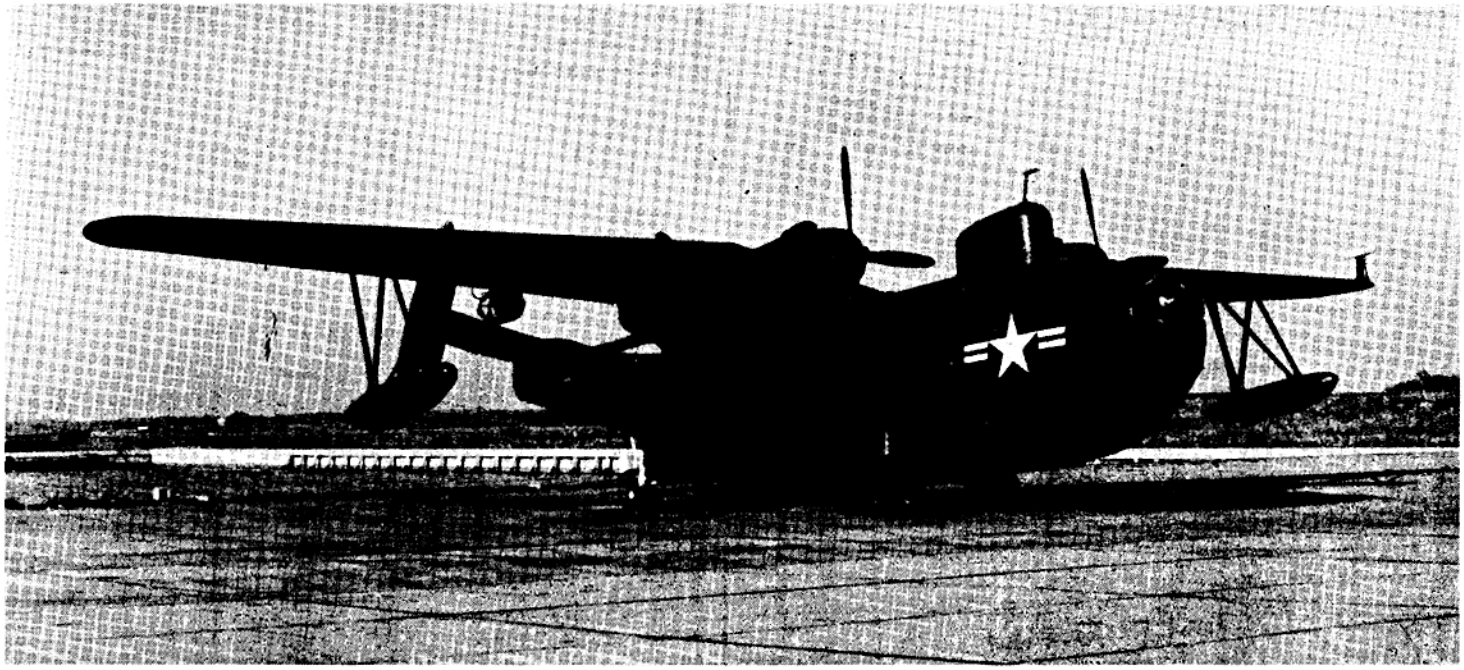


STANDARD AIRCRAFT CHARACTERISTICS

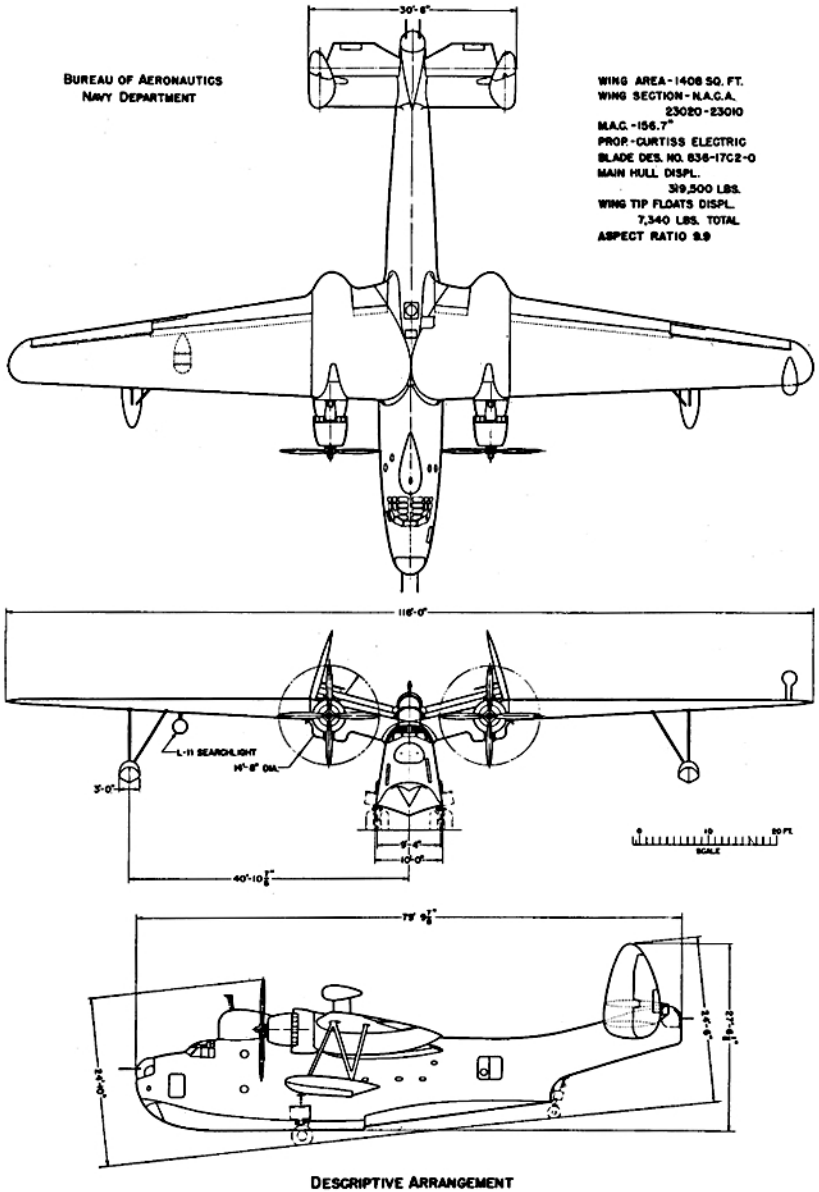
PBM-5S "MARINER"

MARTIN

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

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 1408 SQ. FT.
WING SECTION - N.A.C.A. 23020-23010
M.A.C. - 156.7"
PROP - CURTISS ELECTRIC
BLADE DES. NO. 836-17C2-0
MAIN HULL DISPL. 319,500 LBS.
WING TIP FLOATS DISPL. 7,340 LBS. TOTAL
ASPECT RATIO 9.9



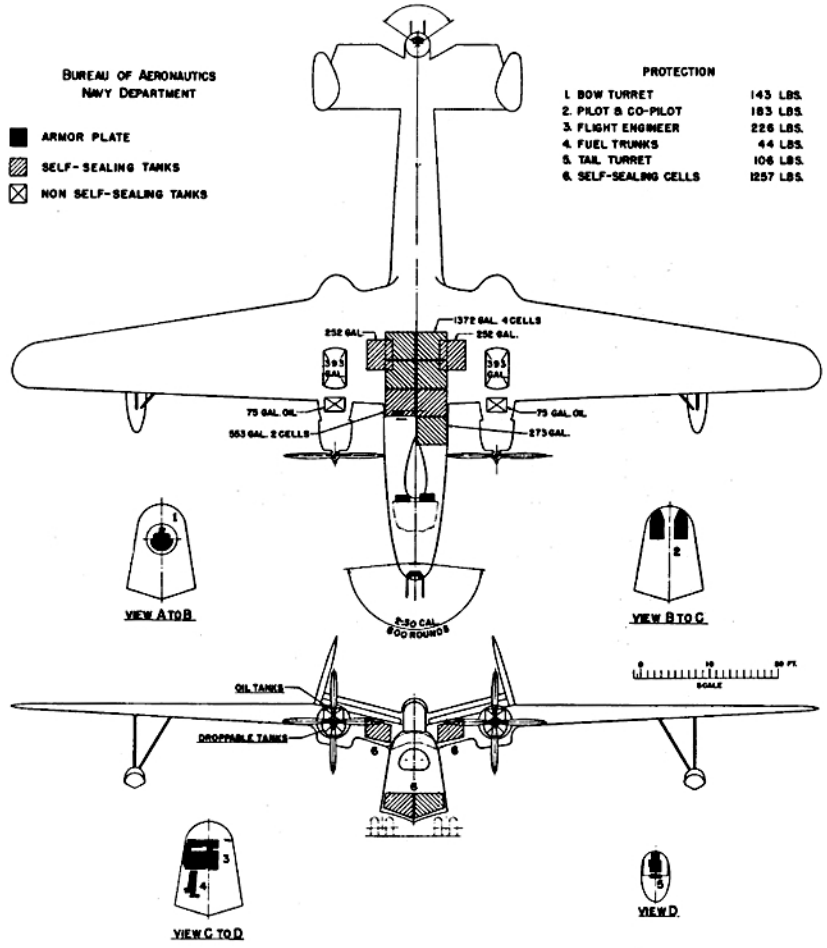
DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

- ARMOR PLATE
- SELF-SEALING TANKS
- NON SELF-SEALING TANKS

PROTECTION

1. BOW TURRET	143 LBS.
2. PILOT & CO-PILOT	183 LBS.
3. FLIGHT ENGINEER	226 LBS.
4. FUEL TRUNKS	44 LBS.
5. TAIL TURRET	106 LBS.
6. SELF-SEALING CELLS	1257 LBS.



ARMAMENT & TANKS

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

MISSION AND DESCRIPTION

The PBM-5S is a version of the PBM-5 seaplane, as modified for anti-submarine warfare. It is capable of operating from advanced seadromes and other areas where landplane operations are not feasible.

The hull is divided into five water-tight compartments by bulkheads provided with water-tight doors. The plane can be equipped with JATO for quick take-offs in small areas and rough water.

It normally carries a crew of ten.

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY	35,500	
BASIC	36,700	
DESIGN	56,000	2.4
COMBAT	51,105	2.6
MAX.T.O. (Smooth)	60,300	2.2
(Rough)	48,000	2.9
MAX.LD. (Smooth)	60,300	
(Rough)	48,000	

All weights are actual.

FUEL AND OIL

Gals.	No. Tanks	Location
504	2	Wing,S.S.
2,198	7	Hull,S.S.
786	2	Bomb Bay (Drop)

FUEL GRADE.....100/130
FUEL SPEC.....AN-F-48

OIL

CAPACITY (Gals.).....150
GRADE.....1120-1100
SPEC.....AN-O-8

POWER PLANT

NO. & MODEL.....(2) R-2800-34
MFR.....Pratt & Whitney
SUPERCH.....1 Stage, 2 Speed
PROP. GEAR RATIO.....0.450
PROP. MFR.....Curtiss
PROP. DES. NO.....836-17C2-0
NO. BL./DIA.....4/14'-8"

RATINGS

	Bhp	@ Rpm	@ Alt.
T. O.	2,100	2,800	S. L.
MIL.	2,100	2,800	3,000'
	1,700	2,800	16,000'
NORM.	1,700	2,600	8,500'
	1,500	2,600	18,500'

SPEC. NO. N-8081 (SEE NOTE)

DIMENSIONS

WING AREA	1,408 sq. ft.
SPAN	118' - 0"
LENGTH	79' - 10"
HEIGHT*	24' - 10"
TREAD	10' - 0"
M.A.C.	13' - 1"

* Height of airplane on beaching gear.

ELECTRONICS

LF-HF-VHF	AN/ARC-1,-5
COMPASS	SCR-269-F, AN/ARN-7
TRANSMITTER	AN/ART-13
MARKER BEACON	AN/ARN-8
ALTIMETER	AN/APN-1
IFF	AN/APX-2,-6,-8
SEARCH RADAR	AN/APS-2F,-15A
NAVIG.	AN/APN-4
ECM	AN/APA-11,-38, AN/APR-4
SONOBUOY REC.	AN/ARR-31
SEARCHLIGHT	L-11
MAD	AN/ASQ-1
WIRE RECORDER	13-A-3-J

ORDNANCE

GUNS

No.	Size	Location	Rds.
2	.50 Cal.	Nose Tur.	800
2	.50 Cal.	Tail Tur.	2000

Mark 18-4 Gunsights in Turrets

BOMBS

Type	Size	Location	No.
Bomb	100#	Bomb Bay	12
Bomb	1,000#	Bomb Bay	8
Bomb	1,600#	Bomb Bay	8
D.B.	325#	Bomb Bay	8
Mine	Mk.26-1	Bomb Bay	8
Mine	Mk. 13 or 13-5	Bomb Bay	4
Mine	Mk. 24	Bomb Bay	4

Mark 23-7 Bombsight

FIRE CONTROL

Bombing Equip.....AN/APA-5A
MAX. BOMB LOAD....12,800 lbs.

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

PERFORMANCE SUMMARY

LOADING CONDITION		(1) ASW 8 - 325# Depth Charges			
TAKE-OFF WEIGHT	lbs.	60,190			
Fuel	lbs.	16,212			
Bombs	lbs.	2,600			
Wing Power Loading (A) lbs/sq.ft; lbs/bhp.		42.7/20.0			
Stall Speed--Power off	kn.	84.1			
Stall Speed--Power off - No Fuel	kn.	71.9			
Stall Speed--Power on	kn.	72.1			
Maximum Speed/Alt (B)	kn/ft.	178/9,500			
Take-off Distance, deck -- calm	ft.	—			
Take-off Distance, deck kn.	ft.	—			
Take-off Time	sec.	55.6			
Rate of climb -- sea level (B)	ft/min.	590			
Service Ceiling (B)	ft.	20,800			
Time-to-climb 10,000 ft. (B)	min.	18.6			
Time-to-climb 20,000 ft. (B)	min.	56.4			
Combat Range/V av 1,500 ft.	n.mi/kn.	1,880/118			
Combat Radius/V av (ASW-1) ft.	n.mi/kn.	750/118			
LOADING CONDITION		(2) COMBAT	(3) COMBAT		
GROSS WEIGHT	lbs.	51,105	51,105		
Engine power		Military	Normal		
Fuel	lbs.	9,727	9,727		
Bombs/Tanks		None	None		
Max. speed at sea level	kn.	193	172		
Max. speed/Alt	kn/ft.	200/18,000	191/19,200		
Combat speed/Alt	kn/ft.	196/1,500	174/1,500		
Rate of climb SL	ft/min.	1,460	910		
Ceiling for 500 fpm R/C	ft.	21,100	19,200		
Time-to-climb/Alt.	min/ft.	21.3/20,000	—		

NOTES

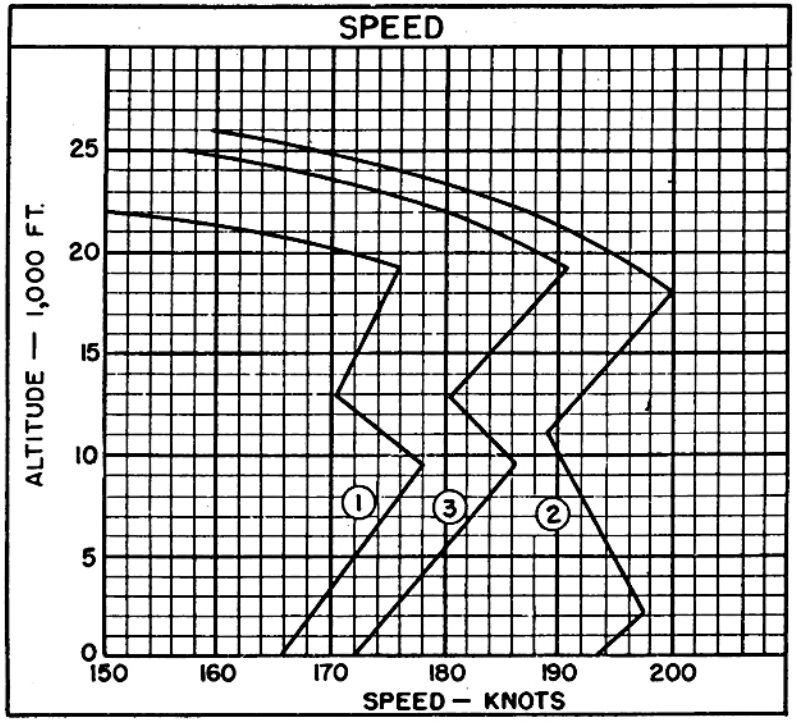
(A) BHP at Maximum Critical Altitude
(B) Normal BHP

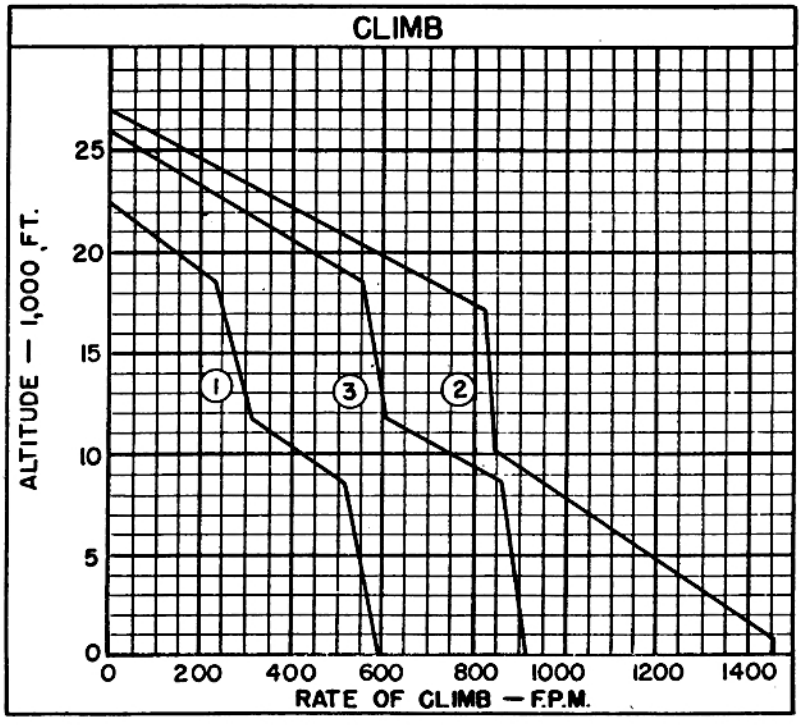
Performance is based on flight test of the PBM-5 airplane.

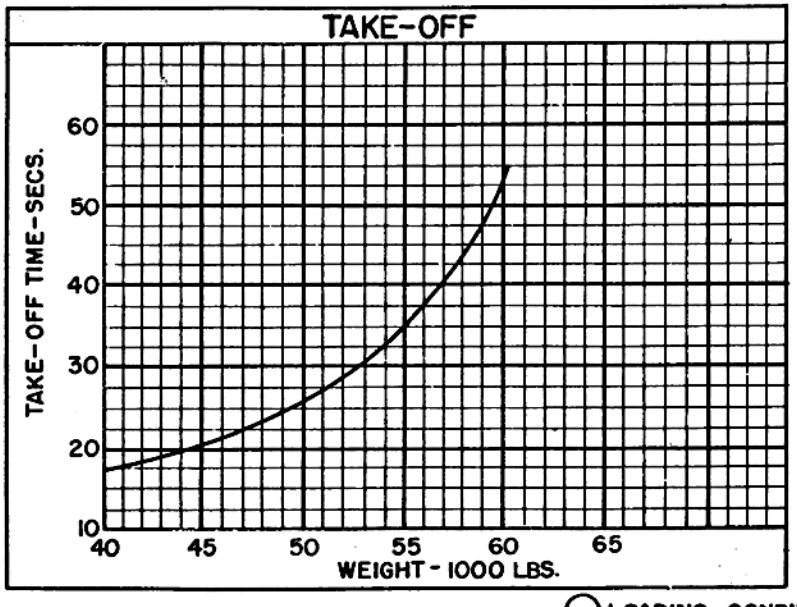
Range and radius are based on flight test fuel consumption data of the PBM-5 airplane increased by 5%.

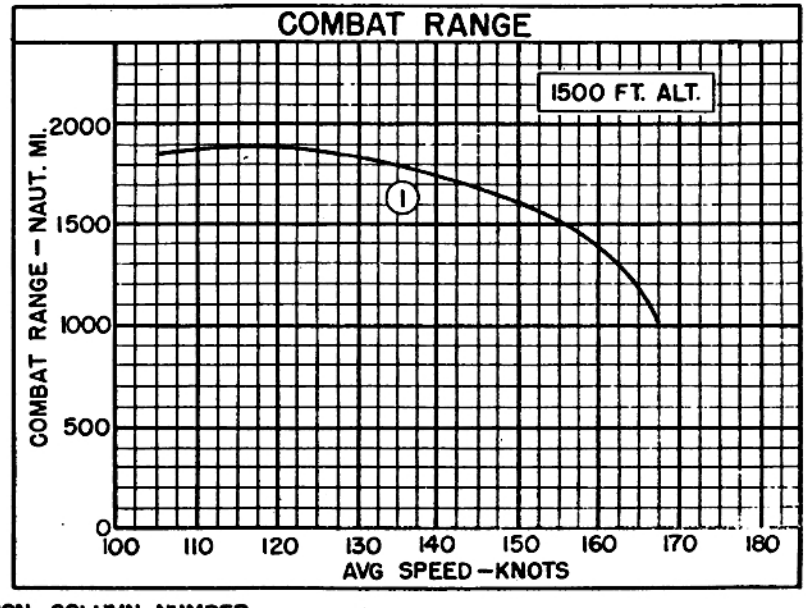
Airplane could not be stalled in these configurations because of insufficient elevator control. Minimum speeds shown.

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









◯ LOADING CONDITION COLUMN NUMBER

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

NOTES

GENERAL ASW PATROL PROBLEM NO. ASW-1

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

Take-off and military power are based on the use of AN-F-48 115/145 fuel resulting in 2300 Bhp at 2800 Rpm at Sea Level.

The following engine ratings from flight test of the PBM-5 airplane were used in preparation of performance data:

	Bhp	@ Rpm	@ Alt.
NORMAL	1,700	2,600	S. L.- 8,600
	1,500	2,600	11,800-18,600

With port engine inoperative, port propeller feathered, cowl flaps one-half open and oil cooler flaps fully open, the maximum gross weight at which 1,000 feet altitude can be maintained with NRP is 48,700 pounds.
