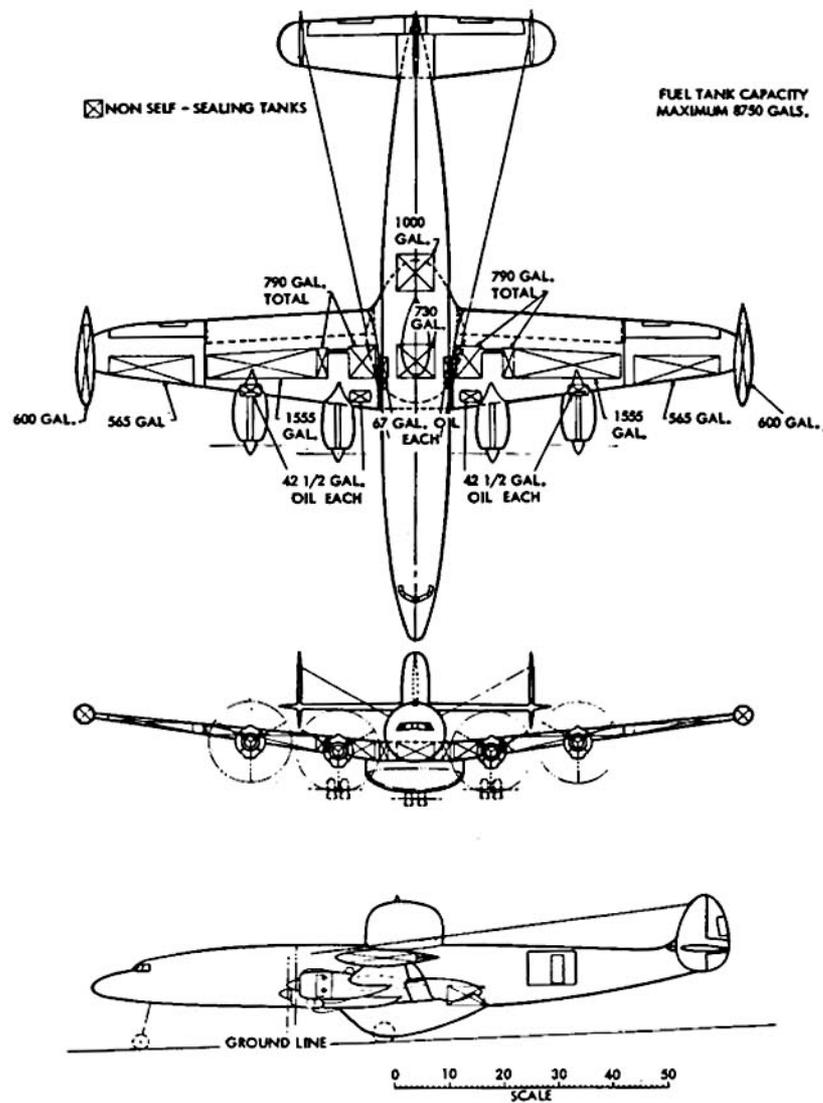
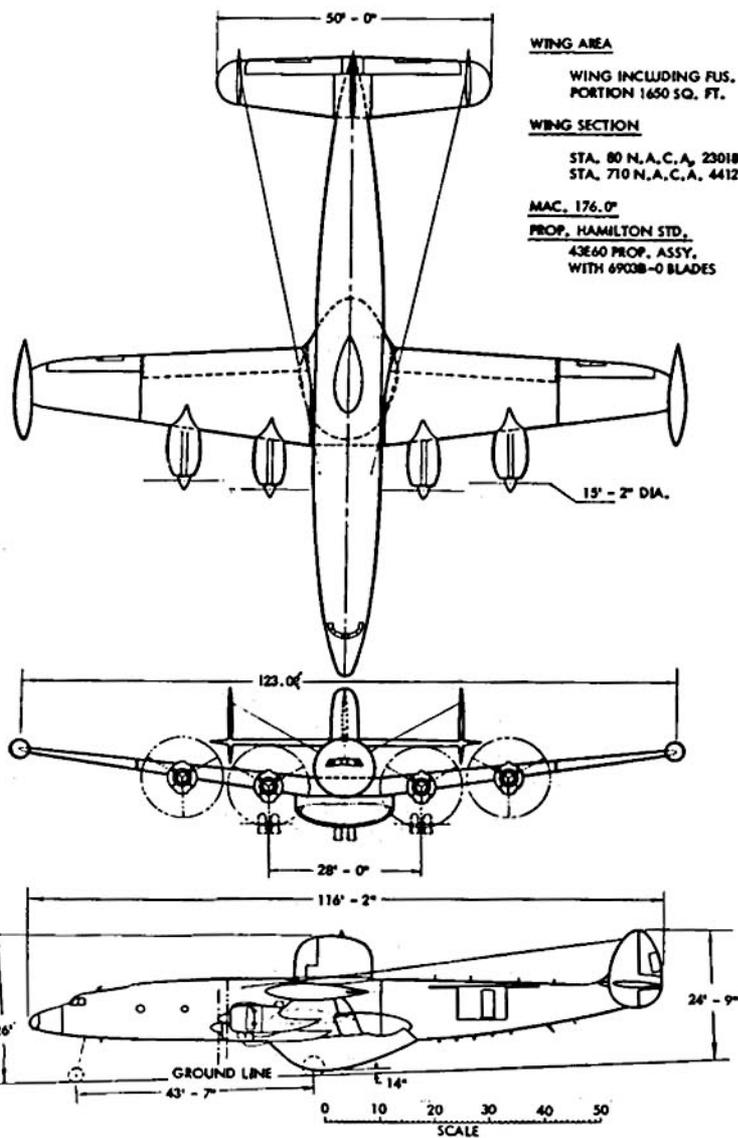


# STANDARD AIRCRAFT CHARACTERISTICS

## EC-121K CONSTELLATION

LOCKHEED



## POWER PLANT

NO. and MODEL.....(4) R-3350-34  
 MFR.....W.A.C.  
 SUPERCHARGE.....1 Stage, 2 Speed  
 RED. GEAR RATIO.....0.4375:1  
 PROP. MFR.....Hamilton Standard  
 PROP. DES. NO.....6903B-0  
 NO. BLDS/DIA.....3/15' - 2"

## RATINGS

	BHP	RPM	ALT.
T.O.	3,250	2,900	S.L. - 5,000'
	2,550	2,600	16,700'
NORM.	2,600	2,600	S.L.
	2,650	2,600	6,500'
	2,450	2,600	17,900'

SPEC. NO. N872A

## ORDNANCE

SEARCH RADAR.....AN/APS-20  
 RADAR INCL. EQUIP.....AN/APA-56  
 RADAR RELAY TRANS.....AN/ART-28  
 RADAR RELAY RECEIVER.....AN/ARR-27A  
 RADAR HEIGHT FINDER.....AN/APS-45  
 IFF INTERROG. RESP.....AN/APX-7  
 UHF DIRECTION FINDER.....AN/ARA-25  
 ECM RECEIVER.....AN/APR-9B  
 ECM PANORAMIC IND.....AN/ALA-2  
 RADAR INDICATOR GRP.....AN/APA-81  
 ECM SIGNAL ANALYZER.....AN/APA-74  
 ECM RECEIVER.....AN/APR-13  
 MARKER BEACON RECEIVER.....AN/ARN-12  
 RADAR ALTIMETER.....AN/APN-22  
 LORAN RECEIVER.....AN/APN-70  
 RADIO COMPASS.....AN/ARN-6  
 GLIDE SLOPE RECEIVER.....AN/ARN-18  
 VOR RECEIVER.....AN/ARN-14  
 NAVIGATION SET.....AN/ARN-21  
 IFF TRANSPONDER.....AN/APX-6(6B)  
 LF RECEIVER.....R-23A/ARC-5  
 HF RECEIVER.....AN/ARR-41  
 HF TRANSMITTER RECEIVER.....AN/ARC-38  
 UHF TRANSMITTER RECEIVER.....AN/ARC-27  
 FLIGHT CREW ICS.....AN/AIC-10  
 EMERGENCY KEYS.....AN/ARA-26  
 VHF TRANSMITTER RECEIVER.....AN/ARC-1  
 CODER GROUP.....AN/APA-89

## MISSION AND DESCRIPTION

The WV-2 is a land based special search and airborne early warning airplane. As a Combat Information Center, the WV-2 provides an airborne platform for the direction of tactical aircraft.

The configuration features Fowler flaps, control surface boosters, rubber de-icing boots and a fully pressurized fuselage.

The WV-2 airframe is a military adaption of the commercial Lockheed model 1049 Super constellation. It carries a crew of 28.

## DEVELOPMENT

First Flight.....June 1953  
 Service Use.....April 1955

## DIMENSIONS

WING  
 AREA.....1,650 Sq. Ft.  
 SPAN.....123' - 5"  
 MAC.....14' - 8"  
 SWEEPBACK (L.E.).....7.5°  
 LENGTH.....116' - 2"  
 HEIGHT.....27' - 0"  
 TREAD.....28' - 0"  
 PROP. GRD. CLEARANCE.....20"

## WEIGHTS

LOADINGS	LBS.	L.F.
EMPTY.....	83,671	
BASIC.....	86,423	
DESIGN.....	130,000	2.50
COMBAT.....	116,010	
MAX. T.O.....	156,500	2.25
MAX. LANDING.....	122,000	

All Weights are Actual

## FUEL AND OIL

GALS.	NO. TANKS	LOCATION
6,550	7	Wing
1,200	2	Tip Tanks
1,000	1	Fuselage

FUEL GRADE.....115/145  
 FUEL SPEC.....applicable..MIL-F-5572

## OIL

CAPACITY (gals).....304  
 GRADE.....120  
 SPEC.....applicable..MIL-O-6082

## PERSONNEL

CREW (NORMAL).....28  
 ACTIVE CREW STATIONS.....16  
 Pilot, Co-Pilot, Flt. Engr., Nav.,  
 Radio Oper., CIC Officer, 5 Control  
 Officers, DRT Operator, 2 ECM Oper.,  
 HT. Finder Oper., RADAR Oper.  
 OTHER CREW PLACES  
 12 Day or 14 Sleeping including,  
 Talker, 3 Technicians, 7 Relief Crew  
 (Co-Pilot, Nav., Flt. Engr., Radio  
 Oper., 3 Control Officers) and  
 Porter.

## PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) NORMAL SEARCH	(3) OVERLOAD SEARCH	(5) FERRY		
TAKE-OFF WEIGHT lb.	130,000	148,560	143,500		
Fuel lb.	34,960	52,500	52,500		
Payload lb.	--	--	--		
Wing loading lb./sq.ft.	78.7	90.0	87.0		
Stall speed - power-off kn.	99.0	105.0	104.0		
Take-off run at S.L. - calm (A) ft.	3,900	6,150	5,450		
Take-off run at S.L. -- kn. wind ft.	--	--	--		
Take-off to clear 50 ft. - calm (A) ft.	5,000	8,050	7,050		
Max. speed/altitude (B) kn./ft.	285/19,300	268/19,300	273/19,100		
Rate of climb at S.L. (B) fpm.	1,060	760	830		
Time: S.L. to 10,000 ft. (B) min.	10.8	15.6	13.8		
Time: S.L. to 20,000 ft. (B) min.	30	55	45		
Service ceiling (100 fpm) (B) ft.	21,900	18,900	19,500		
Search range n.mi.	2,580	3,590	3,850		
Average cruising speed kn.	208	214	212		
Cruising altitude(s) ft.	10,000	10,000	10,000		
Search radius (C) n.mi.	1,245	1,790			
Average cruising speed kn.	209	214			
Time on station at 1000 n.mi.) S.L. hrs./hrs.	2.7/12.0	9.0/18.3			
radius/Mission time ) 10,000 hrs./hrs.	2.7/12.4	8.3/18.0			
18,000 hrs./hrs.	--	6.6/16.3			
20,000 hrs./hrs.	1.9/11.6	--			
COMBAT LOADING CONDITION	(2)	(4)	(6)		
COMBAT WEIGHT lb.	116,010	127,560	122,560		
Engine power	Normal	Normal	Normal		
Fuel lb.	20,980	31,500	31,500		
Combat speed/combat altitude kn./ft.	277/10,000	273/10,000	274/10,000		
Rate of climb/combat altitude fpm/ft.	1,000/10,000	790/10,000	850/10,000		
Combat ceiling (500 fpm) ft.	2,000	17,700	18,600		
Rate of climb at S.L. fpm.	1,350	1,120	1,200		
Max. speed at S.L. kn.	254	250	253		
Max. speed/altitude kn./ft.	292/19,500	285/19,100	288/19,100		
LANDING WEIGHT lb.	98,540	99,660	94,440		
Fuel lb.	2,500	3,500	3,400		
Stall speed - power-off kn.	86	86	84		
Stall speed - with approach power kn.	76	76	74		

## NOTES

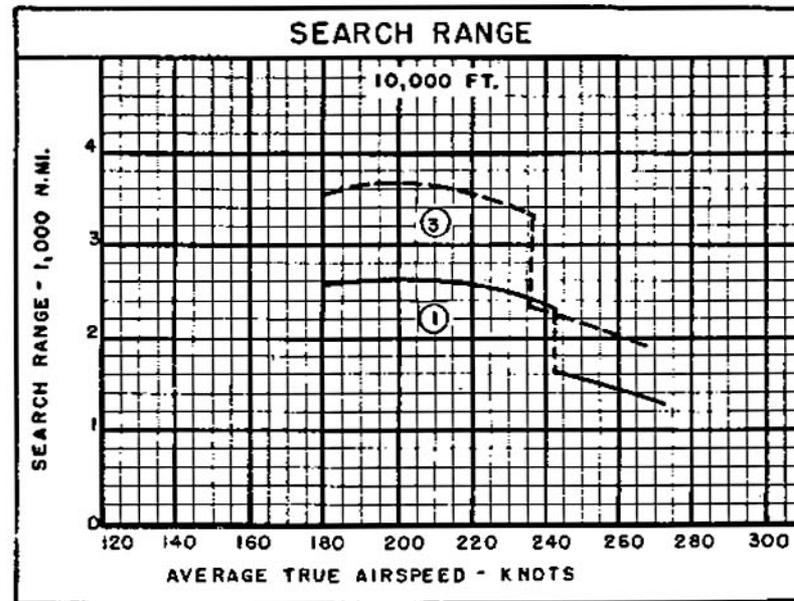
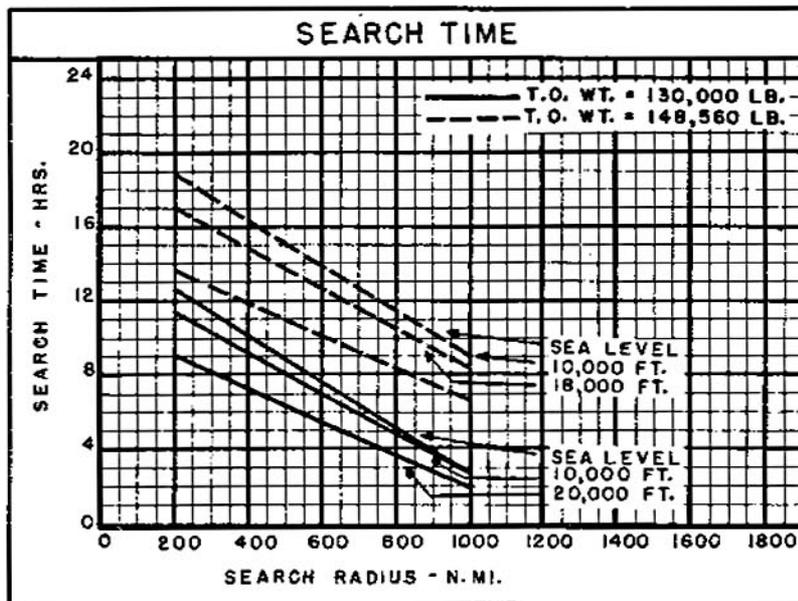
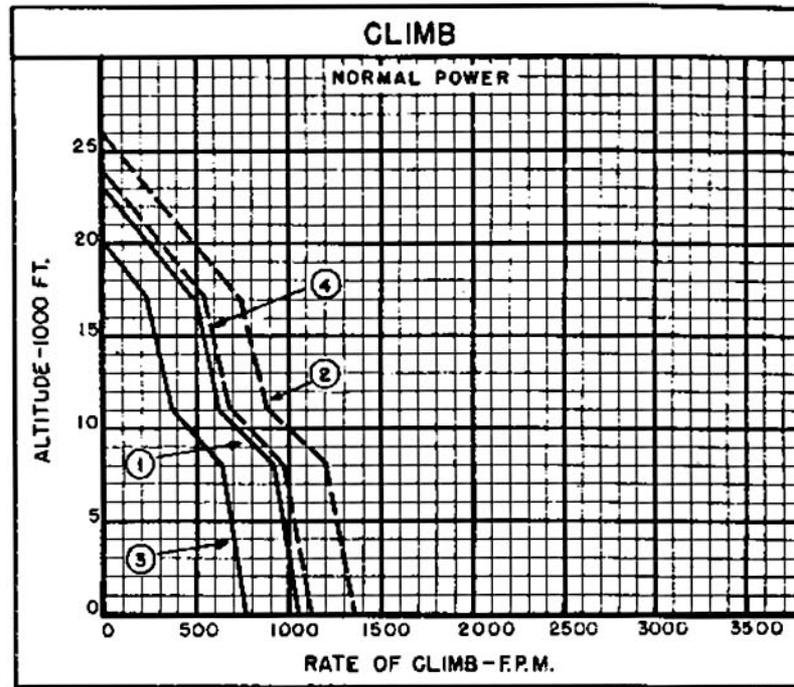
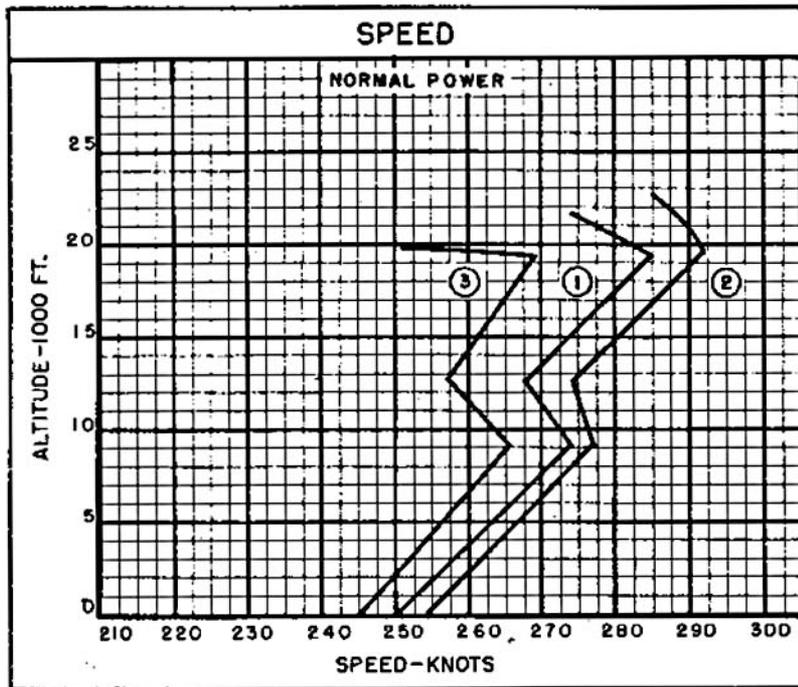
(A) Take-Off Power.

(B) Normal Power.

(C) At 10,000 feet with zero search time on station.

PERFORMANCE BASIS: Performance is based on WV-2 flight test data.

RANGE AND RADIUS are based on WV-2 flight test fuel consumption increased by 5%.



○ LOADING CONDITION COLUMN NUMBER

# NOTES

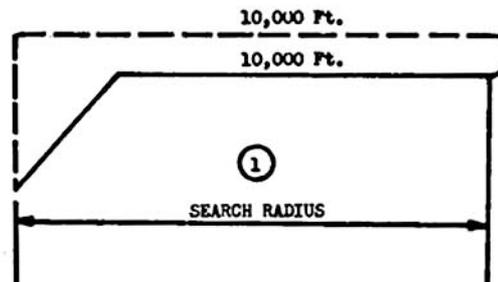
## SEARCH RADIUS PROBLEM

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal rated power at sea level.  
 CLIMB: On course to cruise altitude of 10,000 feet at normal rated power.  
 CRUISE-OUT: To a 1,000 nautical mile radius point at long range airspeeds.  
 CLIMB or DESCEND: To search altitude. Fuel used and distance gained in climb but not in descent.  
 SEARCH: At search altitude at maximum endurance speeds.  
 RETURN: To radius point at the end of search. Fuel is used and distance gained in climb but not in descent.  
 CRUISE-BACK: At 10,000 feet at speeds for long range.  
 RESERVE: Fuel allowance for 2 hours at long range airspeeds at 1,500 feet.

-----

## RANGE PROBLEM

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal rated power at sea level.  
 CLIMB: On course to cruise altitude of 10,000 feet at normal rated power.  
 CRUISE-OUT: At long range airspeeds at 10,000 feet.  
 RESERVE: Fuel allowance for 30 minutes at sea level at maximum endurance speed plus 5% of the initial fuel load.



No Loiter -  
 (Profile same for other than  
 basic mission except for climbing  
 or descending to loiter altitude  
 and loiter.)

○ LOADING CONDITION COLUMN NUMBER