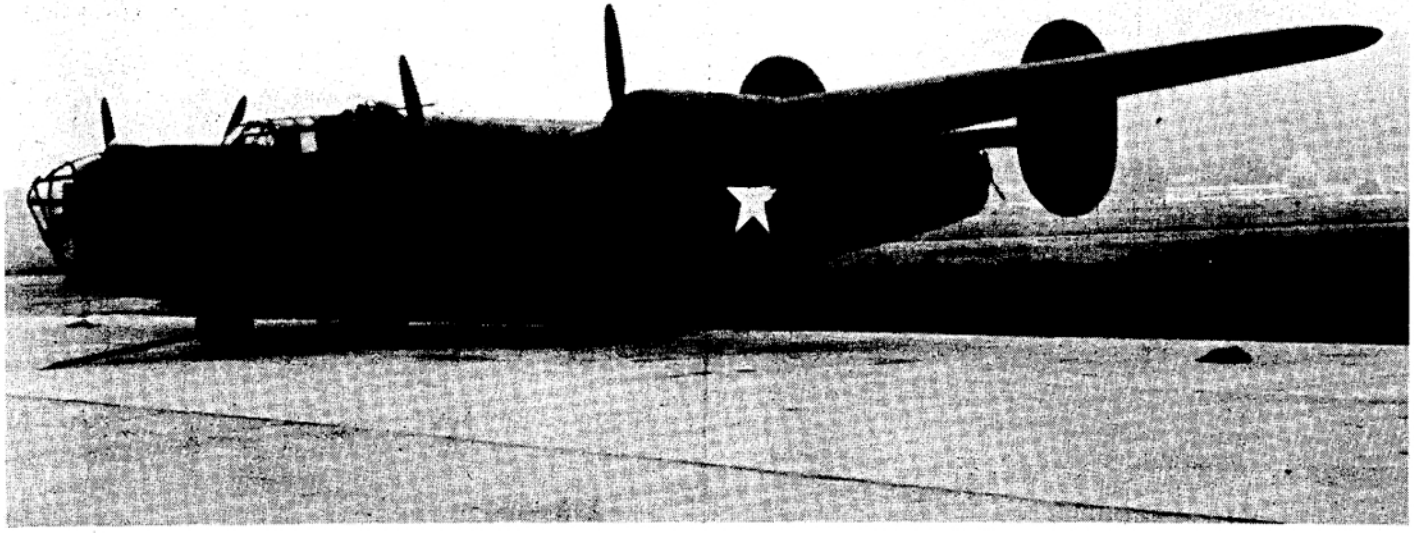


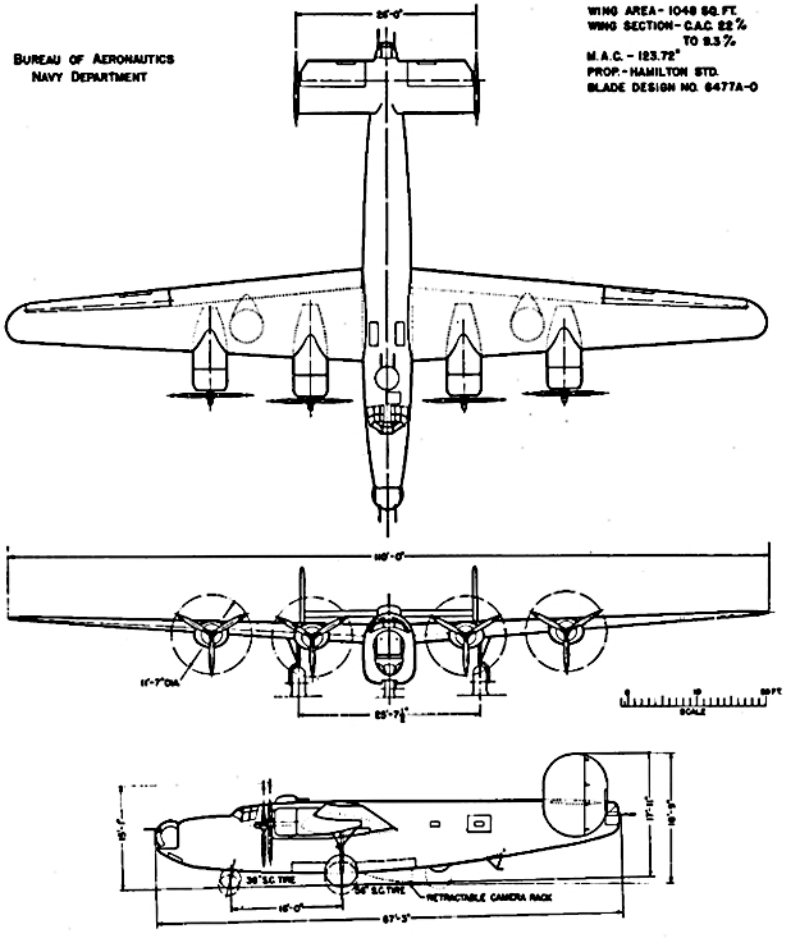
STANDARD AIRCRAFT CHARACTERISTICS

PB4Y-1P "LIBERATOR"

CONVAIR

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 1048 SQ. FT.
WING SECTION - C.A.C. 22.7% TO 9.3%
M.A.C. - 123.72"
PROP. - HAMILTON STD.
BLADE DESIGN NO. 6477A-0

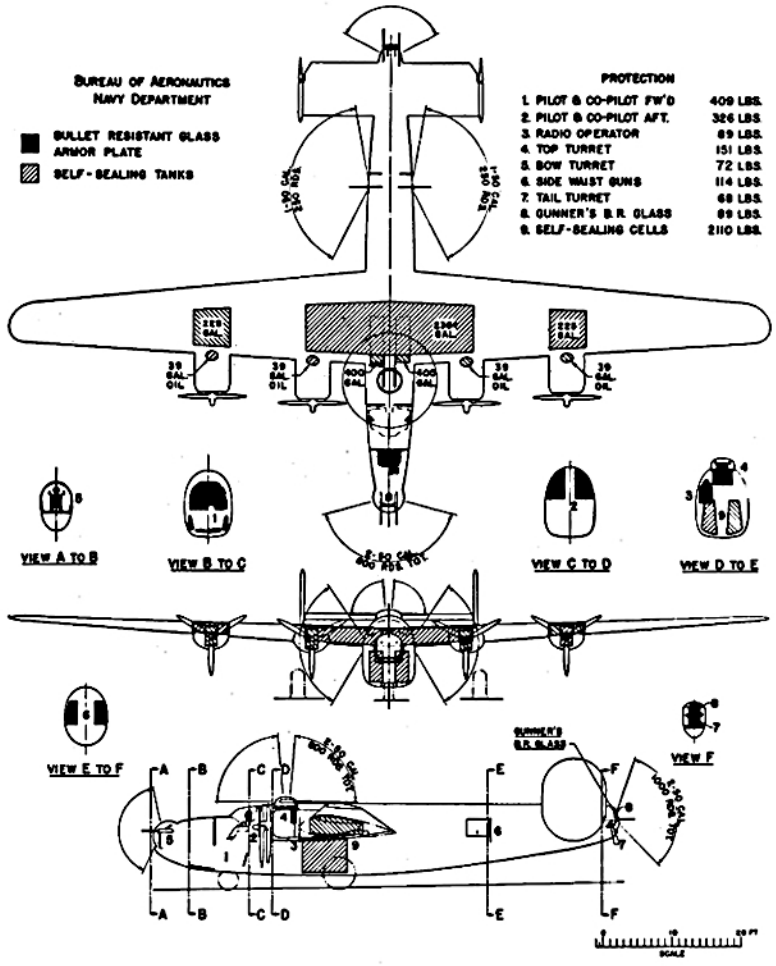


DECRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

BULLET RESISTANT GLASS ARMOR PLATE
SELF-SEALING TANKS

PROTECTION	
1. PILOT & CO-PILOT FW'D	409 LBS.
2. PILOT & CO-PILOT AFT.	326 LBS.
3. RADIO OPERATOR	89 LBS.
4. TOP TURRET	151 LBS.
5. BOW TURRET	72 LBS.
6. SIDE WAIST GUNS	114 LBS.
7. TAIL TURRET	68 LBS.
8. GUNNER'S B.R. GLASS	89 LBS.
9. SELF-SEALING CELLS	2110 LBS.



ARMAMENT & TANKS

MISSION AND DESCRIPTION

The PB4Y-1P is the Navy photographic version of the Liberator (B-24). It is modified to serve as a long range, high altitude, day and night photo-reconnaissance and mapping airplane. It features the Davis wing and tricycle landing gear. It carries a crew of eleven.

Structure is conventional, using a two-spar wing carrying a hydraulically actuated Fowler flap.

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY	37,712	
BASIC	39,575	
DESIGN	41,000	3.67
COMBAT	55,570	2.7
MAX.T.O	63,000	2.2
MAX.LAND	56,000	

All weights are calculated.

POWER PLANT

NO. & MODEL.....(4) R-1830-43
MFGR.....Pratt and Whitney
SUPERCH...1 Stg, 1 Spd, Turbo
TURBO MODEL.....G.E. B-2
PROP. GEAR RATIO.....0.5625
PROP. MFGR.....Hamilton Std.
PROP. DES. NO.....6477A-0
NO. BL./DIA.....3/11'-7"

RATINGS

	Bhp @	Rpm @	Alt.
T. O.	1200	2700	S. L.
MIL.	1200	2700	25000'
NORM.	1100	2550	25000'

SPEC. NO. A-5119-A

FUEL AND OIL

Gals.	No. Tanks	Location
2,364	1	Cent. Sect.
450	2	Wing
800	2	Bomb-bay

All tanks self-sealing.
FUEL GRADE.....100/130
FUEL SPEC.....AN-F-48

OIL

CAPACITY (Gals.).....156
GRADE.....1120
SPEC.....AN-O-8

ORDNANCE

GUNS

No.	Size	Location	Rds.
2	.50 cal.	Tail	1,000
2	.50 cal.	Waist	500
2	.50 cal.	Top	800
2	.50 cal.	Nose	800

FIRE CONTROL

Mk. 9...Illuminated Gunsights

CAMERAS

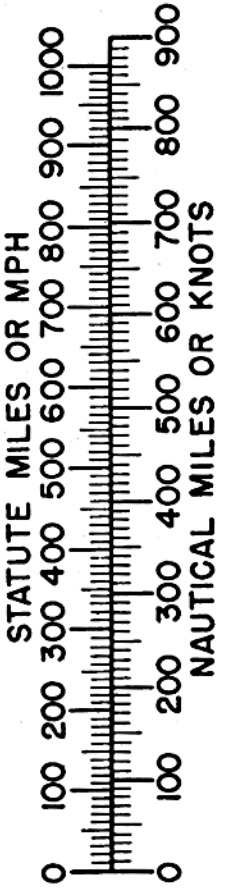
4 vertical K-17 (6", 12", 24" or 40") or F-56 (8¼", 20" or 40") or K-18 (24" or 40"). Trimetrogon K-17 (6"). Type A radar recording camera.

DIMENSIONS

WING AREA.....1,048 sq. ft.
SPAN.....110'-0"
LENGTH.....67'-3"
HEIGHT.....18'-9"
TREAD.....25'-8"
M.A.C.....10'-4"

ELECTRONICS

HF, MF REC.....BC-348
TRANSMITTER.....AN/ART-13
ADF.....SCR-269G
COMMAND COMM.SYS....SCR-274N
MARKER BEACON REC...AN/ARN-8
VHF.....AN/ARC-1
LORAN.....AN/APN-4
ALTIMETER(LOW ALT)..AN/APN-1
ALTIMETER(HIGH ALT).SCR-718C
RADAR.....AN/APS-15
IFF.....AN/APX-2



PERFORMANCE SUMMARY

LOADING CONDITION		(1) RECONNAISSANCE			
TAKE-OFF WEIGHT	lbs.	63,000			
Fuel (Fixed/Drop)	lbs.	16,884/1,674			
Bombs	lbs.				
Wing/Power Loading (A)	lbs/sq.ft;lbs/bhp.	60.1/14.3			
Stall Speed--Power off	kn.	90.9			
Stall Speed--Power off - No Fuel	kn.	76.4			
Stall Speed--Power on	kn.	84.5			
Maximum Speed/Alt (B)	kn/ft.	239/26,600			
Take-off Distance, deck -- calm	ft.	2,645			
Take-off Distance, deck kn.	ft.				
Take-off Distance, Airport	ft.	4,510			
Rate of climb -- sea level (B)	ft/min.	856			
Service Ceiling (B)	ft.	31,000			
Time-to-climb 10,000 ft. (B)	min.	12.4			
Time-to-climb 20,000 ft. (B)	min.	27.4			
Combat Range/V av 10,000 ft.	n.mi/kn.	2,430/147			
Combat Radius/V av 10,000 ft.	n.mi/kn.	970/147			
Reconnaisance Radius	n.mi/kn.	885/147			
LOADING CONDITION		(2) COMBAT	(3) COMBAT		
GROSS WEIGHT	lbs.	55,570	55,570		
Engine power		Military	Normal		
Fuel	lbs.	9,454	9,454		
Bombs/Tanks					
Max. speed at sea level	kn.	204	198		
Max. speed/Alt	kn/ft.	252/26,700	245/26,600		
Combat speed/Alt	kn/ft.	222/10,000	215/10,000		
Rate of climb SL	ft/min.	1,457	1,285		
Ceiling for 500 fpm R/C	ft.	30,500	29,300		
Time-to-climb/Alt.	min/ft.				

NOTES

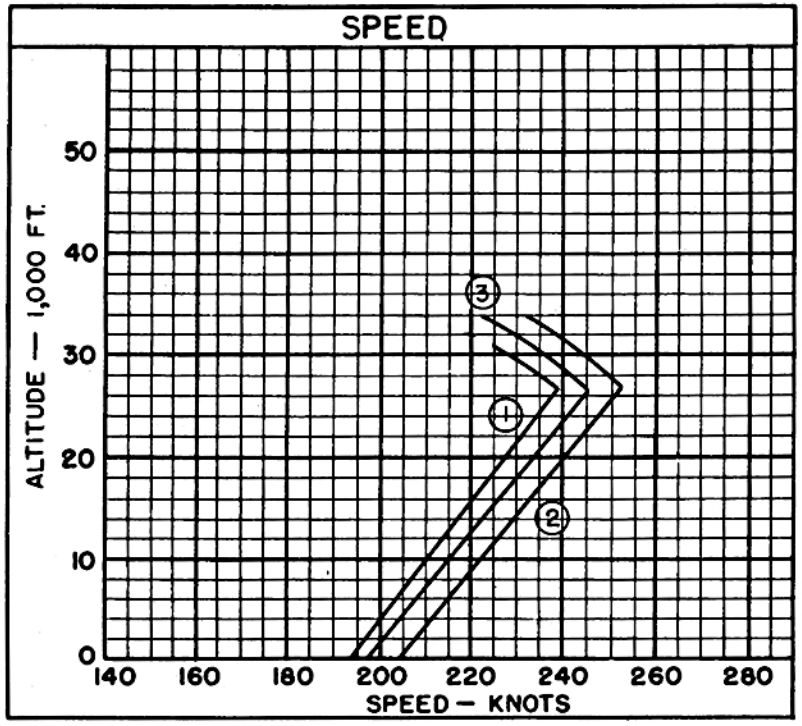
(A) BHP at Maximum Critical Altitude
(B) Normal BHP

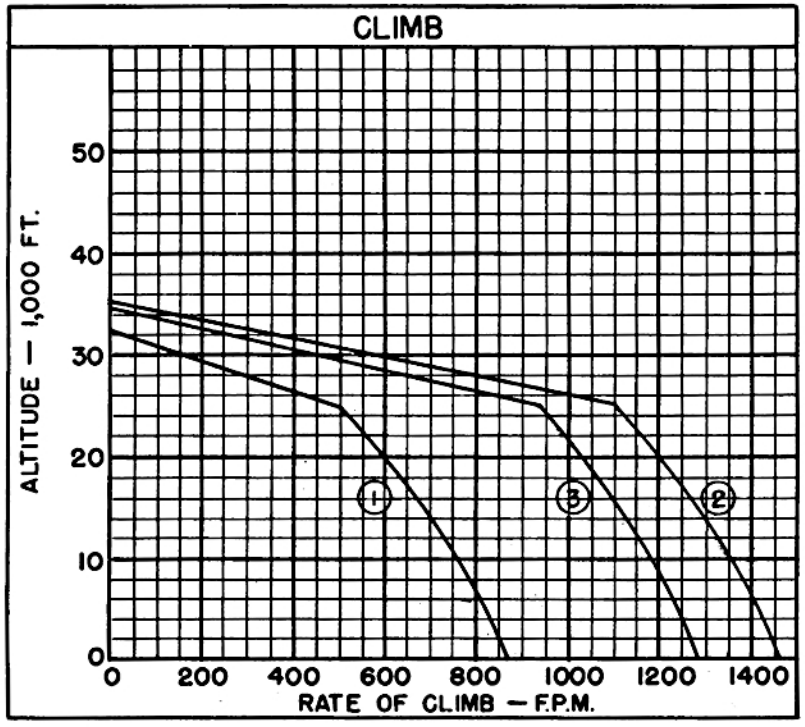
Performance is based on flight test of PB4Y-1.

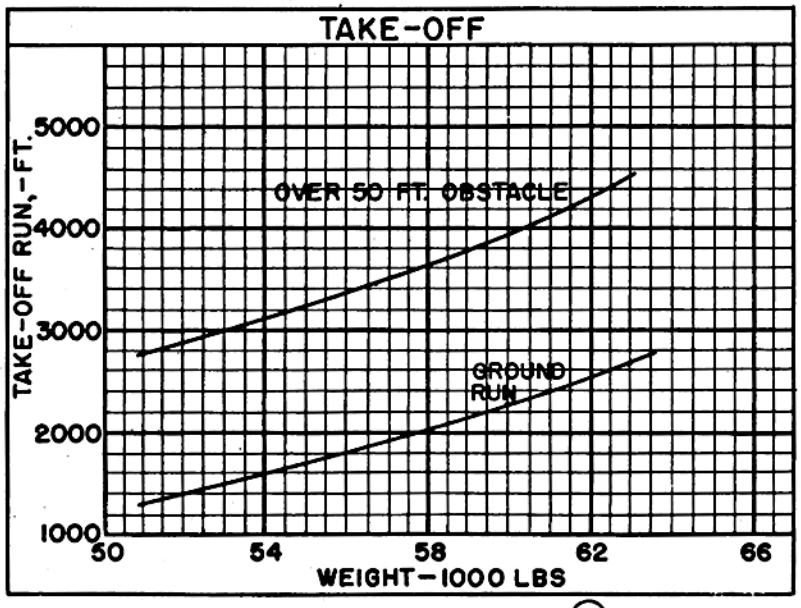
Range and radius are based on flight test fuel consumption increased by 5%.

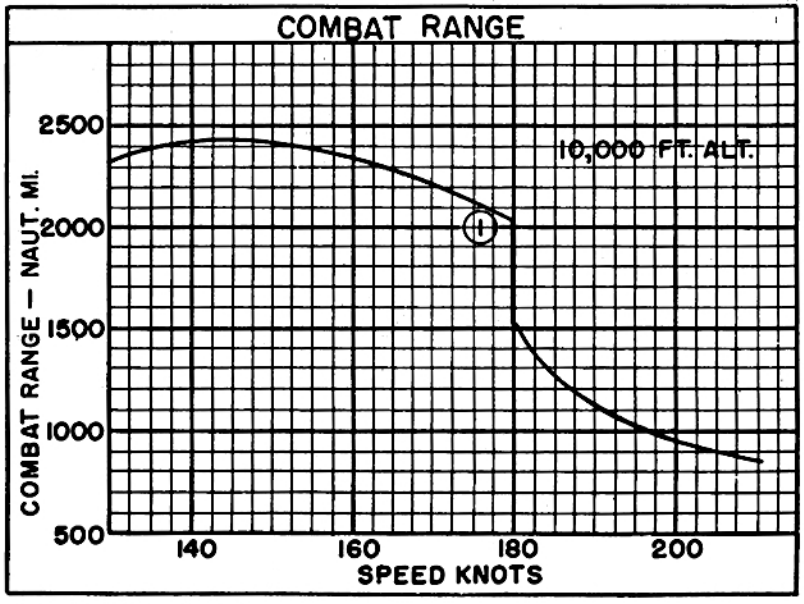
Performance is presented for 6477A-0 propeller blades. Installation of 6353A-18 blades increases take-off distance over 50 ft. obstacle by 200 ft. Effect on range and speed is negligible.

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









◯ LOADING CONDITION COLUMN NUMBER

NOTES

All performance is given with radome extended. With the radome retracted, $V_{max.}$ at airplane critical altitude increases 10 knots.

ASW-1 MODIFIED

Combat Radius = 40% of combat range at 10,000 feet altitude. (See Foreword for combat range definition.)

RECONNAISSANCE RADIUS PROBLEM

WARM-UP TAKE-OFF (included in reserve)	CLIMB (A) to 10,000' at NRP	CRUISE-OUT at speed for max. range	CLIMB (B) from 10,000' to 20,000' at NRP	PHOTO RUN cruise for one hour at NRP, no distance gained	DESCEND to 10,000', no fuel used, no distance gained	CRUISE-IN at speed for max. range	RESERVE 10% of take-off fuel carried whole distance

RADIUS = CLIMB (A) + CRUISE-OUT + CLIMB (B) = CRUISE-IN

Reconnaissance radius is reduced 4 nautical miles for each minute of military power.

Addition of wing and tail de-icer boots reduces maximum range 1.7% and reduces $V_{max.}$ by 6 knots at airplane critical altitude.
