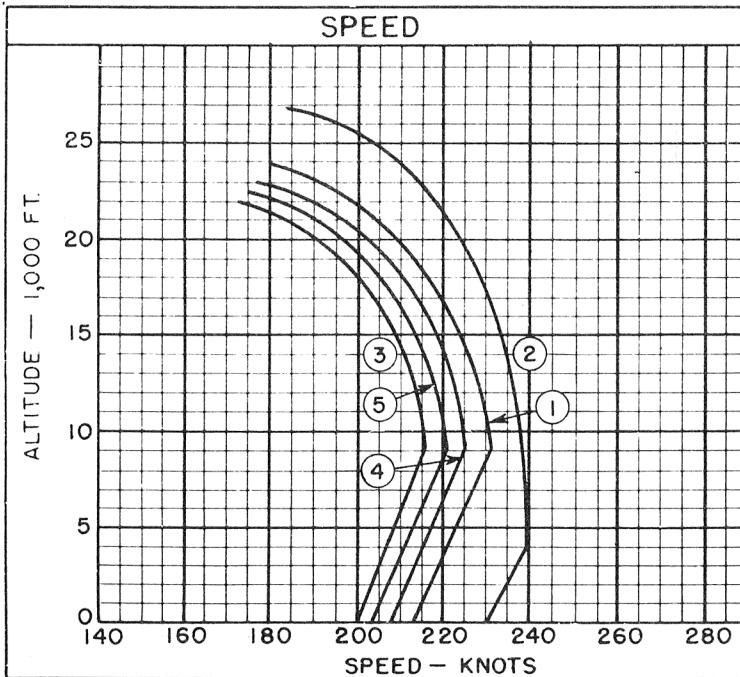
Performance is based on NATC flight test of the AF-2S airplane.

Range and radius are based on flight test fuel consumption data increased by 5%.

All conditions include AN/AVQ-2 searchlight on port wing and AN/APS-31 radome on starboard wing.

All climbs are made with rich mixture for satisfactory engine cooling.

III



Standard Aircraft Characteristics: NAVALP 1335E (REV. 2-50)

○ LOADING CONDITION COLUMN NUMBER

DOWNGRADED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

~~DECLASSIFIED~~
~~CONFIDENTIAL~~

SERVICE

NOTES

Spotting: 200 ft. length is required to spot 16 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on the CV-9 class carriers.

ASW RANGE AND RADIUS PROBLEM

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal power.

CLIMB: On course to 1,500 ft. at normal power.

COMBAT RANGE: Cruise at V for long range at 1,500 ft. External fuel tanks dropped when empty.

RESERVE: 20 minutes at V for long range plus 5% of initial fuel load.

COMBAT RADIUS = 40% OF COMBAT RANGE

ELECTRONICS (Continued)

SONOBUOY RECEIVER.....AN/ARR-31 or -26
RADAR.....AN/APS-31 or -31A
RADAR RELAY RECEIVER.....AN/ARR-27A
SEARCHLIGHT.....AN/AVQ-2A
IFF.....AN/APX-2 or -2A
16 SONOBUOYS IN AERO 2A DISPENSER.SSQ-2

IFF.....AN/APX-6
IFF (I-R UNIT).....AN/APX-17
(P.S.I., Repl. for AN/APX-2, -2A)
WIRE RECORDER.....13-A-3-j or IC/VRW-7
SWEEP INTEGRATOR KIT.....
(Planned Service Installation)

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This chart supersedes previously issued chart dated 1 October 1949.
Reason for reissue: NATC flight test data available.

Standard Aircraft Characteristics NAVAER 1333F (REV. 1-49)

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