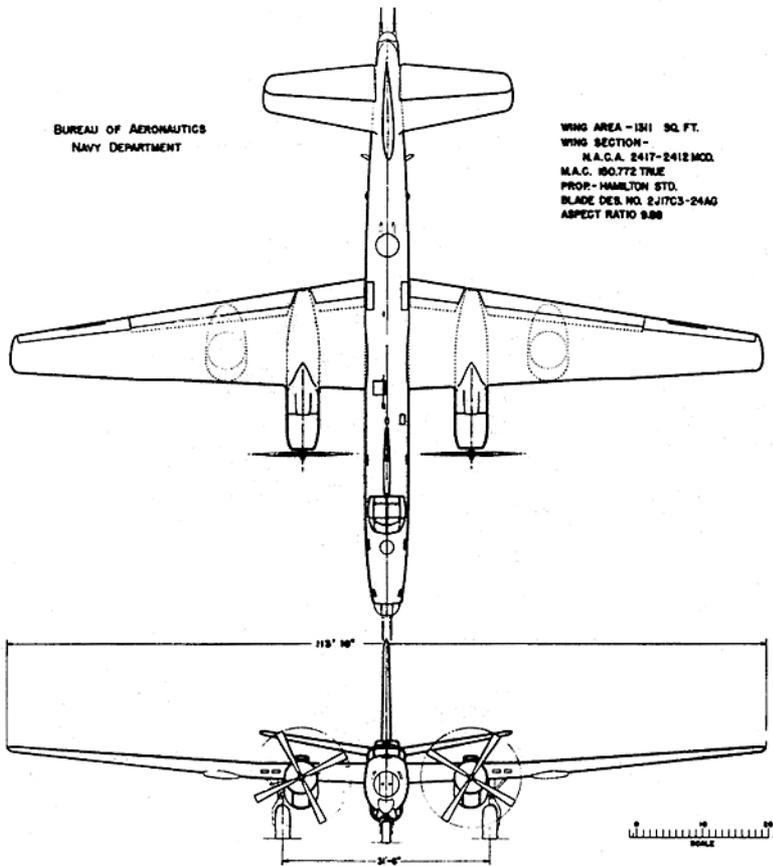




# STANDARD AIRCRAFT CHARACTERISTICS

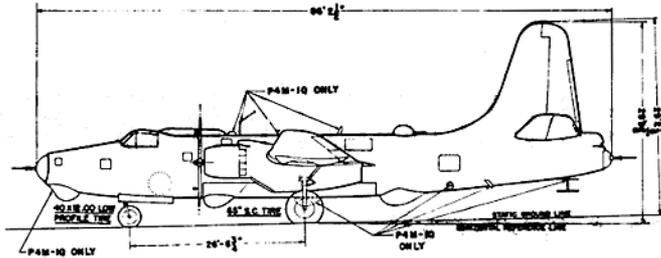
## P4M-1 "MERCATOR"

MARTIN

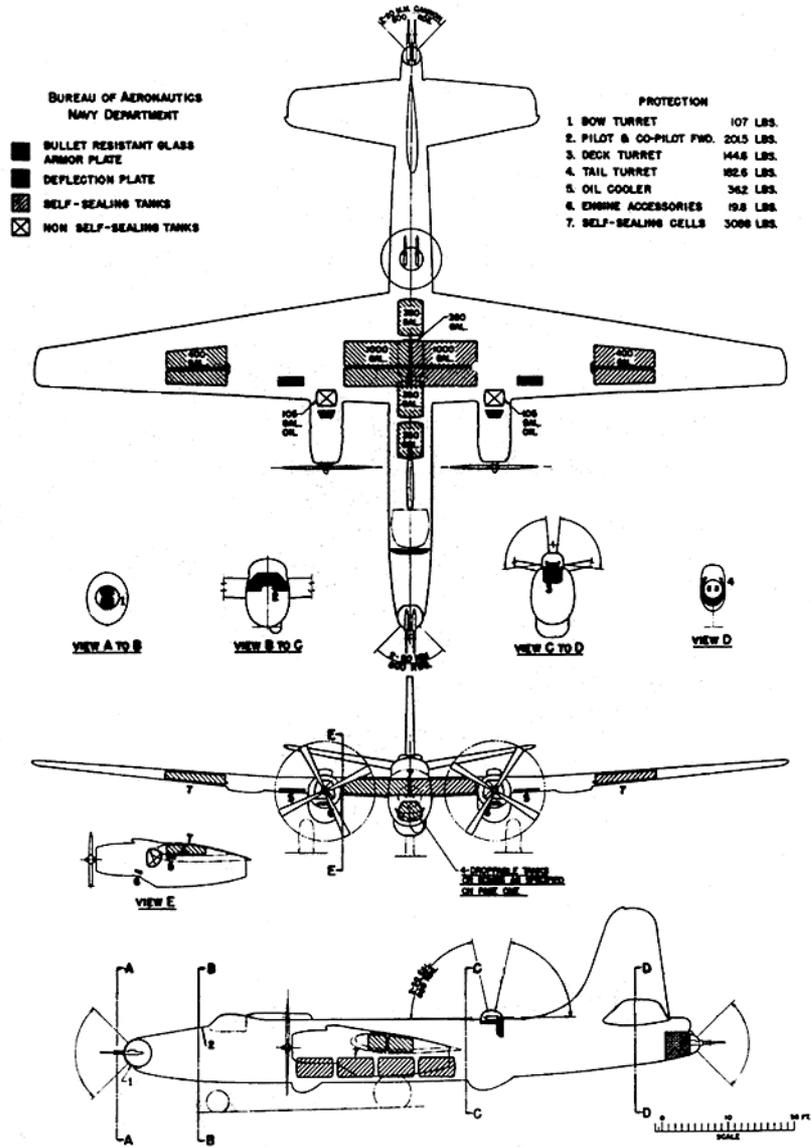


BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

WING AREA - 1311 SQ. FT.  
WING SECTION -  
N.A.C.A. 2417-2412 MOD.  
M.A.C. 100.772 TRUE  
PROP. - HAMILTON STD.  
BLADE DES. NO. 2/JTC3-24AG  
ASPECT RATIO 6.98



DESCRIPTIVE ARRANGEMENT



BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

- BULLET RESISTANT GLASS ARMOR PLATE
- DEFLECTION PLATE
- ▨ SELF-SEALING TANKS
- ⊗ NON SELF-SEALING TANKS

PROTECTION

- 1. BOW TURRET 107 LBS.
- 2. PILOT & CO-PILOT FWD. 201.5 LBS.
- 3. DECK TURRET 144.6 LBS.
- 4. TAIL TURRET 182.6 LBS.
- 5. OIL COOLER 342 LBS.
- 6. ENGINE ACCESSORIES 19.8 LBS.
- 7. SELF-SEALING CELLS 3098 LBS.

VIEW A TO B

VIEW B TO C

VIEW C TO D

VIEW D

VIEW E

STRENGTH OF THE OIL COOLER

ARMAMENT & TANKS

**POWER PLANT**

NO. & MODEL.....(2) R-4360-20  
 (2) J-33-A-10  
 MFR...Pratt & Whitney, Allison  
 SUPERCH.....1 Stage Var. Speed  
 PROP. GEAR RATIO.....0.425  
 PROP. MFR.....Ham. Std.  
 PROP. DES. NO.....2J1703-24AG  
 NO. BL./DIA.....4/15'-2"

**RATINGS**

	Bhp	@ Rpm	@ Alt.
T. O.	3,250	2,700	S. L.
MIL.	3,250	2,700	S. L.
NORM.	2,650	2,550	6,000'
	2,300	2,550	18,000'

	Lbs.	@ Rpm	@ Alt.
T. O.	4,600	11,750	S.S.L.
MIL.	4,600	11,750	S.S.L.
NORM.	3,900	11,250	S.S.L.
SPEC. NOS. N-7056, 258-B			

**ORDNANCE****GUNS**

No.	Size	Location	Rds.
2	20 mm	Bow	800
2	.50 cal.	Deck	800
2	20 mm	Tail	800

**BOMBS**

Type	Size	Location	No.
D.B.	325#	Bomb Bay	12
Bombs	100#	Bomb Bay	12
Bombs	1,000#	Bomb Bay	12
Bombs	1,600#	Bomb Bay	6
Bombs	2,000#	Bomb Bay	6
Mines	2,000#	Bomb Bay	6
Mines Mk. 26-1		Bomb Bay	12
Torp.	2,222#	Bomb Bay	2

**FIRE CONTROL**

3-Sight Assemblies, Mk. 18,  
 Mod. 6 (Turret)  
 1-Sight, Mk. 9, (Pilot)  
 1-Bomb Radar.....AN/APA-5A  
 MAX. BOMB LOAD.....12,000 lbs.

**MISSION AND DESCRIPTION**

The P4M-1 is a mine laying and attack airplane. Secondary mission is long range patrol and search. Normal crew complement is nine.

Jet engines are used in conjunction with reciprocating engines for take-off, climb, and combat. Long range cruise is accomplished on the reciprocating engines above.

Construction is conventional. Single slotted flaps are fitted. Flaps and landing gear are hydraulically actuated. Water ditching provisions include forward hydro flap and general structural reinforcement.

This airplane can also be fitted for photo reconnaissance and high speed target towing.

**DIMENSIONS**

WING AREA.....1,311 sq. ft.  
 SPAN.....113' - 10"  
 LENGTH.....86' - 3"  
 HEIGHT.....29' - 2"  
 TREAD.....31' - 6"  
 PROP. CLEAR.....2' - 0"  
 M.A.C.....12' - 7"

**WEIGHTS**

Loadings	Lbs.	L.F.
EMPTY.....	51,538.....	
BASIC.....	53,683.....	
DESIGN.....	80,000.....	2.6
COMBAT.....	67,835.....	2.6
MAX.T.O.....	92,500*.....	2.25
MAX.LAND.....	88,000.....	

All weights are actual.

\* Limited by strength

**FUEL AND OIL**

Gals.	No. Tanks	Location
800	2	Wing; Seal
2,000	2	Wing; Seal
1,400	4	Bomb Bay; Seal
FUEL GRADE.....115/145		
FUEL SPEC.....MIL-F-5572		

**OIL**

	R-4360	J-33
CAP. (Gals.).....	210	3.5
GRADE.....	1100-1120	1010
SPEC.....	MIL-O-6082	6081

**ELECTRONICS**

VHF TRANSCEIVER.....AN/ARC-1  
 UHF.....AN/ARC-27  
 (Replacement for AN/ARC-1)  
 TRANSMITTER.....AN/ART-13  
 HF RECEIVER.....AN/ARR-15,-15A  
 MARKER BEACON REC.....AN/ARN-8  
 COMPASS.....AN/ARN-7  
 SEARCH RADAR.....AN/APS-33A  
 SWEEP INTEGRATOR KIT  
 IFF.....AN/APX-2  
 LORAN.....AN/APN-4  
 ALTIMETER.....AN/APN-1  
 (Continued on NOTES)

## PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) MINE LAYER 12 Mk-26 Mines	(4) PATROL 2 Mk-41-0 Torps.	(5) PATROL
TAKE-OFF WEIGHT lb.	86,555	82,069	84,514
Fuel (Fixed/Drop) lb.	16,800	16,800/4,200	16,800/8,400
Payload lb.	12,000	2,450	--
Wing loading lb./sq.ft.	66.0	62.6	64.4
Stall speed - power-off kn.	99.4	96.8	98.2
Take-off run at S.L. - calm ft.	1,970(3,630)	1,730(3,390)	1,860(3,520)
Take-off run at S.L. kn. wind ft.	--	--	--
Take-off to clear 50 ft. - calm ft.	2,675(4,990)	2,405(4,715)	2,545(4,855)
Max. speed/altitude (1) kn./ft.	226/8,000	232/12,000	229/10,000
Rate of climb at S.L. (2) fpm	2,070	2,230	2,140
Time: S.L. to 5,000 ft. (2) min.	2.5	2.34	2.4
Time: S.L. to 10,000 ft. (2) min.	5.4	5.0	5.2
Service ceiling (100 fpm) (2)/(1) ft.	30,800/18,400	32,000/20,000	31,500/19,000
Combat range n.mi.	1,460	2,085	2,535
Average cruising speed kn.	167	166	167
Cruising altitude(s) ft.	1,500	1,500	1,500
Combat radius n.mi.	545	835	1,015
Average cruising speed kn.	160	166	167
COMBAT LOADING CONDITION	(2) NO MINES 60% Fuel	(3) NO MINES 60% Fuel	
COMBAT WEIGHT lb.	67,835	67,835	
Engine power	Mil. + Jet	Military	
Fuel lb.	10,080	10,080	
Combat speed/combat altitude kn./ft.	319/S.L.	238/S.L.	
Rate of climb/combat altitude fpm/ft.	3,600/S.L.	1,660/S.L.	
Combat ceiling (500 fpm) ft.	35,000	21,000	
Rate of climb at S.L. fpm	3,600	1,660	
Max. speed at S.L. kn.	319	238	
Max. speed/altitude kn./ft.	343/22,000	251/20,000	
LANDING WEIGHT lb.	59,566		
Fuel lb.	1,811		
Stall speed - power-off kn.	82.2		
Stall speed - with approach power kn.	75.8		

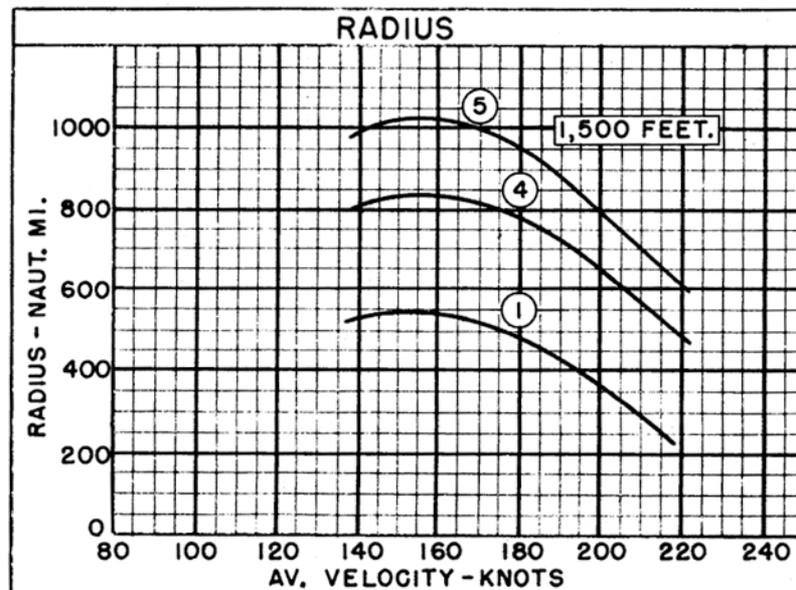
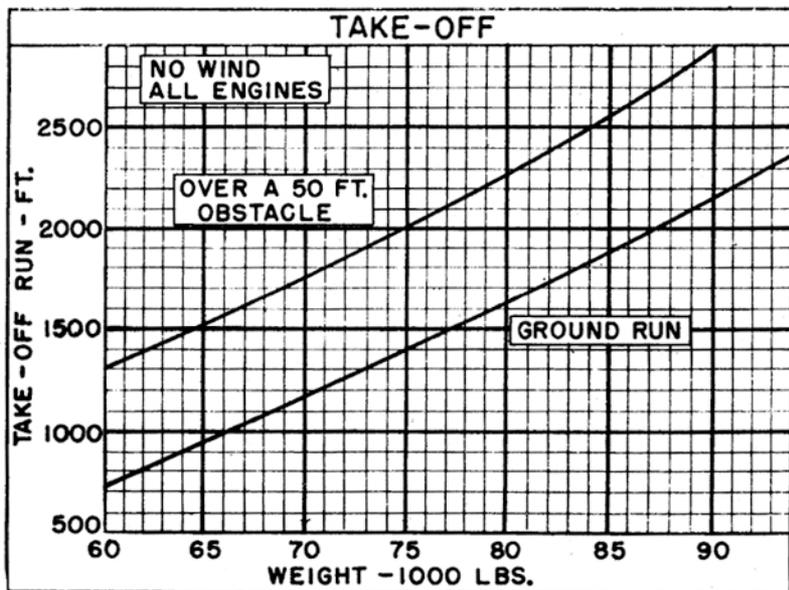
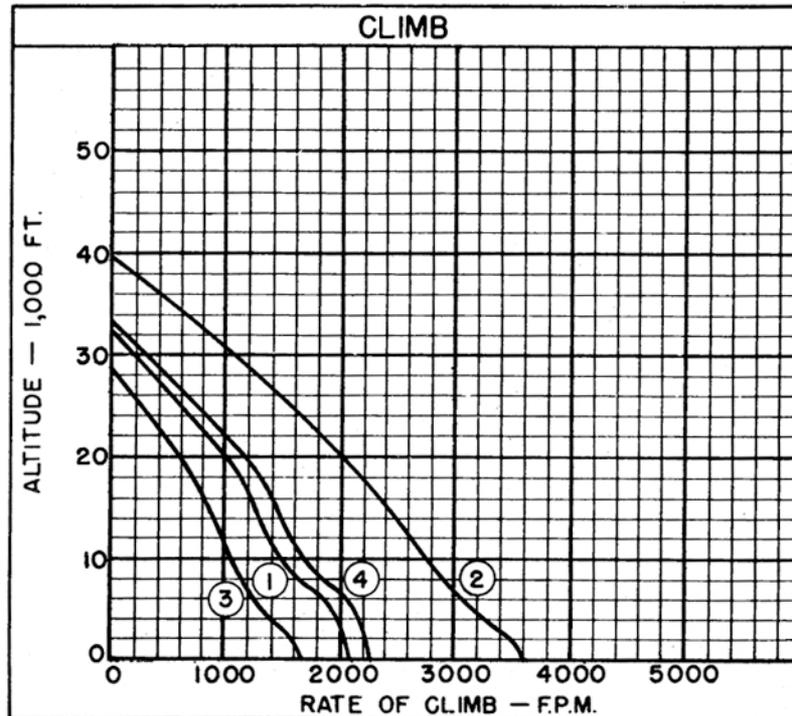
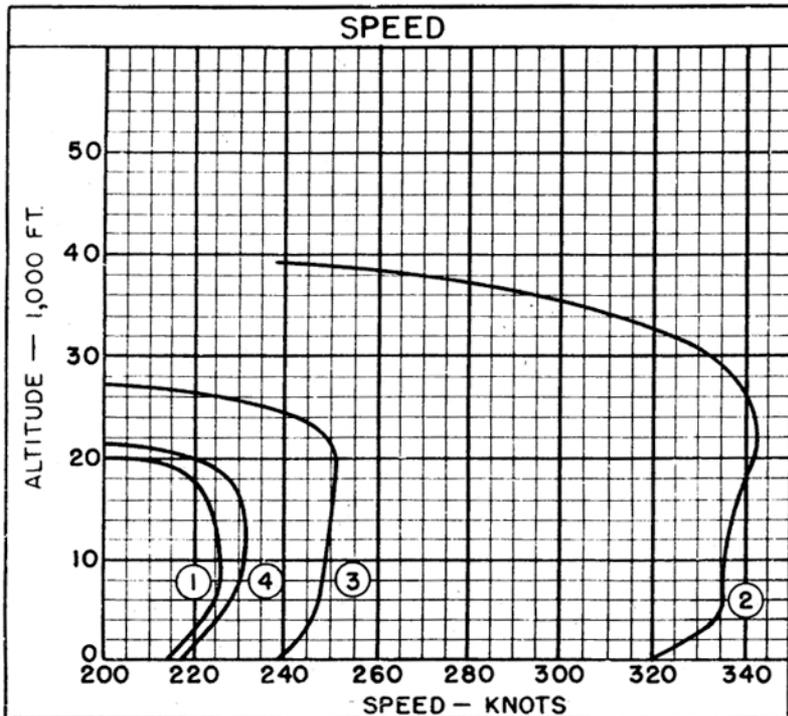
## NOTES

- (1) Reciprocating engines: normal power -- Jet engines: inoperative  
 (2) Reciprocating engines: normal power -- Jet engines: normal power

Performance is based on NATC flight test of P4M-1 airplane.

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

Take-off is for all engines. Figure in parenthesis is for reciprocating engines only.



○ LOADING CONDITION COLUMN NUMBER

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

# NOTES

There are provisions only for camera equipment as follows:

Trimet - 3 K-17 6"

Vert. - K-17 6", 12", 24", K-18, F-56, K-25

---

MINE LAYER AND LOW ALTITUDE RECONNAISSANCE COMBAT RADIUS PROBLEM -- CONDITION (1)

WARM-UP, TAXI, TAKE-OFF: Reciprocating engines: 10 minutes at normal power. Jet engines: 5 minutes at normal power.

CLIMB: On course to 1,500 feet at normal power, all engines

CRUISE-OUT: At 1,500 feet at V for long range. Jet engines inoperative.

DESCEND: To sea level (no fuel used, no distance gained).

RUN-IN: 50 n.miles at military power, all engines.

DROP MINES

RUN-OUT: 50 n.miles at military power, all engines.

CLIMB: To 1,500 feet at normal power, all engines.

CRUISE-BACK: At 1,500 feet at V for long range. Jet engines inoperative.

RESERVE: 20 minutes at V for long range at sea level (jet engines idling) plus 5% of initial fuel load.

COMBAT RADIUS = CLIMB + CRUISE-OUT + RUN-IN = RUN-OUT + CLIMB + CRUISE-BACK

---

PATROL RANGE AND RADIUS PROBLEM -- CONDITIONS (4) AND (5)

WARM-UP, TAXI, TAKE-OFF: Reciprocating engines: 10 minutes at normal power. Jet engines: 5 minutes at normal power.

CLIMB: On course to 1,500 feet at normal power, all engines.

COMBAT RANGE: Cruise at V for long range at 1,500 feet.

RESERVE: 20 minutes at V for long range at sea level (jet engines idling) plus 5% of initial fuel load.

COMBAT RADIUS = 40% OF COMBAT RANGE

---

ELECTRONICS (Continued)

RCM REC. & ANALYZER.....AN/APR-4

LF TRANS.-REC.....R-23A/ARC-5

VISUAL OMNI-RANGE.....AN/ARN-14A

(Planned Service Installation)

INTERCOMMUNICATION.....AN/AIC-5A

ECM REC.....AN/APR-9, -9A

PULSE ANALYZER.....AN/APA-64

PULSE ANALYZER.....AN/APA-38

DIRECTION FINDER.....AN/APA-69

IFF.....AN/APX-6

IFF (I-R Unit).....AN/APX-17

(Planned Service Installation)

SONOBUOY REC.....AN/ARR-31

(Planned Service Installation)

SONOBUOY REC.....AN/ARR-26

(Replacement for AN/ARR-31)

---

This chart previously issued 1 December 1948. Reason for reissue: NATC flight test data available.

---