

STANDARD AIRCRAFT CHARACTERISTICS

P2V-5 "NEPTUNE"

LOCKHEED

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

1 MARCH 1955

P2V-5 (R-3350-30WA)

POWER PLANT

NO. & MODEL....(2) R-3350-30WA
 MFR.....Wright
 SUPERCH.....1 Stage, 2 Speed
 RED. GEAR RATIO.....0.4375:1
 PROP. MFR.....Ham. Std.
 PROP. BL. DES. NO.....2J17C3-36S
 NO. BL./DIA.....4/14" - 2"

RATINGS

	<u>BHP</u>	<u>RPM</u>	<u>ALT.</u>
T.O.	3250	2900	S.L.
MIL.	3250	2900	S.L. to 3400'
	2550	2600	11400'-15400'
NORM.	2600	2600	S.L. to 6500'
	2450	2600	9600' to 16600'

SPEC. NO. N-856-A

ORDNANCEGUNS

<u>NO.</u>	<u>SIZE</u>	<u>LOCATION</u>	<u>RDS.</u>
ASW			
2	.50 cal.	Deck Turret	800
MINE LAYER			
2	20mm	Nose	800
2	20mm	Tail	800

FIRE CONTROL

MK. 18 Mod. 6

BOMBS AND ROCKETS

16-Aero 14B-2 rocket launcher
 (max. cap. 500 lbs. each) on
 alternate outer wing slats.
 Torpedoes, Mines and Bombs
 carried in the fuselage.

Max. Load Capacity 12,000 lbs.

MISSION AND DESCRIPTION

The P2V-5 is designed for use as a long range anti-submarine airplane. It's secondary tactical mission is mine laying.

The airplane carries a crew of nine and features Fowler wing flaps, "varicam" stabilizer, wing and tail surface thermal anti-icing, electrical propeller deicing, droppable wing tip tanks, radar and searchlight equipment. As an alternate mine laying airplane, the MAD tail and observer nose are replaced by a 20 mm nose and tail turrets.

The P2V-5 has an all metal semi-monocoque fuselage with wings of conventional two-spar dural construction. This airplane is basically a P2V-4 modified to incorporate the R-3350-30WA engine and wing tip tanks of new design and capacity.

DEVELOPMENT

First Flight.....December 1951
 Service Use.....September 1951

DIMENSIONS

WING
 AREA.....1,000 sq. ft.
 SPAN.....104' - 0"
 MAC.....10' - 6"
 LENGTH.....91' - 2"
 HEIGHT.....28' - 1"
 TREAD.....25' - 11"
 PROP. GRD. CLEARANCE...0' - 9"

WEIGHTS

<u>LOADINGS</u>	<u>LBS.</u>	<u>L.F.</u>
EMPTY.....	43,000	
BASIC.....	44,900	
DESIGN.....	67,500	2.67
COMBAT (ASW) ...	61,320	2.95
MAX. T.O.....	80,000	2.25
MAX. OVERLOAD ..	62,000	
LANDING		

All weights are actual

FUEL AND OIL

<u>NO. TANKS</u>	<u>GALS.</u>	<u>LOCATION</u>
4	2800	Wing
2	400	Wing Tip
2	700	Bomb Bay
FUEL GRADE.....	115/145	
FUEL SPEC.....	MIL-F-5572	

OIL

CAPACITY (GALS.).....165
 GRADE.....1100
 SPEC.....MIL-L-6082A

ELECTRONICS

Interphone.....AN/AIO-5B
 Radio Transm.....AN/ART-13
 Comm. Rec.....AN/ARC-5
 Liaison Rec.....AN/ARP-15 A
 UHF.....AN/ARC-27
 VHF.....(P.S.I.) AN/ARC-1
 Indicator.....AN/APA-81
 Direct Finder.....AN/APN-6
 Radio Altimeter.....AN/APN-22
 Marker Beacon.....AN/APN-12
 Loran.....AN/APN-70

(Continued on NOTE Page)

SERVICE

PERFORMANCE SUMMARY				
TAKE-OFF LOADING CONDITION		(1) ASW PATROL 2 MK-41 Torps.	(3) MINELAYER 8 Mines	(5) FERRY
TAKE-OFF WEIGHT	lb.	71,400	80,000	73,170
Fuel	lb.	19,200	18,793	23,400
Payload Torpedoes/Mines	lb.	2,400	8,000	None
Wing loading	lb./sq.ft.	71.4	80.0	73.2
Stall speed - power-off	kn.	95.0	100.0	96.0
Take-off run at S.L. - calm	ft.	2,700	3,560	2,850
Take-off run at S.L. 25 kn. wind	ft.	1,600	2,300	1,725
Take-off to clear 50 ft. - calm	ft.	3,600	4,760	3,790
Max. speed/altitude (A)	kn./ft.	273/17,500	255/17,500	271/17,500
Rate of climb at S.L. (A)	fpm	1,030	760	980
Time: S.L. to 10,000 ft. (A)	min.	10.5	15.1	11.2
Time: S.L. to 20,000 ft. (A)	min.	27.8	49.0	30.5
Service ceiling (100 fpm) (A)	ft.	23,200	20,000	22,100
Combat range	n.mi.	2,775	2,290	3,375
Average cruising speed	kn.	180	170	175
Cruising altitude(s)	ft.	1,500	1,500	1,500
Combat radius	n.mi.	1,110	1,120	--
Average cruising speed	kn.	180	170	--
Mission Time	hrs.	15.6	12.69	
COMBAT LOADING CONDITION		(2)	(4)	
COMBAT WEIGHT	lb.	61,320	64,480	
Engine power		Military	Military	
Fuel	lb.	10,080	7,520	
Combat speed/combat altitude	kn./ft.	266/1,500	258/S.L.	
Rate of climb/combat altitude	fpm/ft.	1,800/1,500	1,640/S.L.	
Combat ceiling (500 fpm)	ft.	22,500	20,900	
Rate of climb at S.L.	fpm	1,820	1,640	
Max. speed at S.L.	kn.	263	258	
Max. speed/altitude	kn./ft.	281/16,400	273/16,400	
LANDING WEIGHT	lb.	53,402	54,456	51,168
Fuel	lb.	1,202	1,249	1,398
Stall speed - power-off	kn.	82.3	83.0	81.0
Stall speed - with approach power	kn.	73.7	74.2	72.5

NOTES

REASON FOR REVISION: Flight test data on the P2V-5 airplane and incorporation of APS-20B radome.

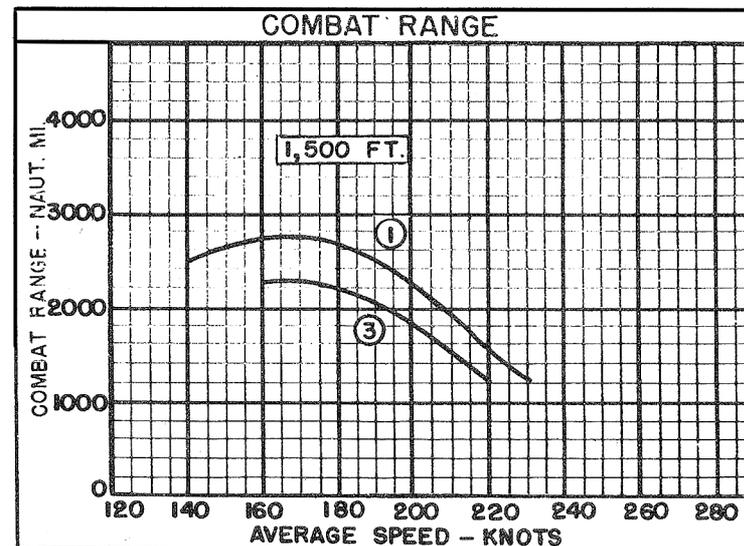
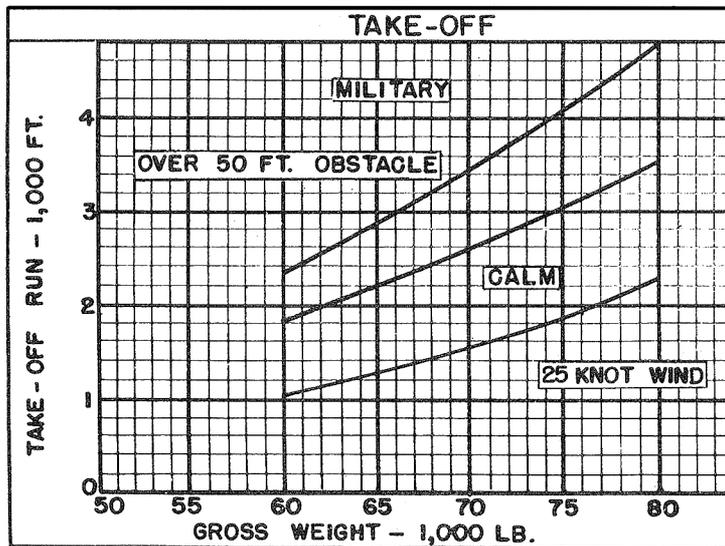
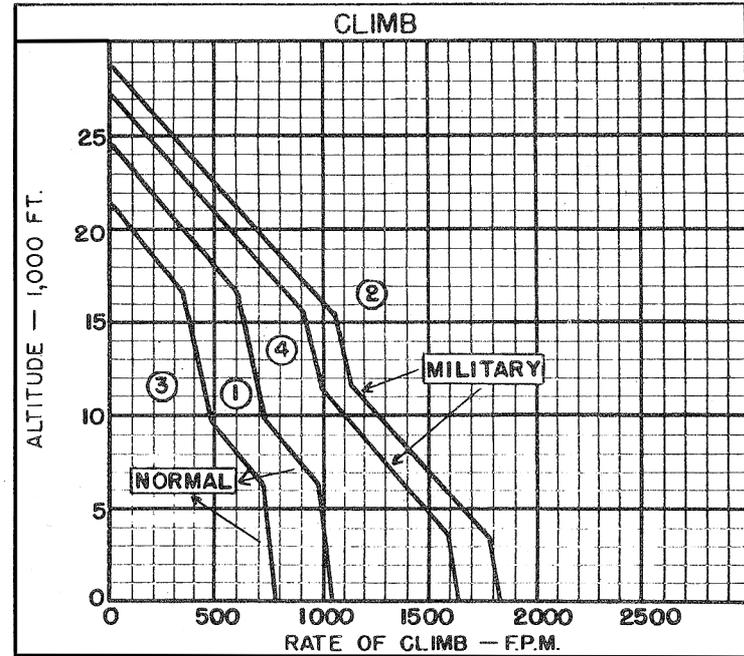
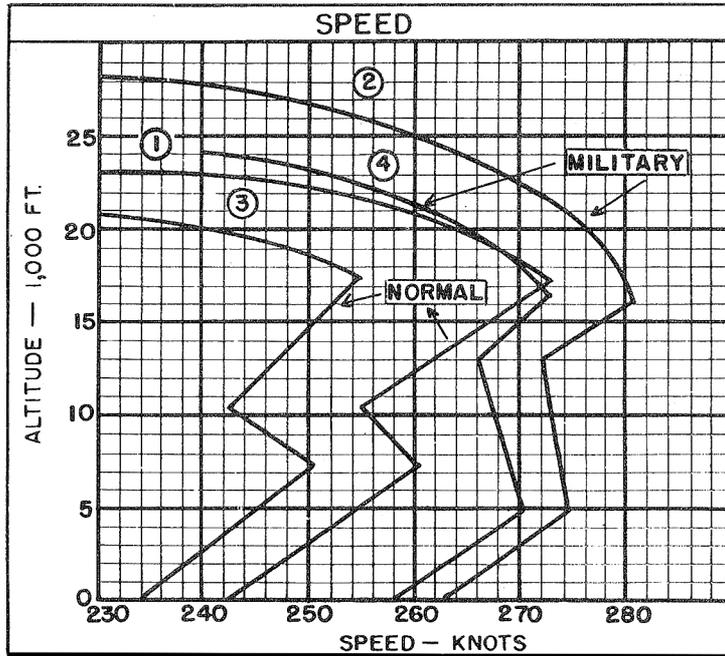
(A) Normal Rated Power

(B) Military Rated Power

Performance Basis: Calculations and contractor flight test data on the P2V-5 airplane.

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NAVAER-1335D (Rev. 10-51)



○ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics, NAVAER 1935E (REV. 2-50)

1 MARCH 1955

P2V-5 (R-3350-30WA)

SERVICE

NOTES

ASW FIXED WING AIRCRAFT

Combat Radius = 40% of combat range at 1,500 ft. altitude.

MINE LAYER

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

CLIMB: To cruise altitude of 1,500 ft. at normal rated power.

CRUISE-OUT: At speed for long range at cruise altitude.

DESCEND: To sea level.

RUN-IN: 50 nautical miles at military rated power.

DROP MINES:

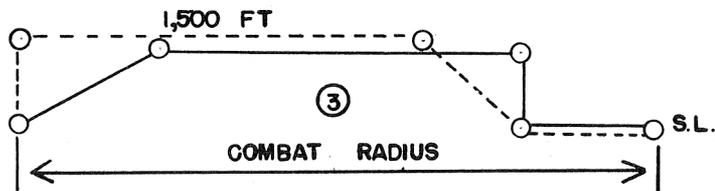
RUN-OUT: 50 nautical miles at military rated power.

CLIMB: To cruise altitude of 1,500 ft. at normal rated power.

CRUISE-BACK: At speed for long range at cruise altitude.

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

MISSION TIME = CLIMB + CRUISE-OUT + RUN-IN + RUN-OUT + CLIMB + CRUISE-BACK



Combat Radius (mine layer problem) is reduced approximately 6 nautical miles for each additional minute of military power operation.

Rate of climb at sea level, military rated power, one engine inoperative (propeller feathered), flaps and gear-up. (ASW Configuration)

<u>Gross Weight - lbs.</u>	<u>Rate-of-climb - ft./min.</u>
56,000	545
67,500	270
70,000	220
76,000	100

○ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics NAVAR 1335F (REV. 1-49)

NOTES

ELECTRONICS (Continued)

IFF Equip.....AN/APX-6
 AN/APX-7
 (in planes APS 20B & C only)
 ECM.....AN/APA-9B
 AN/APA-11

Sonobuoy Rec.....AN/ARR-26
 Grd. Pos. Ind.....AN/APA-57B
 M.A.D.....AN/ASQ-8
 D.M.N.....AN/ARN-21
 Search Radar.....AN/APS-20B

ECM-Dir. Find.....AN/APA-69
 Omn.-Dir. Find.....AN/ARN-14A
 (P.S.I.) AN/APS-20C-(P.S.I.) AN/APS-31
 AN/APS-31 will be back fitted with
 AN/APS-20B
 Radar Bomb.....AN/APS-16

PERFORMANCE SUMMARY (Continued)

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

 Oil capacity consists of 120 gals. in wing tanks and 36 gals. in fuselage tank. Later P2V-5 (R-3350-30WA)
 models have total wing tank oil capacity of 165 gals. and no fuselage oil tanks.
