



STANDARD AIRCRAFT CHARACTERISTICS
S2F-2
GRUMMAN

POWER PLANT

NO. & MODEL.....(2) E-1820-82
 MFR.....Wright
 SUPERCH.....1 stage, 1 speed
 RED. GEAR RATIO.....0.5625
 PROP. MFR.....Hamilton Std.
 PROP. BL. DES.NO...6915A7 (2)
 NO. BL./DIA.....3/11' -0"

RATINGS

	<u>BHP</u>	@ <u>RPM</u>	@ <u>ALT.</u>
T.O.	1,525	2,800	700
MIL.	1,425	2,700	2,400
NORM.	1,275	2,500	3,500

SPEC. NO. N867-A

ORDNANCEDROPPABLE STORES

<u>BOMB BAY</u>	<u>NO.</u>
MK. 90 Depth Bomb	1
MK. 34-1 Torpedo	1
MK. 43-1 Torpedo	1
MK. 54-1 Depth Bomb	1

WING STORES

Depth Bombs MK. 54-1	4
5" HVAR	
Aero EA Rocket Package	6

ENGINE NACELLE

AN/SSQ-2 Sonobuoys	16
AN/ESQ-1 Sonobuoys	4

FUSELAGE

Aero 1A Retro Ejector with 20 MK. 7 Marine Markers	1
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FIRE CONTROL

Fixed Ring Rocket Sight

MISSION AND DESCRIPTION

The S2F-2 is a twin engine ASW airplane whose mission is to search for, detect and destroy enemy submarines. The airplane has accommodations for a crew of four; pilot, copilot, MAD equipment operator and a radar operator. It is possible for the crew members to interchange positions in flight as well as service the electronic equipment.

The airplane is capable of operating from CVE-105 and larger class carriers or land bases.

The wing is fitted with single slotted flaps. Lateral control is provided by circular arc spoilers in conjunction with ailerons. Directional and longitudinal control are provided by conventional elevators and rudders. Directional control for single engine operation is augmented by means of a power actuated surface located between the fin and the rudder surfaces. The same surface, actuated electrically, is used as a directional trimming device. Lateral and longitudinal trim are accomplished by conventional trim tabs.

DEVELOPMENT

First flight.....May 1954
 Service use.....February 1955

DIMENSIONS

<u>WING</u>	
AREA.....	485 sq.ft.
SPAN.....	69' -8"
M.A.C.....	7' -5"
LENGTH.....	42' -0"
HEIGHT.....	16' -4"
TREAD.....	18' -6"
PROP. GRD. CLEARANCE..	1' -0"

DECLASSIFIED**WEIGHTS**

<u>LOADINGS</u>	<u>LBS</u>	<u>L.F.</u>
EMPTY.....	17,586.....	
BASIC.....	17,923.....	
DESIGN.....	23,031...3.0.	
MAX.T.O. (Field).....	26,173.....	
(Cat.).....	26,173.....	
MAX.LAND (Field).....	25,300.....	
(Arrest).....	19,185.....	

All weights are actual.

*Max. anticipated loading.

FUEL AND OIL

<u>No. tanks</u>	<u>Tot. Gal.</u>	<u>Location</u>
2	400	Wing

FUEL GRADE.....115/145
 FUEL SPEC...MIL-F-5572

OIL

CAPACITY (Gals).....25.2
 GRADE.....1100
 SPEC.....MIL-O-6082

ELECTRONICS

HF TRANS-RECEIVER.....	ARC-27A
HF TRANS-RECEIVER.....	ARC-2A
NAV. TRANS-RECEIVER.....	ARN-21
ICS.....	AIC-8
MARKER.....	ARN-8
RANGE RECEIVER.....	R-23/ARC-5
ADF.....	ARN-6
IFT.....	APX-6
ECM HOMING.....	APA-69A
ECM RECEIVER.....	APR-9B
SONO RECEIVER.....	ARR-26
RADAR.....	APS-38A
ALTIMETER.....	APN-22
MAD.....	ASQ-8
VOR RECEIVER.....	ARN-30A
UHF DF.....	ARA-25

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		(1) MK-90 Depth Bomb	(3) MK-90 Depth Bomb 6-5 HVAR		
TAKE-OFF WEIGHT	lb.	24,387	25,333		
Fuel	lb.	2,400	2,400		
Payload	lb.	2,650	3,490		
Wing loading	lb./sq.ft.	50.2	52.3		
Stall speed - power-off	kn.	83.0	90.3		
Take-off run at S.L. - calm	ft.	750	940		
Take-off run at S.L. 17.5kn. wind	ft.	450	580		
Take-off to clear 50 ft. - calm	ft.	--	--		
Max. speed/altitude (A)	kn./ft.	229/3,500	221/3,500		
Rate of climb at S.L. (A)	fpm	1,580	1,470		
Time: S.L. to 10,000 ft. (A)	min.	6.6	7.6		
Time: S.L. to 20,000 ft. (A)	min.	23.6	28.4		
Service ceiling (100 fpm) (A)	ft.	21,200	20,700		
Combat range	n.mi.	550	495		
Average cruising speed	kn.	130	130		
Cruising altitude(s)	ft.	1,500	1,500		
Combat radius	n.mi.	220	200		
Average cruising speed	kn.	130	130		
Combat endurance	hrs.	4.2	3.8		
Average cruising speed	kn.	130	130		
COMBAT LOADING CONDITION		(2)			
COMBAT WEIGHT	lb.	20,777			
Engine power		Military			
Fuel	lb.	1,440			
Combat speed/combat altitude	kn./ft.	233/S.L.			
Rate of climb/combat altitude	fpm/ft.	2,480/S.L.			
Combat ceiling (500 fpm)	ft.	20,350			
Rate of climb at S.L.	fpm	2,480			
Max. speed at S.L.	kn.	233			
Max. speed/altitude	kn./ft.	239/2,400			
LANDING WEIGHT	lb.	22,227	23,173		
Fuel	lb.	240	240		
Stall speed - power-off	kn.	79.3	86.4		
Stall speed - with approach power	kn.	67.2	70.2		

(A) Normal rated power.

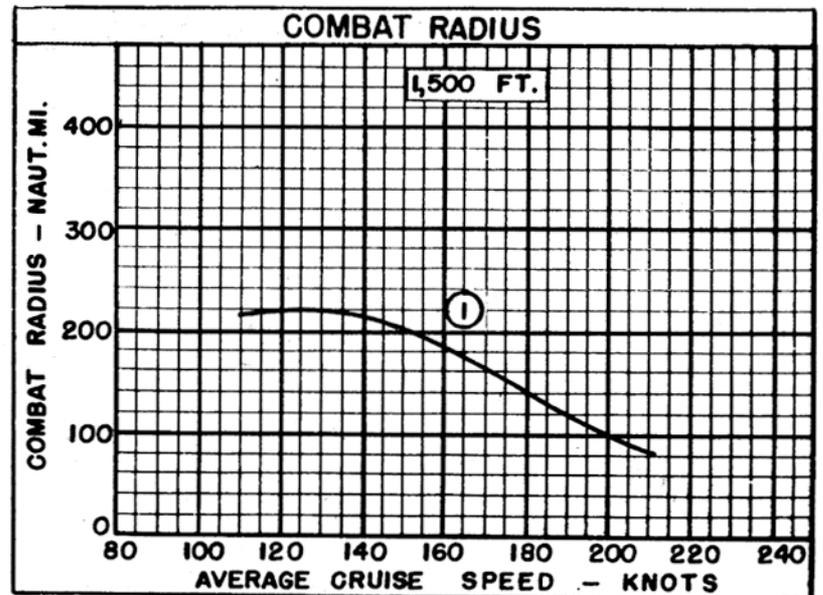
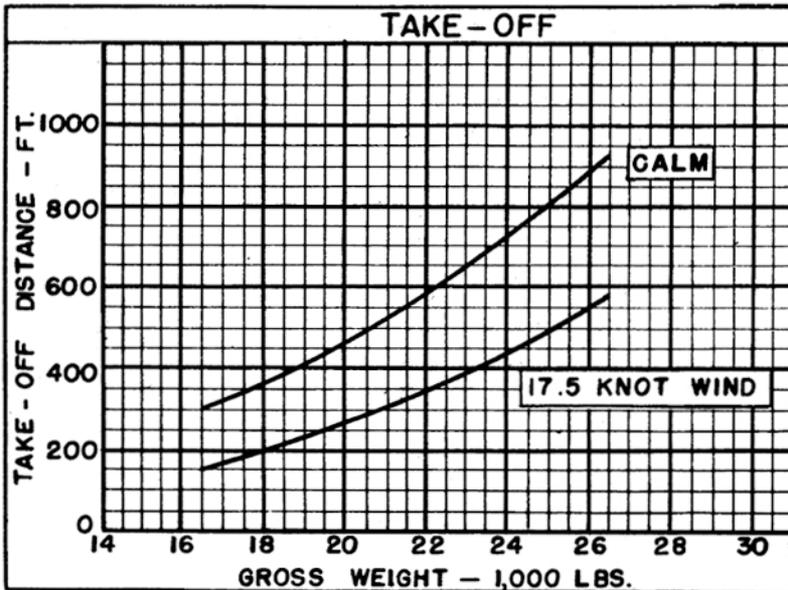
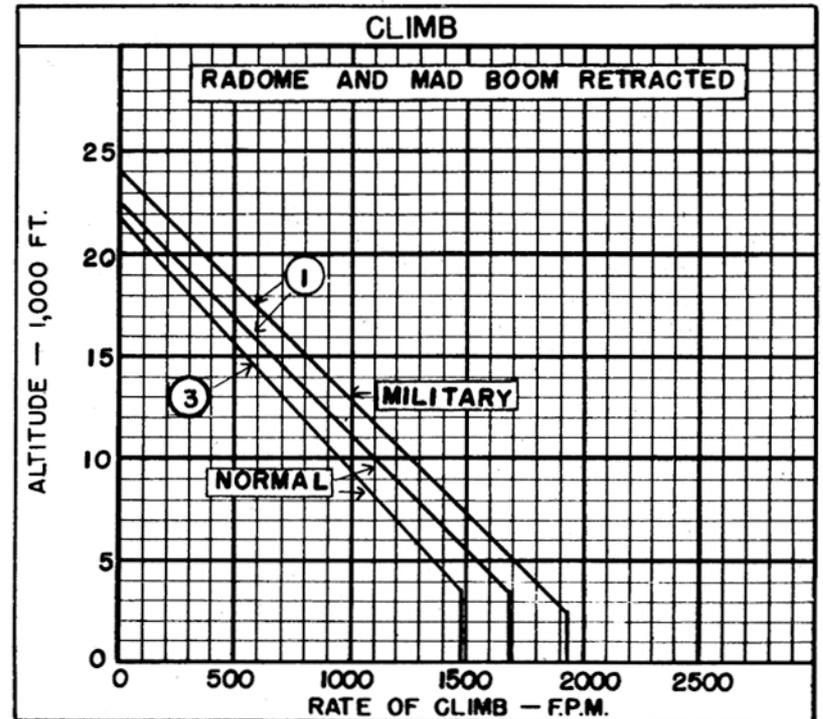
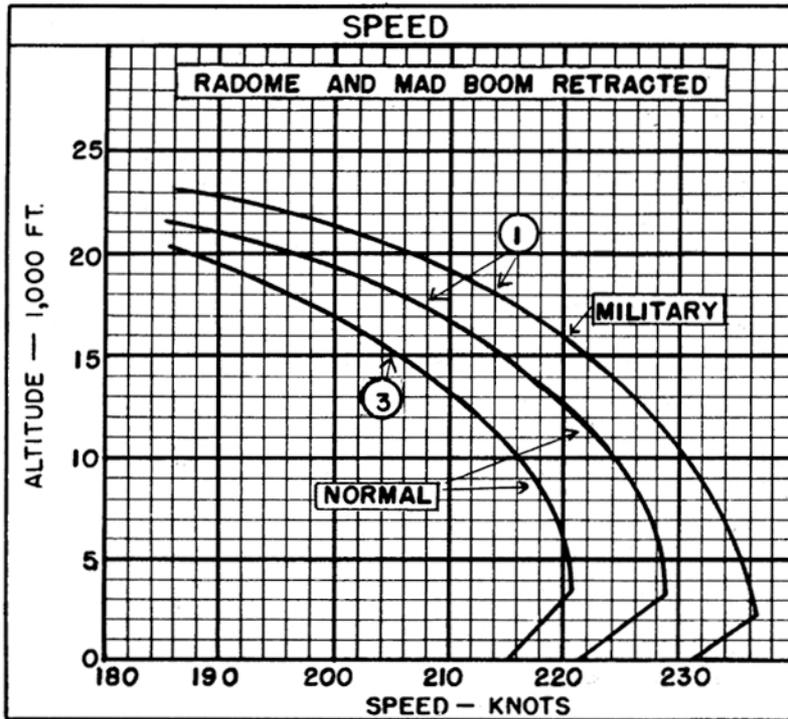
NOTES

All performance data shown are for configuration with radome and MAD boom retracted. Max. speed is decreased approx. 10 knots when radome and MAD gear are extended.

Performance based on calculations.

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

SPOTTING: A total of 76 airplanes can be accommodated in a landing spot on the flight and hanger decks of a CVA-19 class canted deck carrier.



○ LOADING CONDITION COLUMN NUMBER

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

NOTES

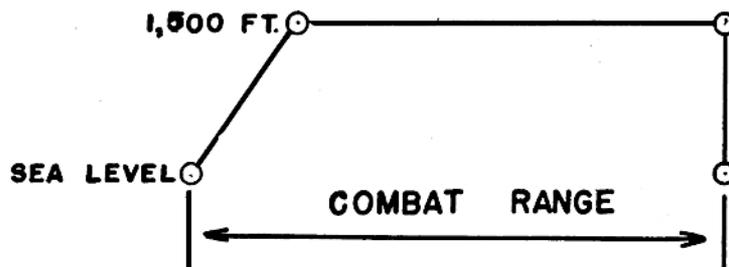
COMBAT RANGE PROBLEM - ASW FIXED WING (RECIPROCATING)

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

CLIMB: To 1,500 ft. at normal rated power (radome and mad boom retracted).

CRUISE: At speed for best range at 1,500 ft. (radome and mad boom extended).

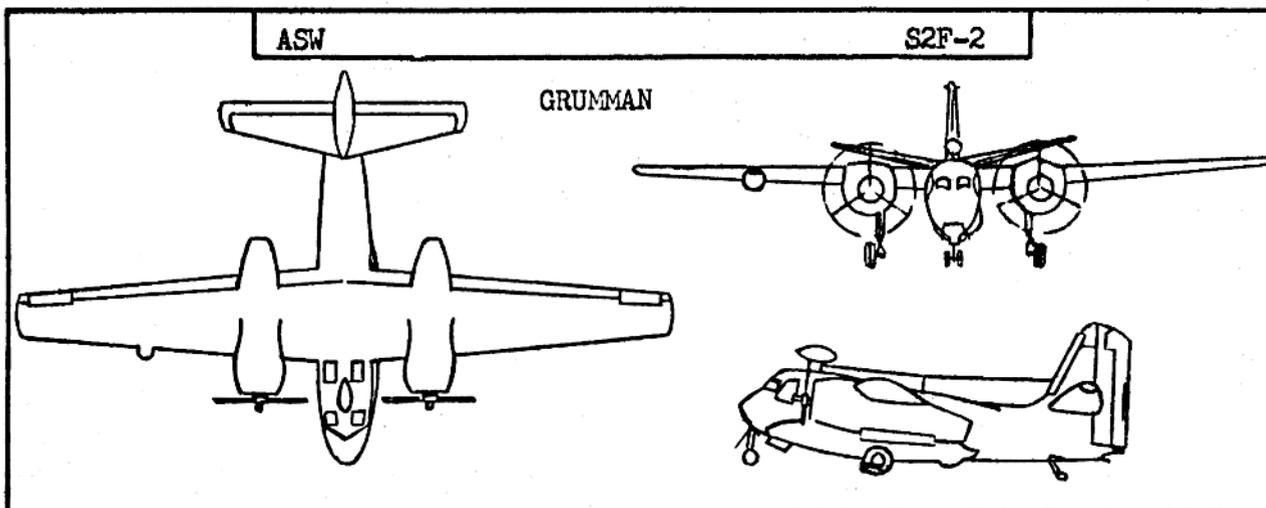
RESERVE: Fuel for 20 minutes at speed for best range at sea level plus 5% of initial fuel.



COMBAT RADIUS IS 40 PERCENT OF COMBAT RANGE AT 1,500 FEET ALTITUDE

○ LOADING CONDITION COLUMN NUMBER

CHARACTERISTICS SUMMARY



ASW

S2F-2

GRUMMAN

WING AREA 485 Sq. ft.
WING SPAN 69' - 8"

LENGTH 42' - 0"
HEIGHT 16' - 4"

AVAILABILITY			PROCUREMENT			
NUMBER AVAILABLE			NUMBER DELIVERED			
			IN FISCAL YEARS			
ACTIVE	RESERVE	TOTAL				

STATUS

First Flight - - - - - May 1954
Service Use - - - - - February 1955

ENGINES			
2 WAC	R-1820-82		
	<u>BHP</u>	<u>RPM</u>	<u>ALT.</u>
T.O.	1,525	2,800	700
MIL.	1,425	2,700	2,400
NORM.	1,275	2,500	3,500

FEATURES
Crew - 4
Slotted Flaps
Folding wings
Catapulting provisions
Arresting gear
Search radar equipment

ARMAMENT	
Basic Mission:	
1-Mk-90 Bomb	
Other: Bomb Bay	
1-Mk-34-1 Torpedo	
1-Mk-43-1 Torpedo	

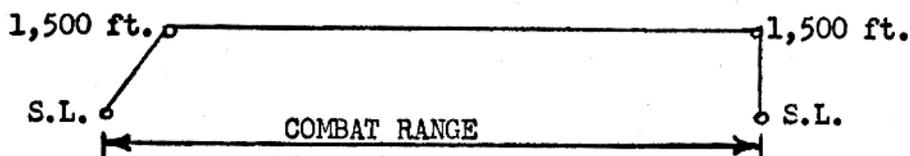
<u>WING</u>	
6-5" HVAR	
<u>ENGINE NACELLE</u>	
16 AN/SSQ-2 Sonobuoys	
4 AN/SSQ-1 Sonobuoys	

NAVAER 1519 A (REV. 1-49)

CHARACTERISTICS SUMMARY

BASIC MISSION

S2F-2



PERFORMANCE

COMBAT RADIUS	COMBAT RANGE	SPEED
300 naut. mi. 130 knots avg. *5.74 hours	745 naut. mi. 130 knots avg.	221 knots at S.L. ft. 228 knots at 3,100 ft.
*Mission time Bomb aboard	Bomb aboard	knots at ft. Radome & MAD Boom Ext. Combat Weight Military Power
CLIMB	CEILING	TAKE OFF
1,570 ft./min. Sea Level, T. O. wt. Normal Power	21,000 ft. 100 ft./min., T. O. wt. Normal Power	1,070 ft. - calm No assist
1,680 ft./min. 5,000 ft. Combat wt. Military Power	15,950 ft. 500 ft./min., Combat wt. Military Power	620 ft. 17.5 knot wind No assist
LOAD	WEIGHTS	STALLING SPEED
Fuel 520 gal. fixed 520 drop -	Empty 17,640 lbs. Combat 23,897 lbs. Take-off 25,145 lbs.	82 knots Flaps down, T. O. wt.
		TIME TO CLIMB 10,000 ft. in 7.5 min. Take-Off Wt., Norm. Power

NOTES

Performance Basis: Contractor's and NATC Flight Test.
Range and Radius are based on flight test fuel consumption data increased by 5%.