

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

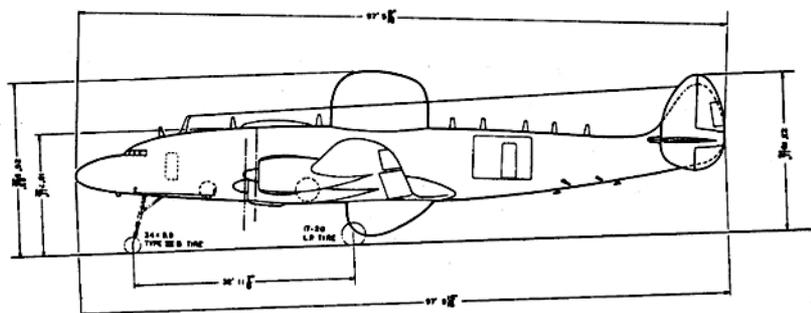
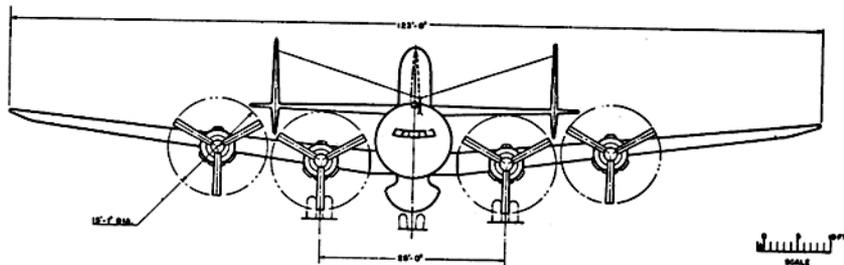
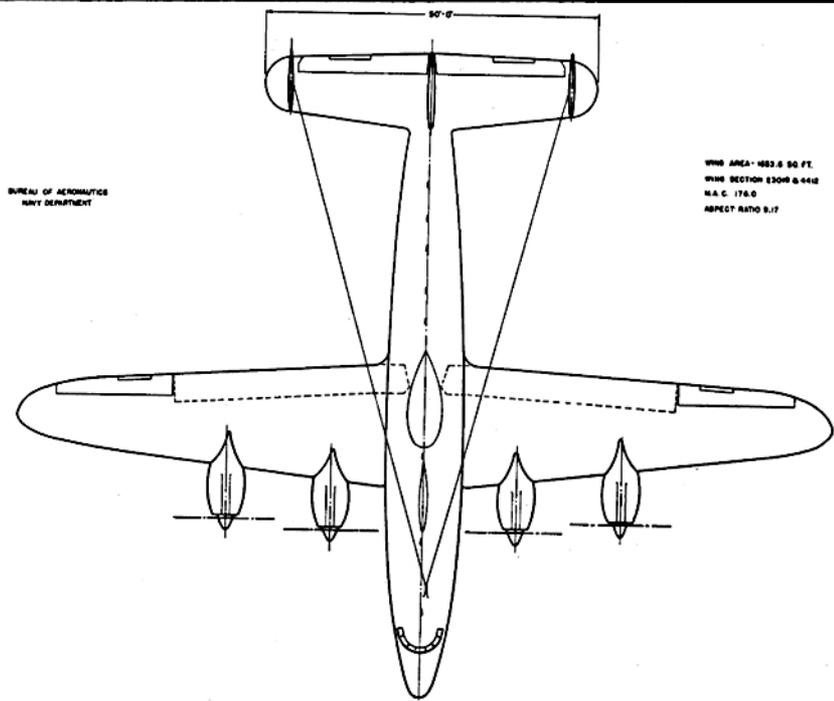
STANDARD AIRCRAFT CHARACTERISTICS

PO-1W "CONSTELLATION"

LOCKHEED

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 483.8 SQ. FT.
WING SECTION 230W B.442
M.A.C. 178.0
ASPECT RATIO 9.17



DESCRIPTIVE ARRANGEMENT

MISSION AND DESCRIPTION

The PO-1W airplane is a special search airplane instrumented to perform the functions of a combat information center (CIC), including fighter direction and airborne early warning.

It is a development of the commercial Lockheed "Constellation" Model 749 with the addition of complete CIC equipment. Service use is estimated late 1950.

The crew consists of a flight crew of five (pilot, co-pilot, flight engineer, navigator, radio operator) and ten CIC crew (CIC officer, four control officers, plotter, talker, RCM operator, height finder, radar operator). Provisions are made for carrying a relief crew of sixteen men. Structure is conventional. Modified Fowler-type flaps are fitted.

DIMENSIONS

WING AREA.....1,654 sq. ft.
SPAN.....123' - 0"
LENGTH.....97' - 10"
HEIGHT.....26' - 6"
TREAD.....28' - 0"
M.A.C.....14' - 8"
PROP. CLEAR.....2' - 2"

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	67,285.....	
BASIC.....	69,923.....	
DESIGN.....	107,000.....	2.5
MAX.T.O.....	110,000.....	2.4
MAX.LAND.....	105,000.....	

All weights are actual.

FUEL AND OIL

Gals.	No. Tanks	Location
1,130	2	Wing
3,110	2	Wing
1,580	2	Wing

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

OIL

CAPACITY (Gals.).....216
GRADE.....1120
SPEC.....AN-O-8

ORDNANCE

NONE

POWER PLANT

NO. & MODEL....(4) YR-3350-75
MFR.....W.A.C.
SUPERCH.....1 Stage, 2 Speed
PROP. GEAR RATIO.....0.4375
PROP. DES. NO.....2F17K3-24S
PROP. MFR.....Ham. Std.
NO. BL./DIA.....3/15'-1"

RATINGS

Bhp @ Rpm @ Alt.

T. O.	2,500	2,800	3,100'
	1,900	2,600	15,700'
NORM.	2,100	2,400	4,400'
	1,800	2,400	16,000'

SPEC. NO. 749-E

ELECTRONICS

VHF.....AN/ARC-1A,-28
COMM. TRANS.....AN/ART-13
HF RECEIVER.....AN/ARR-15A
LIAISON TRAN. & REC..AN/ARC-5
ADF RECEIVER.....AN/ARN-7
MARKER BEACON.....AN/ARN-8
VHF.....AN/ARR-2A
ALTIMETER—LOW ALT...AN/APN-1
ALTIMETER—HIGH ALT..SCR-718C
LORAN.....AN/APN-4
SEARCH RADAR...AN/APS-20,-20A
CIC IND. EQUIP.....AN/APA-56
GRD. POSIT. IND.....AN/APA-57
RADAR RELAY REC.....AN/ARR-27
IFF.....AN/APX-6,-13A
RCM REC.....AN/APR-4,-9
PANORAMIC ADAPT..AN/APA-10,-38
PULSE ANALYZER.....AN/APA-64A
RCM REC.....AN/ARR-5,-7
RADAR RELAY TRANS...AN/ART-28
(Service Installed)



PERFORMANCE SUMMARY					
LOADING CONDITION		(1) NORMAL SEARCH	(2) SPECIAL SEARCH		
TAKE-OFF WEIGHT	lbs.	107,000	110,000		
Fuel	lbs.	31,056	34,056		
Bombs	lbs.	--	--		
Wing/Power Loading (A)	lbs/sq.ft;lbs/bhp.	64.8/14.9	66.6/15.3		
Stall Speed--Power off	kn.	90.9	92.2		
Stall Speed--Power off - No Fuel	kn.	77.2	77.2		
Stall Speed--Power on	kn.	80.5	81.5		
Maximum Speed/Alt (B)	kn/ft.	269/18,600	266/18,600		
Take-off Distance, deck -- calm	ft.	2,480	2,750		
Take-off Distance, deck	kn. ft.	--	--		
Take-off Distance, Airport	ft.	4,440	4,810		
Rate of climb -- sea level (B)	ft/min.	1,050	1,000		
Service Ceiling (B)	ft.	22,000	21,500		
Time-to-climb 10,000 ft. (B)	min.	11.1	11.9		
Time-to-climb 20,000 ft. (B)	min.	29.5	32.5		
Combat Range/V av 10,000 ft.	n.mi./kn.	2,690/165	2,930/165		
Combat Radius/V av	ft. n.mi./kn.	--	--		
Time-on-Station 10,000/20,000 ft./hrs.		5.5/4.3	7.2/5.8		
LOADING CONDITION					
GROSS WEIGHT	lbs.				
Engine power					
Fuel	lbs.				
Bombs/Tanks					
Max. speed at sea level	kn.				
Max. speed/Alt	kn/ft.				
Combat speed/Alt	kn/ft.				
Rate of climb SL	ft/min.				
Ceiling for 500 fpm R/C	ft.				
Time-to-climb/Alt.	min/ft.				

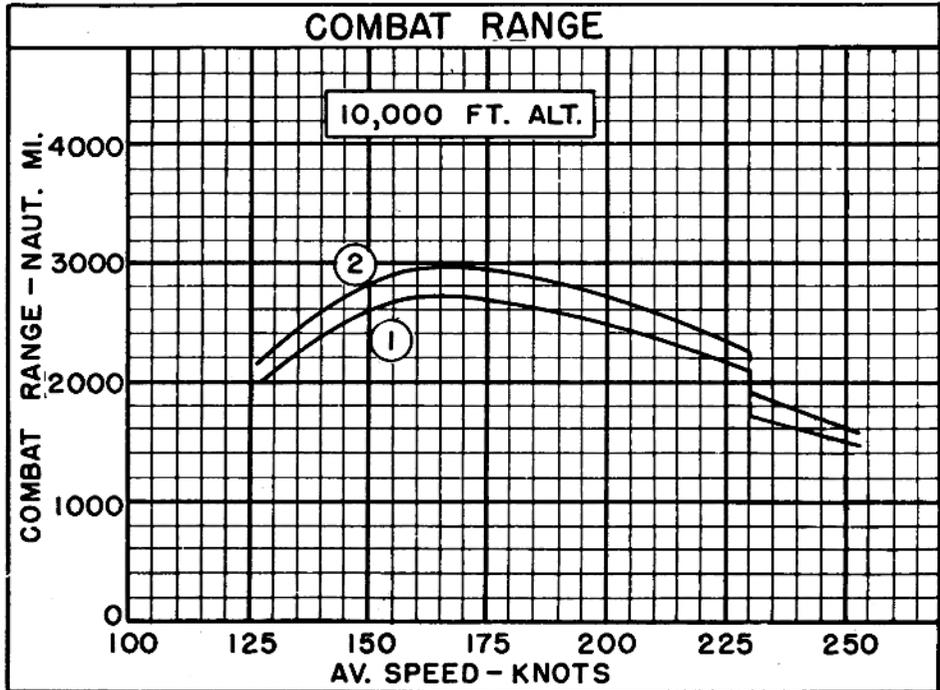
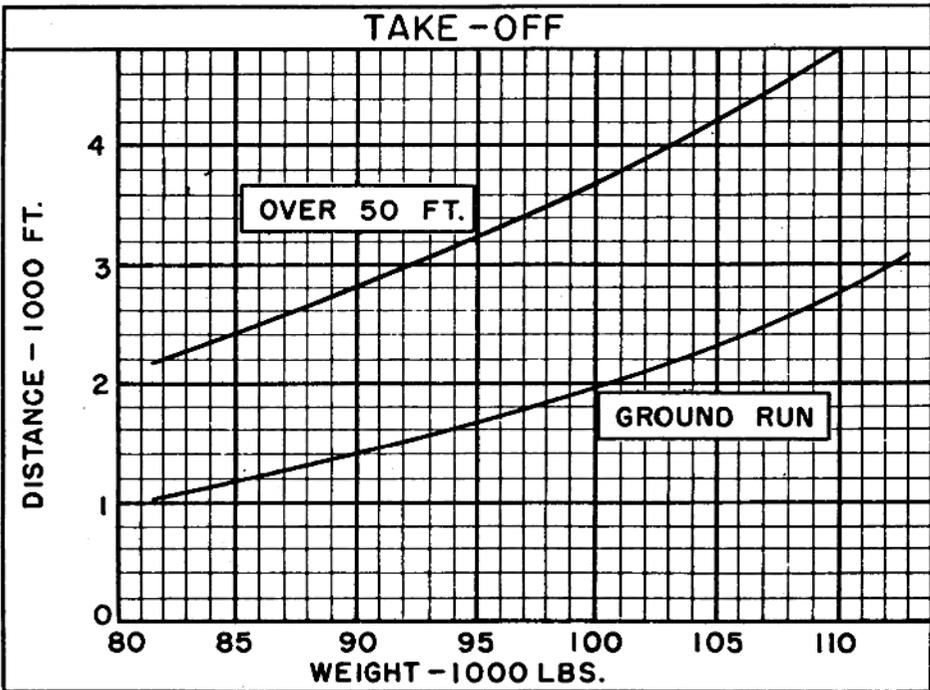
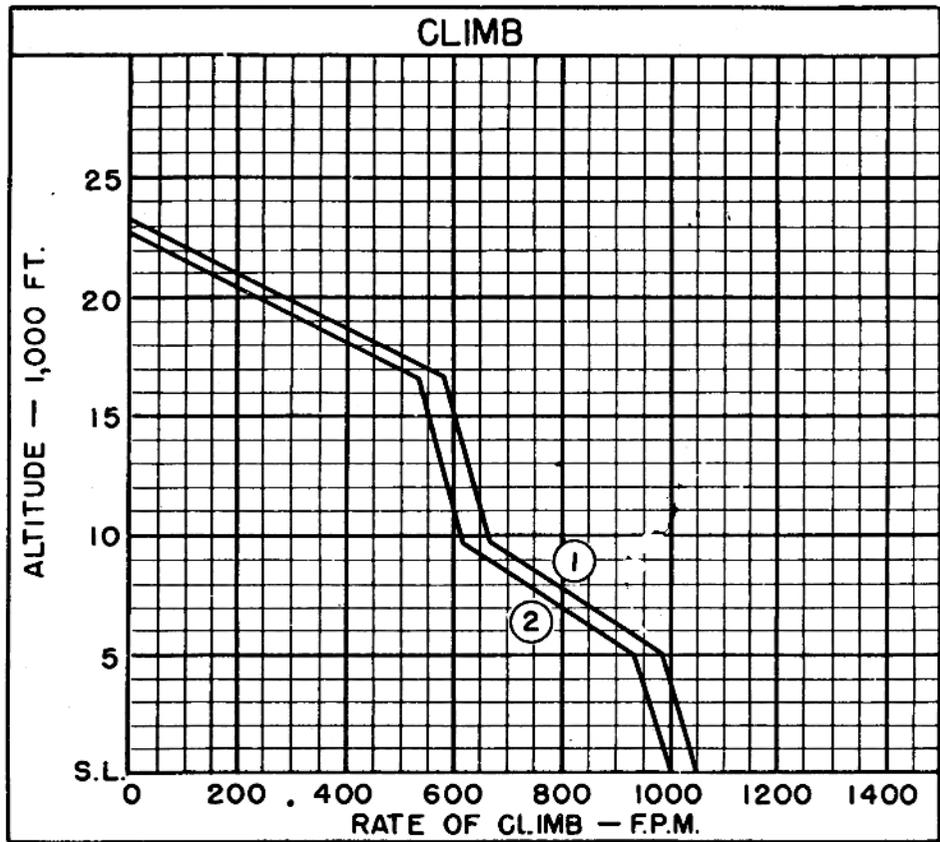
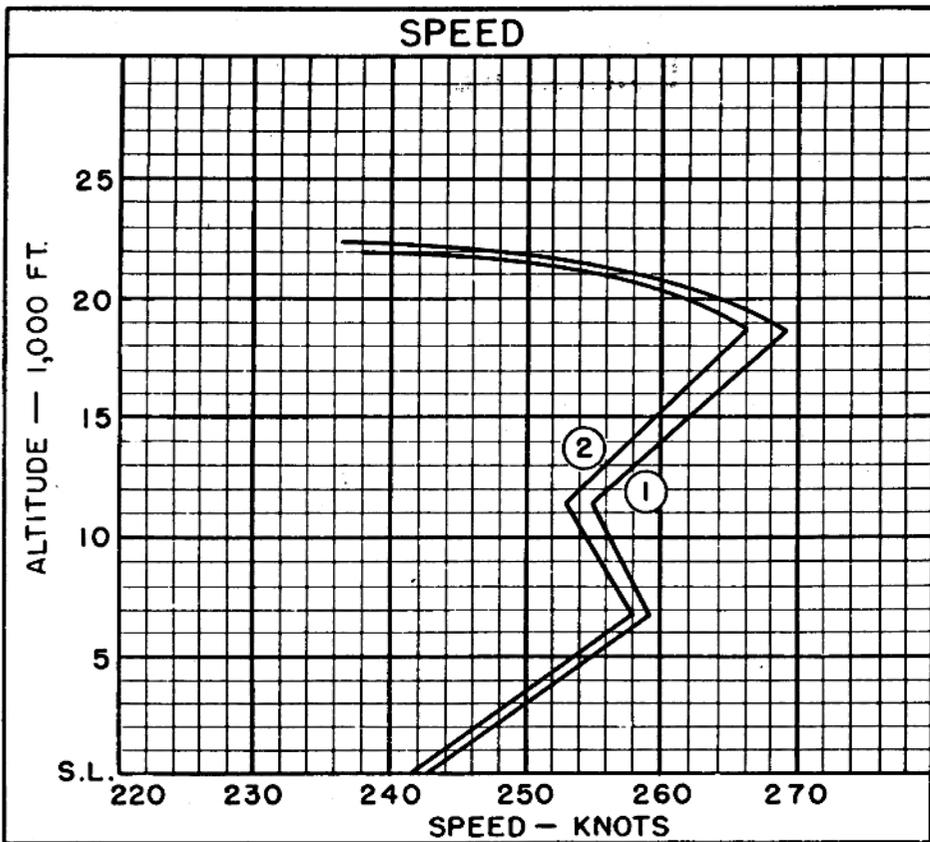
NOTES

(A) BHP at Maximum Critical Altitude

(B) Normal BHP

Performance is based on flight test of "Constellation" airplane. Range and time-on-station are based on flight test fuel consumption increased by 5%.

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



○ LOADING CONDITION COLUMN NUMBER

NOTES

TIME-ON-STATION PROBLEM

WARM-UP
TAXI
TAKE-OFF
 10 min. Nor.
 Power, All
 Engines

CLIMB
 to stated
 alt., Norm.
 Power, All
 Engines

CRUISE-OUT
 1,000 n. mi.
 at V for max.
 range

ON STATION
 for () hours
 at V for max.
 endurance, or
 min. pract.
 speed, all
 engines

CRUISE-BACK
 1,000 n. mi.
 at V for max.
 range, at same
 alt. as cruise-
 out

RESERVE
 2 hours at
 V for max.
 range, all
 engines, at
 1,500 ft.