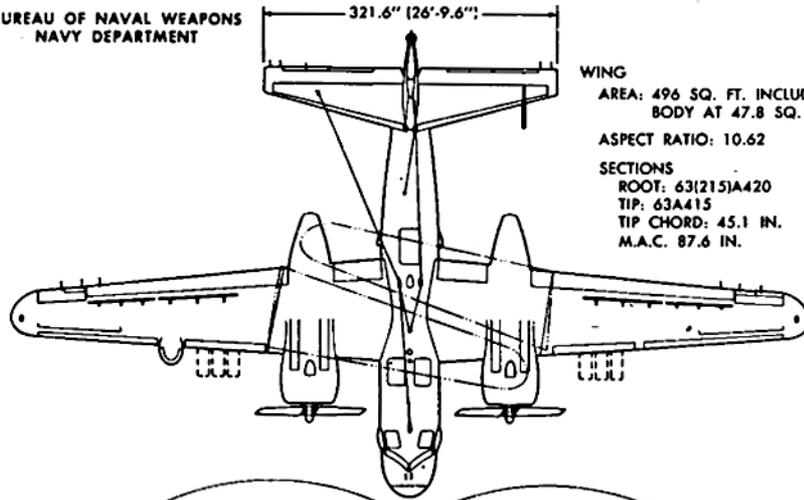


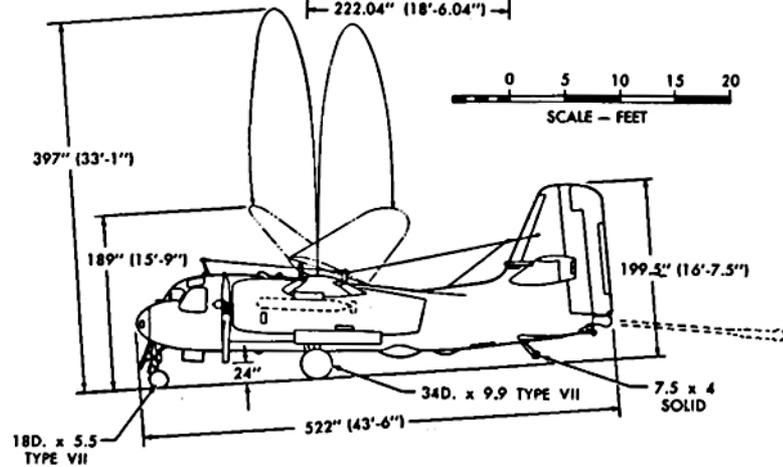
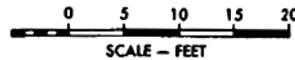
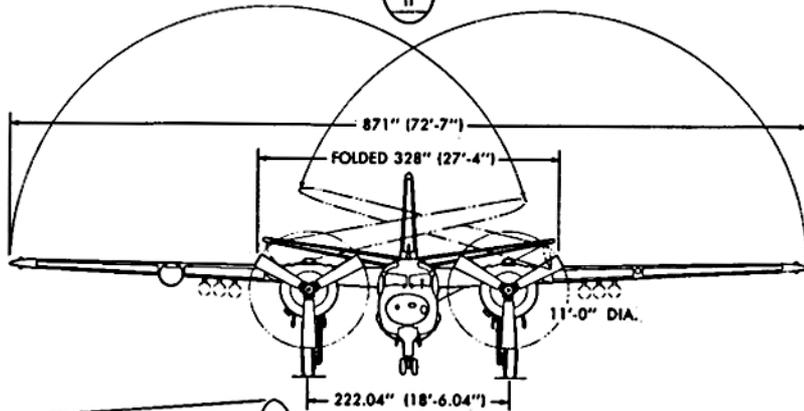
STANDARD AIRCRAFT CHARACTERISTICS

S-2D/E TRACKER

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT

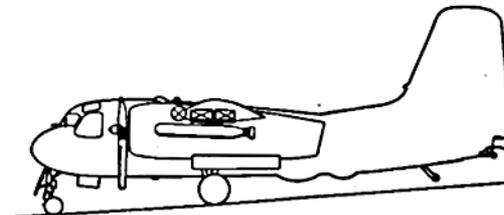
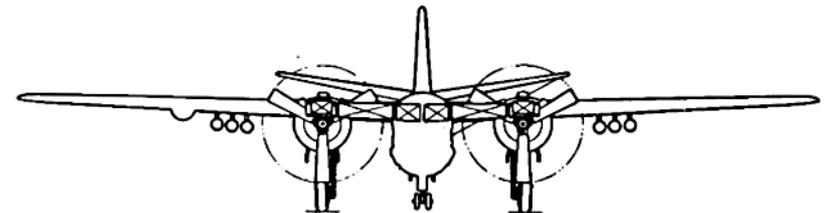
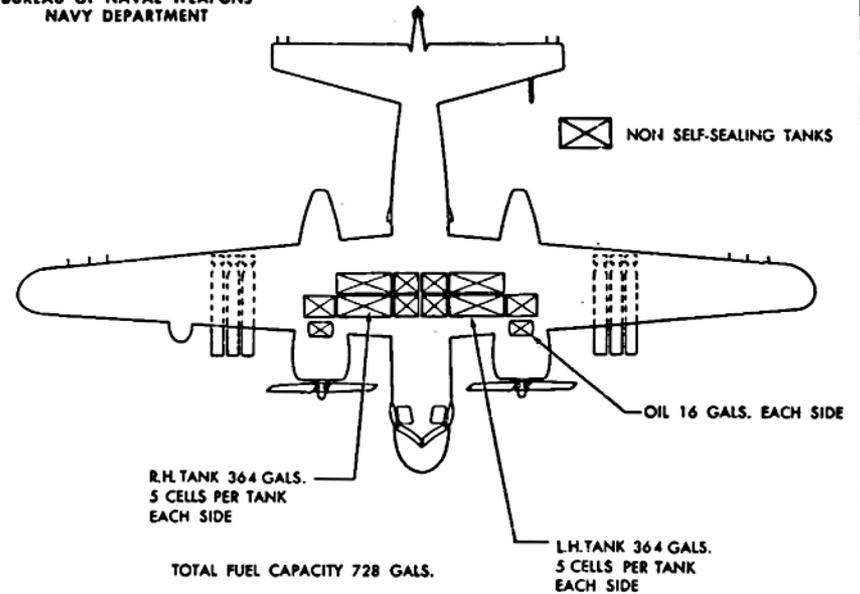


WING
AREA: 496 SQ. FT. INCLUDING
BODY AT 47.8 SQ. FT.
ASPECT RATIO: 10.62
SECTIONS
ROOT: 63(215)A420
TIP: 63A415
TIP CHORD: 45.1 IN.
M.A.C. 87.6 IN.



DESCRIPTIVE ARRANGEMENT

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT



ARMAMENT AND TANKAGE

POWER PLANT	MISSION AND DESCRIPTION	WEIGHTS																																																							
<p>No. & Model _____ (2) R-1820-82A Manufacturer _____ Curtiss-Wright Supercharger _____ 1 Stage, 1 Speed Reduction Gear Ratio _____ 0.5625 : 1 Prop. Manufacturer _____ Hamilton Standard Blade Design No. _____ 6985B-7 No. of Blades/Dia. _____ 3/11 ft. 0 in.</p> <p style="text-align: center;">RATINGS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>BHP</u></th> <th style="text-align: center;"><u>RPM</u></th> <th style="text-align: center;"><u>ALT</u></th> </tr> </thead> <tbody> <tr> <td>Take-Off</td> <td style="text-align: center;">1525</td> <td style="text-align: center;">2800</td> <td style="text-align: center;">700</td> </tr> <tr> <td>Military</td> <td style="text-align: center;">1425</td> <td style="text-align: center;">2700</td> <td style="text-align: center;">2400</td> </tr> <tr> <td>Normal</td> <td style="text-align: center;">1275</td> <td style="text-align: center;">2500</td> <td style="text-align: center;">3500</td> </tr> </tbody> </table> <p>Spec. No. _____ N867-C</p>		<u>BHP</u>	<u>RPM</u>	<u>ALT</u>	Take-Off	1525	2800	700	Military	1425	2700	2400	Normal	1275	2500	3500	<p style="text-align: center;">MISSION AND DESCRIPTION</p> <p>The S-2D and S-2E are ASW aircraft capable of finding and destroying enemy submarines. Search and detection are accomplished with a wide array of electronic devices including radar, a navigation computer, ECM homing, underwater sound, MAD, and nuclei detector equipment. A wing-mounted searchlight provides night target illumination. Armament for submarine destruction includes nuclear and conventional depth charges, rockets and homing torpedoes. Both aircraft are capable of photographic surveillance and around-the-clock, all-weather operation from aircraft carriers (CV-34 class and larger) and land bases.</p> <p>The S-2D and S-2E are twin-engine aircraft carrying a crew of four. These aircraft are of a high wing design incorporating leading edge slots and trailing edge slotted flaps. The manual control system uses ailerons and spoilers for lateral control and conventional elevators and rudder for longitudinal and directional control. A hydraulically powered rudder trimmer is used for additional directional control during single-engine, low-speed operations. An autopilot provides automatic control about all three axes.</p> <p>The S-2D and S-2E are identical externally; they differ only in the electronic gear carried internally. The S-2E incorporates a coordinated tactical navigation system that features memory, display and automatic computations for the solution of tactical and navigational problems. These functions are accomplished separately and, in many cases, manually in the S-2D.</p> <p style="text-align: center;">DEVELOPMENT</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>S-2D</u></th> <th style="text-align: center;"><u>S-2E</u></th> </tr> </thead> <tbody> <tr> <td>First Flight _____</td> <td style="text-align: center;">May 1959</td> <td style="text-align: center;">September 1960</td> </tr> <tr> <td>Service Use _____</td> <td style="text-align: center;">May 1961</td> <td style="text-align: center;">September 1962</td> </tr> </tbody> </table>		<u>S-2D</u>	<u>S-2E</u>	First Flight _____	May 1959	September 1960	Service Use _____	May 1961	September 1962	<p style="text-align: center;">WEIGHTS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><u>LOADINGS</u></th> <th style="text-align: center;"><u>LBS.</u></th> <th style="text-align: center;"><u>L. F.</u></th> </tr> </thead> <tbody> <tr> <td>Empty S-2D/S-2E</td> <td style="text-align: center;">18,726/18,820</td> <td></td> </tr> <tr> <td>Basic S-2D/S-2E</td> <td style="text-align: center;">19,202/19,296</td> <td></td> </tr> <tr> <td>Design</td> <td style="text-align: center;">26,250</td> <td style="text-align: center;">3.0</td> </tr> <tr> <td>Max. Take-Off</td> <td></td> <td></td> </tr> <tr> <td> Field</td> <td style="text-align: center;">29,150</td> <td></td> </tr> <tr> <td> Catapult</td> <td style="text-align: center;">29,150</td> <td></td> </tr> <tr> <td>Max. Landing</td> <td></td> <td></td> </tr> <tr> <td> Field</td> <td style="text-align: center;">24,800</td> <td></td> </tr> <tr> <td> Arrested</td> <td style="text-align: center;">24,150</td> <td></td> </tr> </tbody> </table> <p>Empty weights are based on Weight & Balance Report 3658R for S-2D. The S-2D is 94 pounds lighter.</p>	<u>LOADINGS</u>	<u>LBS.</u>	<u>L. F.</u>	Empty S-2D/S-2E	18,726/18,820		Basic S-2D/S-2E	19,202/19,296		Design	26,250	3.0	Max. Take-Off			Field	29,150		Catapult	29,150		Max. Landing			Field	24,800		Arrested	24,150	
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<p style="text-align: center;">ELECTRONICS</p> <p><u>S-2D & S-2E</u></p> <p>UHF Trans-Receiver _____ ARC-52 ICS _____ AIC-14 LF-ADF _____ ARN-59 UHF-DF _____ ARA-25A Marker _____ ARN-32 IFF _____ APX-6B IFF Coder _____ APA-89 Altimeter _____ APN-117 Radar _____ APS-88A Sonobuoy Receiver _____ ARR-52 MAD _____ ASQ-10 Nuclei Detector _____ ASR-3 Recorder Group _____ ASA-26A Tape Recorder _____ UNH-6</p> <p><u>S-2D</u></p> <p>Julie Target Computer _____ ASA-31 Navigation Computer _____ ASA-13A Plotting Board _____ ASA-13 Indicator Group _____ AQA-3A ECM Direction Finder _____ ALD-2 Doppler Radar _____ APN-122 TACAN _____ ARN-21A HF Trans-Receiver _____ ARC-39</p> <p><u>S-2E</u></p> <p>Navigation Display _____ ASN-30 Indicator Group _____ AQA-4 ECM Direction Finder _____ ALD-2B Doppler Radar _____ APN-153 TACAN _____ ARN-52 HF Trans-Receiver _____ ARC-94</p>	<p style="text-align: center;">DIMENSIONS</p> <p>Wing Area _____ 496 sq. ft. Span _____ 72 ft. 7 in. MAC _____ 7 ft. 4 in. Length _____ 43 ft. 6 in. Height _____ 16 ft. 7.5 in. Tread _____ 18 ft. 6.04 in.</p>	<p style="text-align: center;">FUEL AND OIL</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><u>No. TANKS</u></th> <th style="text-align: center;"><u>GALS.</u></th> <th style="text-align: center;"><u>LOCATION</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">728</td> <td style="text-align: center;">wing</td> </tr> </tbody> </table> <p>Fuel Grade _____ 115/145 Fuel Spec. _____ Mil-G-5572</p> <p style="text-align: center;">OIL</p> <p>Capacity (gals.) _____ 32.0 Grade _____ 1100/120W Spec. (appl.) _____ Mil-L-6082/Mil-L-22851</p> <p style="text-align: center;">ORDNANCE</p> <p>Torpedoes: MK 34, MK 43 Mod-1, MK 44 Mod-0, MK 46 Mod-0, MK 46 Mod-1.</p> <p>Bombs: MK 54 Mod-2 Depth Bomb; MK 57 and MK 101 Mod-0 Special Store; MK 76 Mod-4, -5, and MK 106 Mod-2, -3 Practice Bomb; BDU-11E Training Shape.</p> <p>Rockets: 5 in. HVAR; Aero 7D, Aero 6A-1, Aero 6A-2, LAU-3A/A, LAU-32A/A, LAU-10/A Rocket Packs.</p> <p>Sonobuoys: AN/SSQ-2B, -2D, -23, -26, -28.</p> <p>Underwater Sound Signals: MK 57 Mod-0, MK 61 Mod-0, MK 64 Mod-0, MK 15, MK 50</p> <p>Marine Markers: MK 58 Mod-0, MK 25 Mod-0</p> <p>Float Lights: MK 6 Mod-3, X1-3A</p> <p>Photo Pod: Night ASW Photo Pod Mine: MK 52</p> <p>Flares: MK 5 Mod-7, -10; MK 6 Mod-4, -5, -6; MK 24 Mod-2A/3</p>	<u>No. TANKS</u>	<u>GALS.</u>	<u>LOCATION</u>	2	728	wing																																																	
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PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		① ASW LONG RANGE (1) Mk 101 Depth Bomb	③ ASW MAX. ARMAMENT (1) Mk 101 Depth Bomb (4) Mk 46 Torpedo (2) 5 HVAR	⑤ ASW SEARCH (2) Mk 44 Torpedo (4) Mk 43 Torpedo	⑦ ASW SEARCH (6) Mk 46 Torpedo	⑨ FERRY
TAKE-OFF WEIGHT	(A) lb.	26,664	29,734 (B)	27,541	29,217	24,828
Fuel	lb.	4368	4368	4368	4368	4368
Payload	lb.	2016	4906	2755	4431	0
Wing loading	lb./sq. ft.	53.6	59.8	55.4	58.8	49.9
Stall speed—power-off	kn.	81	86	82	85	78
Take-off run at S.L.— calm	ft.	1580	2020	1690	1940	1410
Take-off run at S.L.— 25 kn. wind	ft.	870	1150	940	1100	780
Take-off to clear 50 ft.— calm	ft.	2280	2810	2410	2730	2080
Max. speed/altitude	(C) kn./ft.	210/5000 (D)	188/5000 (D)	197/5000 (D)	191/5000 (D)	222/5000
Rate of climb at S.L.	(C) fpm.	1390	980	1240	1040	1580
Time: S.L. to 10,000 ft.	(C) min.	8.3	12.8	9.8	12.0	7.2
Time: S.L. to service ceiling	(C) min.	38.0	37.1	37.3	37.1	37.2
Service ceiling (100 fpm)	(C) ft.	20,100	15,400	18,100	16,000	21,700
Combat range	(F) n.mi.	1000	780	880	800	1130
Average cruising speed	kn.	130	130	130	130	144
Cruising altitude(s)	ft.	1500	1500	1500	1500	5000
Combat radius/mission time	n.mi./hr.	400/7.7	312/6.0	352/6.8	320/6.1	-
Average cruising speed	kn.	130	130	130	130	-
COMBAT LOADING CONDITION		② 60% FUEL STORES RETAINED	④ 60% FUEL STORES RETAINED	⑥ 60% FUEL STORES RETAINED	⑧ 60% FUEL STORES RETAINED	
COMBAT WEIGHT	lb.	24,917	27,987	25,794	27,470	-
Engine power		MILITARY	MILITARY	MILITARY	MILITARY	-
Fuel	lb.	2621	2621	2621	2621	-
Combat speed/combat altitude	(D) kn./ft.	213/1500	193/1500	201/1500	195/1500	-
Rate of climb/combat altitude	fpm/ft.	1810/1500	1340/1500	1620/1500	1400/1500	-
Combat ceiling (500 fpm)	ft.	18,300	13,300	16,200	14,000	-
Rate of climb at S.L.	fpm.	1830	1360	1640	1420	-
Max. speed at S.L.	(D) kn.	210	191	198	193	-
Max. speed/altitude	(D) kn./ft.	218/4000	198/4000	206/4000	200/4000	-
LANDING WEIGHT						
Fuel	lb.	437	437	437	437	437
Stall speed—power-off/approach power	kn./kn.	75/67	80/71	76/68	79/70	72/64
Landing distance—ground roll/over 50 ft. obst.	ft./ft.	1750/2460	1940/2650	1800/2510	1900/2610	1670/2380

(A) Weights are shown for the S-2E aircraft. The S-2D is 94 pounds lighter.

(B) Exceeds the maximum take-off weight of 29,150 pounds.

(C) Normal Rated Power.

PERFORMANCE BASIS: Calculated data based on Flight Test of the S-2A and S-2D aircraft.

SPOTTING: A total of 61 airplanes can be accommodated in a landing spot on the flight and hangar decks of a CVA-34 class angled deck carrier, (33 Flight, 28 Hangar).

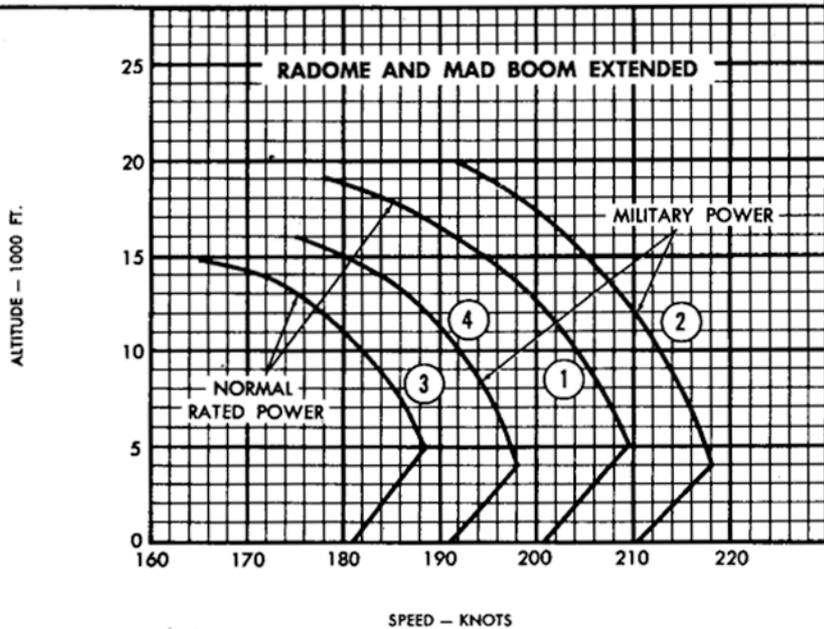
NOTES

(D) Radome and MAD Boom extended. Retraction of Radome and MAD Boom increases speed approximately 10 knots.

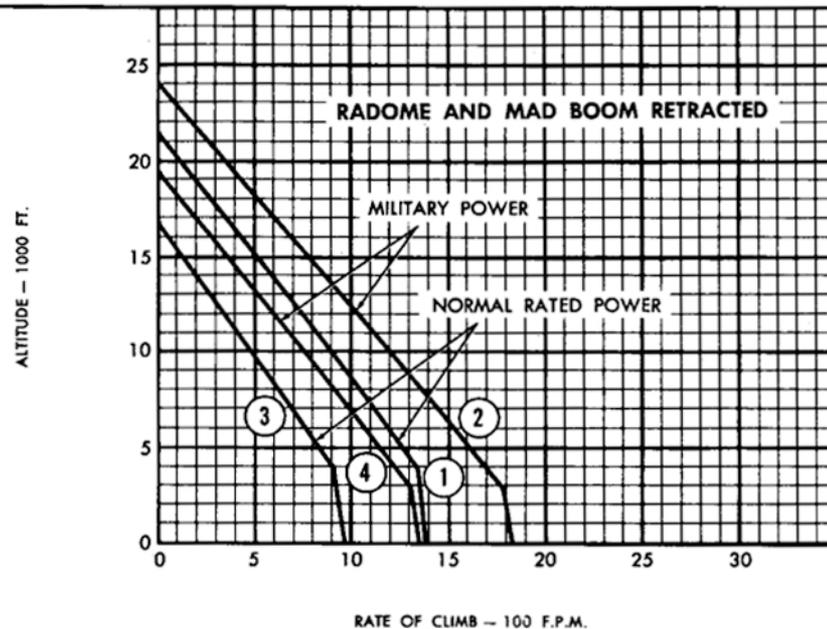
(E) Exceeds the maximum landing weight of 24,800 lbs. (Field) and 24,150 lbs. (Carrier).

(F) No Loiter

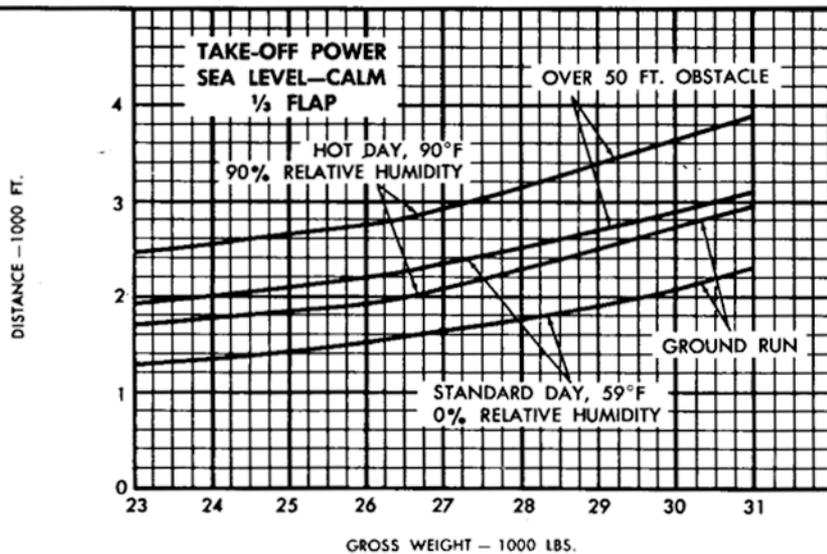
SPEED



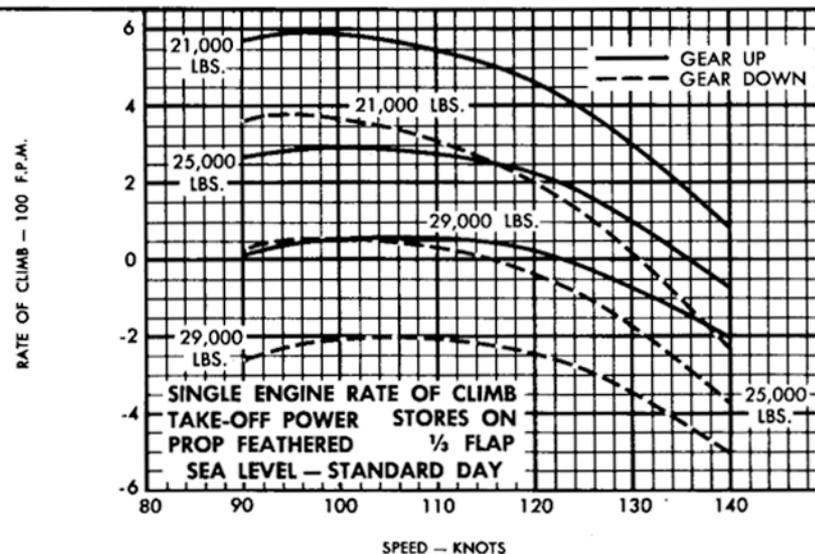
CLIMB



TAKE-OFF

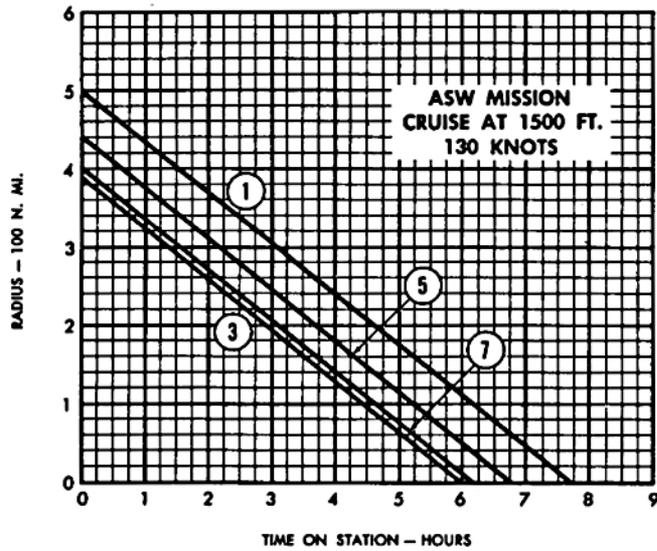


CLIMB

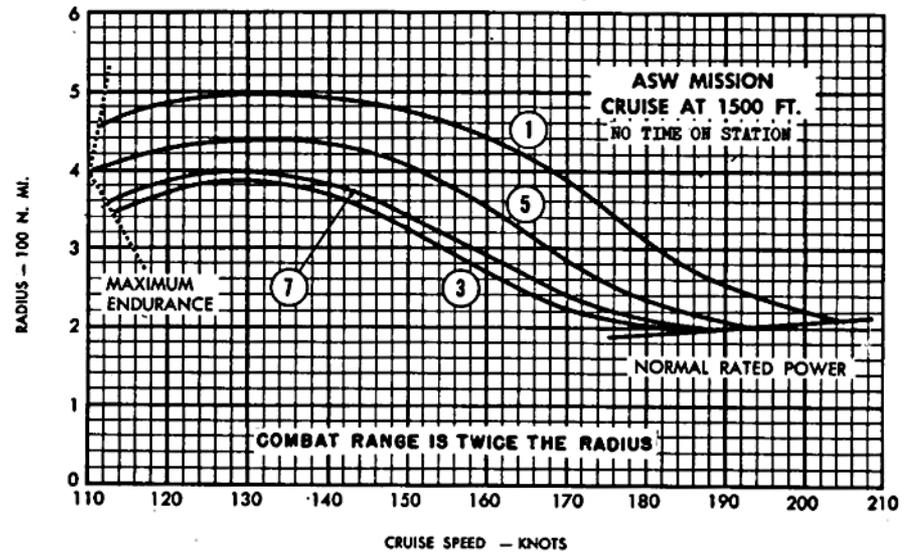


○ LOADING CONDITION COLUMN NUMBER

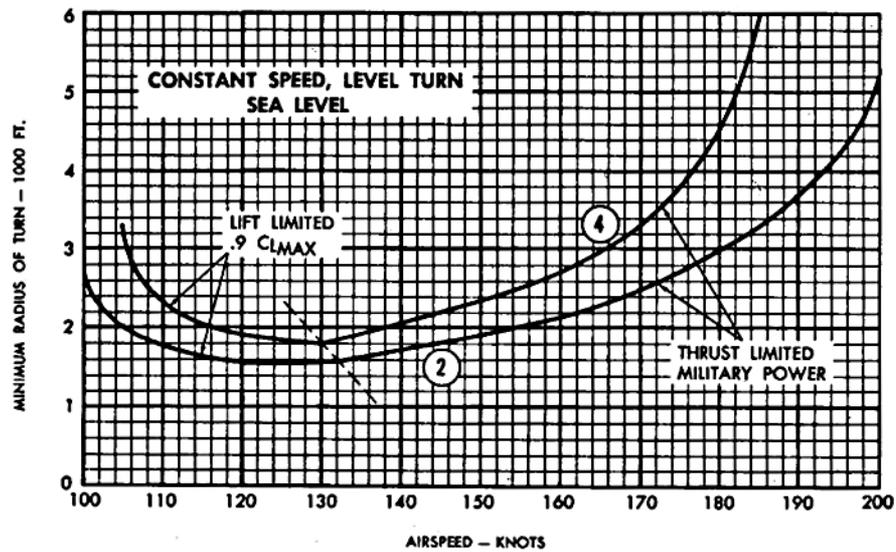
TIME ON STATION



CRUISE SPEED



TURNING

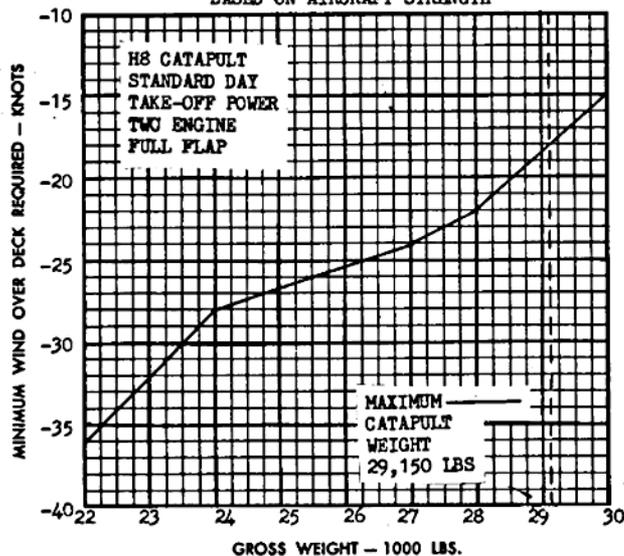


○ LOADING CONDITION COLUMN NUMBER

STANDARD AIRCRAFT CHARACTERISTICS, NAVPERS FORM 13100/4 (Rev. 7-65)

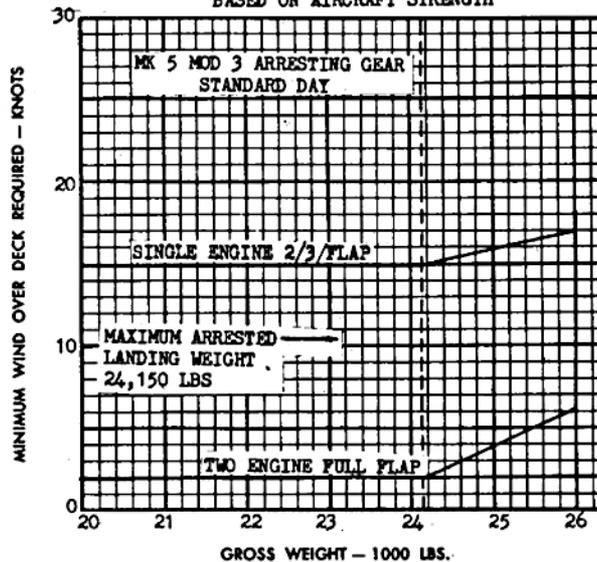
MINIMUM WIND OVER DECK REQUIRED FOR CATAPULTING VS. GROSS WEIGHT

BASED ON AIRCRAFT STRENGTH



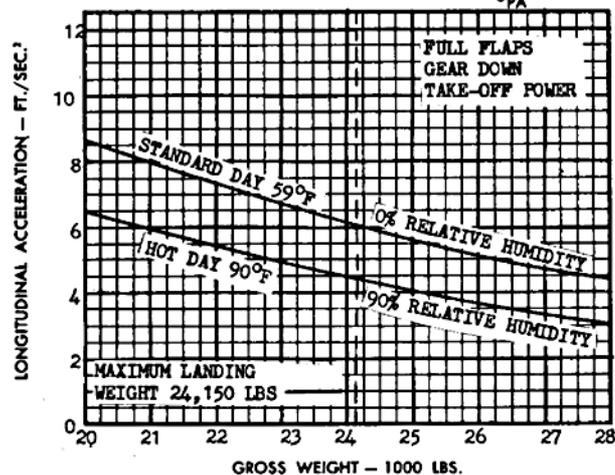
MINIMUM WIND OVER DECK REQUIRED FOR ARRESTING VS. GROSS WEIGHT

BASED ON AIRCRAFT STRENGTH



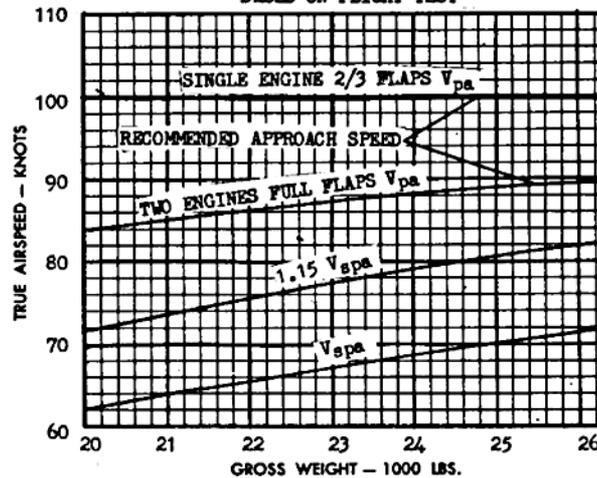
WAVE-OFF ACCELERATION

LONGITUDINAL ACCELERATION AT 1.15 V_{spa}



MINIMUM CARRIER APPROACH SPEEDS

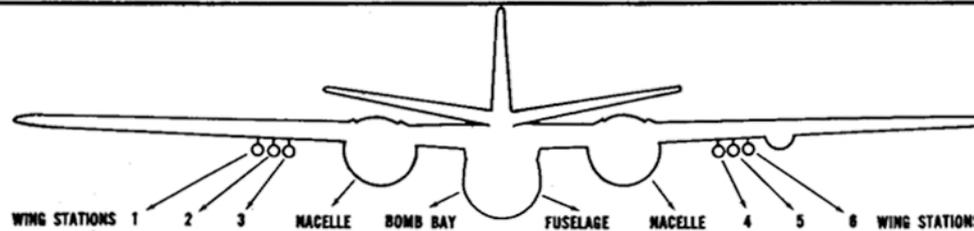
BASED ON FLIGHT TEST



NOTES

(A) These curves should be used for planning purposes only. Actual catapult and arresting gear operation should be in accordance with applicable aircraft Technical Orders, and Catapult and Arresting Gear Bulletins.

Data based on Interim Change No. 26
to NAVWEPS 01-85SAD-1



	EXTERNAL			INTERNAL		
	WING STATIONS Stores per Station			NACELLE Stores per Nacelle	BOMB BAY	FUSELAGE
	STATIONS 1 and 8	STATIONS 2 and 5	STATIONS 3 and 4			
TORPEDOES	1) MK 43 Mod-1 1) MK 44 Mod-0 1) MK 46 Mod-0 1) MK 46 Mod-1	1) MK 43 Mod-1 - - -	1) MK 43 Mod-1 1) MK 44 Mod-0 1) MK 46 Mod-0 1) MK 46 Mod-1		1) MK 34 2) MK 43 Mod-1 2) MK 44 Mod-0 2) MK 46 Mod-0 2) MK 46 Mod-1	
BOMBS	1) MK 54 Mod-2 6) MK 76 Mod-4, -5 (A) 6) MK 106 Mod-2, -3 (A)		1) MK 54 Mod-2		1) MK 54 Mod-2 1) MK 57 1) MK 101 Mod-0 1) BDU-11E.	
ROCKETS	1) 5 in. HVAR 1) Aero 7D 1) LAU-3A/A 1) Aero 6A-1, -2 1) LAU-32A/A 1) LAU-10/A	1) 5 in. HVAR 1) Aero 6A, -1, -2 1) LAU-32A/A	1) 5 in. HVAR 1) Aero 6A-1, -2 1) LAU-32A/A			
MINES					1) MK 52	
SONOBUOYS				16) AN/SSQ-2B, -2D, -23, -26, -28		
UNDERWATER SOUND SIGNALS (SUS)	6) MK 57 Mod-0 6) MK 61 Mod-0 6) MK 64 Mod-0 (A)	6) MK 57 Mod-0 6) MK 61 Mod-0 6) MK 64 Mod-0 (A)	6) MK 57 Mod-0 6) MK 61 Mod-0 6) MK 64 Mod-0 (A)	13) MK 57 Mod-0 13) MK 61 Mod-0 13) MK 64 Mod-0 13) MK 15 13) MK 50		62) MK 57 Mod-0 62) MK 61 Mod-0 62) MK 64 Mod-0 62) MK 15 62) MK 50 (B)
MARINE MARKERS	6) MK 58 Mod-0 (A)	6) MK 58 Mod-0 (A)	6) MK 58 Mod-0 (A)	13) MK 25 Mod-0		
FLOATLIGHTS	1) MK 6 Mod-3 (C)	1) MK 6 Mod-3 (C)	1) MK 6 Mod-3 (C)	2) X1-3A		
PHOTO POD	1) Night ASW Photo Pod (D)					
FLARES	1) MK 5 Mod-7, -10 1) MK 6 Mod-4, -5, -6 1) MK 24 Mod-2A/3	1) MK 5 Mod-7, -10 1) MK 6 Mod-4, -5, -6 1) MK 24 Mod-2A/3	1) MK 5 Mod-7, -10 1) MK 6 Mod-4, -5, -6 1) MK 24 Mod-2A/3			

NOTES

(A) Carried on A/A-37B-3 Practice Multiple Bomb Rack.

(B) Underwater Sound Signals - (27) carried in Dispenser and (35) in stowage.

(C) Six MK 6 Mod-3 Floatlights may be carried on A/A-37B-3 Practice Multiple Bomb Rack.

(D) Carried on station 6 only.

SERVICE

NOTES

ASW RANGE MISSIONS

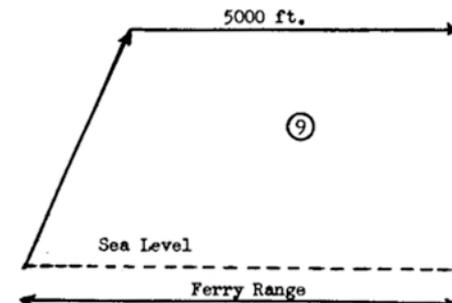
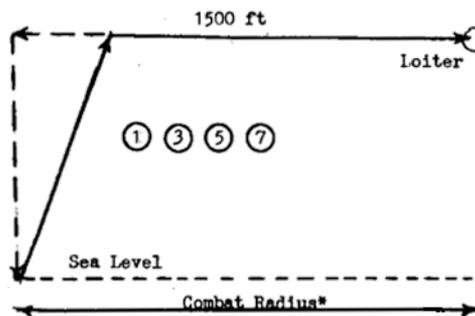
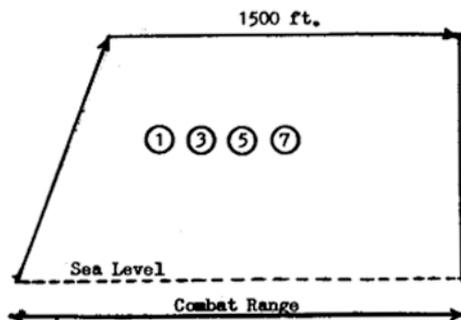
WARM-UP, TAXI, TAKE-OFF: 10 minutes at Normal Rated Power at Sea Level.
 CLIMB: Normal Power to 1500 ft. (with Radome and MAD Boom Retracted).
 RANGE AND ENDURANCE: Cruise at 130 knots at 1500 ft. (Radome and MAD Boom Extended).
 RESERVE: 10% Initial Fuel Load.
 MISSION TIME: Time required for climb and cruise.
 ELECTRICAL ACCESSORY DRAW: 20 BHP per engine during cruise.

ASW RADIUS MISSIONS

WARM-UP, TAXI, TAKE-OFF: 10 minutes at Normal Rated Power at Sea Level.
 CLIMB: Normal Power to 1500 ft (with Radome and MAD Boom Retracted).
 CRUISE AND ENDURANCE: Cruise at 130 knots at 1500 ft. (Radome and MAD Boom Extended).
 RESERVE: 10% Initial Fuel Load.
 MISSION TIME: Time required for climb, cruise, loiter and cruise back.
 ELECTRICAL ACCESSORY DRAW: 20 BHP per engine during cruise and loiter.

FERRY MISSION

WARM-UP, TAXI, TAKE-OFF: 10 minutes at Normal Rated Power at Sea Level.
 CLIMB: With Normal Power to 5000 ft (with Radome and MAD Boom Retracted).
 CRUISE: At speed for 99% maximum range at 5000 ft. (Radome and MAD Boom Retracted).
 RESERVE: 10% Initial Fuel Load.
 ELECTRICAL ACCESSORY DRAW: 20 BHP per engine during cruise.



* ASW radius as defined in MIL-C-5011A is 40% of the ASW range.

○ LOADING CONDITION COLUMN NUMBER