



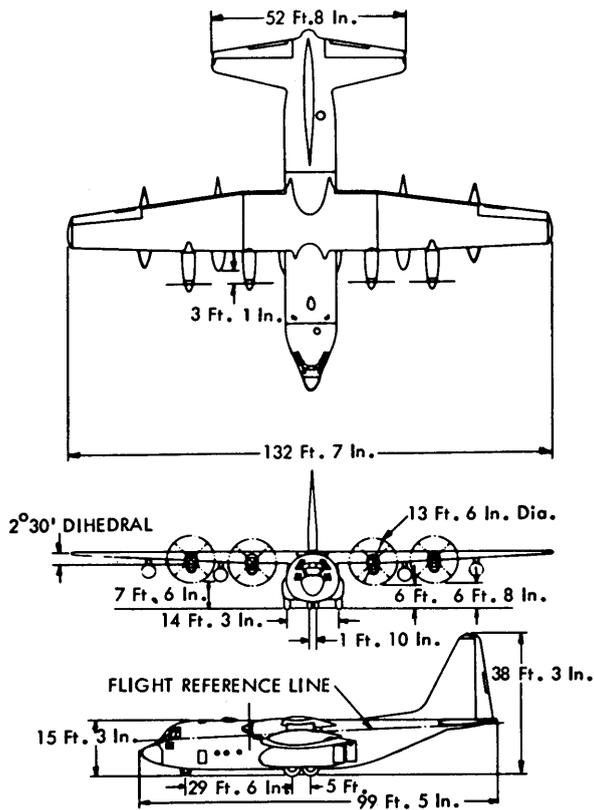
# STANDARD AIRCRAFT CHARACTERISTICS

## KC-130R HERCULES

**LOCKHEED**

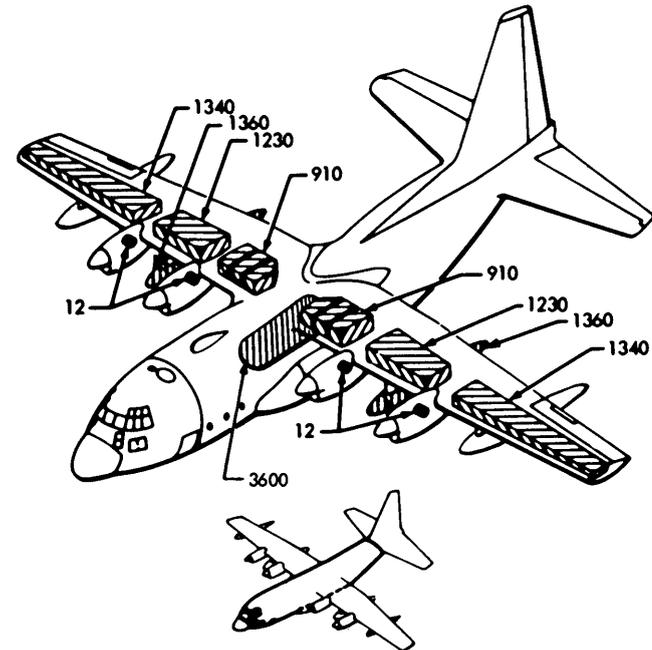
NOTE:

ALL INQUIRES CONCERNING DATA  
IN THIS CHART SHOULD BE DIRECTED  
TO NAVAIR, CODE AIR-53012



WING AREA . . . . . 1745.5 SQ. FT  
 ASPECT RATIO. . . . . 10.09  
 MAC. . . . . 164.5 in.

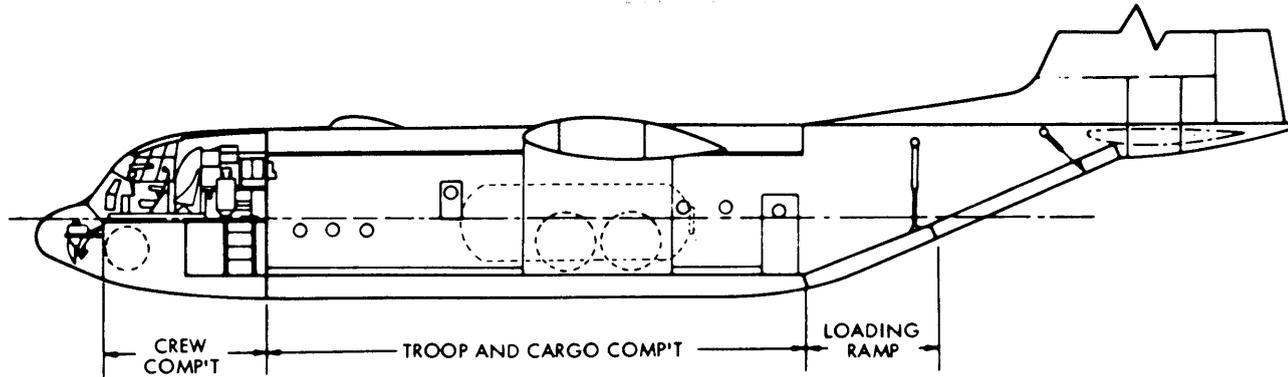
WING SECTION  
 (ROOT) . . . . . NACA 64A318  
 (TIP) . . . . . NACA 64A412



FUEL (GAL)

PRESSURIZED AREA

OIL (GAL)



POWER PLANT	MISSION AND DESCRIPTION	WEIGHTS																																																
<p>No. &amp; Model.....(4) T56-A-16 MFG.....Allison Engine Spec. No.....732 Type.....Axial Red. Gear Ratio.....0.0739 Tail Pipe.....Fixed Area Prop. MFR.....Hamilton Stand. Blade Design No.....A-7111D-2 Prop.DIA.....13.5' No. Blades.....4</p> <p style="text-align: center;">ATO</p> <p>No.&amp;Model.....(8)14DS-1000 MFR.....Aerojet Weight(Loaded).....200 Lb. Each</p> <p style="text-align: center;"><b>RATINGS</b></p> <table border="1"> <thead> <tr> <th>S.L.S.</th> <th>ESHP</th> <th>SHP</th> <th>LB</th> <th>RPM</th> <th>MIN</th> </tr> </thead> <tbody> <tr> <td>*T.O.</td> <td>4910</td> <td>4591</td> <td>797</td> <td>13820</td> <td>5</td> </tr> <tr> <td>*MIL.</td> <td>4680</td> <td>4368</td> <td>781</td> <td>13820</td> <td>30</td> </tr> <tr> <td>*NOR.</td> <td>4365</td> <td>4061</td> <td>760</td> <td>13820</td> <td>CONT.</td> </tr> </tbody> </table> <p>*CURRENTLY LIMITED TO 4200PSHP BASED ON AIRPLANE STRUCTURAL LIMITS.</p>	S.L.S.	ESHP	SHP	LB	RPM	MIN	*T.O.	4910	4591	797	13820	5	*MIL.	4680	4368	781	13820	30	*NOR.	4365	4061	760	13820	CONT.	<p style="text-align: center;">A. F. EQUIVALENT KC-130R</p> <p>The mission of the KC-130R is that of a combination transport airplane and inflight refueler. As a transport, the airplane is capable of conventional or aerial delivery of personnel or cargo. The aircraft is capable of carrying 92 combat troops or 64 paratroops with equipment. The normal crew is composed of pilot, co-pilot, flight engineer, navigator and radio operator/loadmaster.</p> <p>In the inflight refueling configuration, the aircraft is equipped with wing-mounted refueling pods and a 3600-gallon fuel tank in the cargo compartment. The refueling pods and fuselage fuel tanks are removable.</p> <p>The aircraft is an all-metal, high-wing, long-range, land-based monoplane. Features include an integral cargo ramp and door; crew and cargo compartment pressurization; ground and inflight air conditioning; thermal anti-icing system for the leading edge of the wing and empennage; single point refueling system; and E-4 autopilot.</p> <p>The aircraft is equipped with four flaps, consisting of an outboard and inboard flap in each wing. The flaps are of the lockheed fowler, high-lift type in which the flap motion is a combination of an aft movement to increase wing area and a downward tilting movement to alter the airfoil section to increase lift and drag.</p> <p>The KC-130R is designed to take off and land on improved runways. Provisions exist for using externally mounted ATO units to provide additional thrust for take-off.</p>	<table border="1"> <thead> <tr> <th>LOADING</th> <th>LBS</th> <th>L.F.</th> </tr> </thead> <tbody> <tr> <td>Empty (C).....</td> <td>74,095</td> <td>-</td> </tr> <tr> <td>Basic (C).....</td> <td>81,925</td> <td>-</td> </tr> <tr> <td>Design.....</td> <td>155,000</td> <td>2.5</td> </tr> <tr> <td>Combat.....</td> <td>108,471</td> <td>2.5</td> </tr> <tr> <td>Max.T.O.(Over-Load).....</td> <td>175,000</td> <td>2.25</td> </tr> <tr> <td>Max.T.O.(Normal).....</td> <td>155,000</td> <td>2.5</td> </tr> <tr> <td>Max.Land.....</td> <td>155,000</td> <td>-</td> </tr> </tbody> </table> <p>(5ft/Sec Rate of Descent)</p> <p>(C) Calculated</p>	LOADING	LBS	L.F.	Empty (C).....	74,095	-	Basic (C).....	81,925	-	Design.....	155,000	2.5	Combat.....	108,471	2.5	Max.T.O.(Over-Load).....	175,000	2.25	Max.T.O.(Normal).....	155,000	2.5	Max.Land.....	155,000	-
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<p>Radio Set (VHF Command) VHF-101 Radio Set (Liaison) (Two) HF-102 Interphone Equipment AN/A1C-18 Public Address System AN/A1C-13 Radio Compass (Auto.) (2 Each) AN/ARN-83 Marker Beacon Equipment Collins 51Z-4 Electronic Altimeter AN/APN-194(V) Radar Altimeter AN/APN-133A Radio VHR Nav. Set (VOR/ILS) 51RV2B Radio Receiving (TACAN)(TWO) AN/ARN-84 Stall Warning System Omega Nav. Set AN/ARN-99(V)2 Flight Direct. System (Two) AF Standard Radar Set AN/APN-59B Pressurization Kdt AN/ASQ-14 Interrogation Set, IFP AN/APX-76A Radio Set, UHF Command (Two) AN/ARC-159 IFF Set-AIMS AN/APX-72 Direction Finder An/ARA-50 Compass, Nav. (Two) Sperry C-12 Beacon Set, Radio URT-26(V)-14 Recording Set, Sound AN/ASH-22(V) Receiving-Decoding Group AN/ARA-63A VHF-FM Radio AN/ARC-131 Inertial Nav. System LTN-51 Radar Beacon Set AN/APN-202 True Airspeed System A/A24G-9</p>	<p style="text-align: center;"><b>DIMENSIONS</b></p> <table border="1"> <tbody> <tr> <td>Wing</td> <td></td> </tr> <tr> <td>Span.....</td> <td>132.6'</td> </tr> <tr> <td>Incidence (Root).....</td> <td>3°</td> </tr> <tr> <td>Incidence (TIP).....</td> <td>0°</td> </tr> <tr> <td>Dihedral (18% Chord).....</td> <td>2°30'</td> </tr> <tr> <td>Sweepback (18% Chord).....</td> <td>0°</td> </tr> <tr> <td>Area.....</td> <td>1745.5SQ.FT.</td> </tr> <tr> <td>Length.....</td> <td>99.47'</td> </tr> <tr> <td>Height.....</td> <td>38.4'</td> </tr> <tr> <td>Tread.....</td> <td>14.3'</td> </tr> <tr> <td>Prop.Ground Clearance.....</td> <td>6.3'</td> </tr> </tbody> </table>	Wing		Span.....	132.6'	Incidence (Root).....	3°	Incidence (TIP).....	0°	Dihedral (18% Chord).....	2°30'	Sweepback (18% Chord).....	0°	Area.....	1745.5SQ.FT.	Length.....	99.47'	Height.....	38.4'	Tread.....	14.3'	Prop.Ground Clearance.....	6.3'	<p style="text-align: center;"><b>CARGO</b></p> <p>Design Cargo Weight (155,000 Gross Weight) 28,186 LBS. @2.5G Limit Load Factor With 45858 LBS. Fuel (JP-5).</p> <p>Maximum Load Dimensions (Main Comp't) Length.....40.0' Width.....10.3' Height.....9.0'</p> <p>Opening for Cargo Loading (Main Loading Door) Width.....10.0' Height.....9.1' Height From Ground.....3.7'</p>																										
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## PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	DESIGN MAXIMUM PAYLOAD (1)	DESIGN MAXIMUM FUEL (3)	MAXIMUM OVERLOAD (5)	OVERLOAD REFUEL MISSION (7)	REFUEL MISSION (9)
TAKE-OFF WEIGHT lb.	155,000	155,000	175,000	167,325	155,000
Fuel internal/external (JP-5) lb./lb.	42983/2875	42983/17937 (1)	42983/1967	67463/17937 (1)	67463/5612
Payload lb.	28186	13274	48994	49273	38539
Wing loading lb./sq. ft.	88.8	88.8	100.3	95.8	88.8
Stall speed—power-off/take-off power (7) kn.	109/88	109/88	116/93	113/91	109/88
Take-off run at S.L.— calm/25 kn.wind (7) ft.	3540/2200	3540/2200	4760/3190	4290/2770	3540/2200
Take-off to clear 50 ft.— calm/25 kn.wind (7) ft.	5010/3510	5010/3510	6980/4940	6180/4370	5010/3510
Max. effort take-off — calm (7) ft.	2650	2650	3520	3160	2650
Max. speed/altitude (4) kn./ft.	323/16400	323/16400	291/23200	319/15700	323/16400
Rate of climb at S.L. (4) (8) fpm.	1870	1870	1492	1630	1870
Time: S.L. to 20,000 ft. (4) min.	16.6	16.6	23.0	20.4	16.6
Time: S.L. to 30,000 ft. (4) min.	28.9	28.9	27.7	28.2	28.9
Service ceiling (100 fpm) (4) ft.	27200	27200	23500	24400	27200
Combat range n.mi.	2841	4110	2390	—	—
Average cruising speed kn.	297	298	294	—	—
Cruising altitude(s) ft.	25400/33800	25400/37300	21300/29100	—	—
Combat radius/mission time n.mi./hr.	1348/9.30	1977/13.48	1133/7.89	1000/7.92	1000/7.91
Average cruising speed kn.	290	294	288	300	299
Fuel transferred lb.	—	—	—	49273	38539
COMBAT LOADING CONDITION	60% MISSION FUEL NO PAYLOAD (2)	60% MISSION FUEL NO PAYLOAD (4)	60% MISSION FUEL NO PAYLOAD (6)	60% MISSION FUEL NO PAYLOAD (8)	60% MISSION FUEL NO PAYLOAD (10)
COMBAT WEIGHT lb.	108471	117358	108026	133165	125770
Engine power	Military	Military	Military	Military	Military
Fuel lb.	27515	36552	26970	51240	43845
Combat speed/combat altitude kn./ft.					
Rate of climb/combat altitude fom/ft.					
Combat ceiling (500 fpm) ft.	34300	31200	34400	28000	30000
Rate of climb at S.L. (8) fpm.	3180	2750	3190	2390	2570
Max. speed at S.L. (3) kn.	250	250	250	250	250
Max. Speed/altitude kn./ft.	336/29000	336/26400	336/29000	334/21600	335/23400
LANDING WEIGHT (5) lb.	113010	98524	134145	85509	84884
Fuel lb.	3868	4444	4095	3584	2959
Stall speed—power-off/approach power (2) kn./kn.	87	82	95	76	76
Landing distance-groundroll/over 50 ft. obst (6) ft./ft.	1800/3140	1620/2900	2100/3620	1450/2710	1440/2700

- (1) Maximum wing fuel limited to 60,920 lbs including external tks  
 (2) 100% flaps  
 (3) Structural design limitation  
 (4) Maximum continuous power

## NOTES

- (5) Cargo plus fuel reserves  
 (6) No reverse thrust  
 (7) 50% flaps, 4200 PSHP limited  
 (8) 4200 PSHP limited

PERFORMANCE SUMMARY

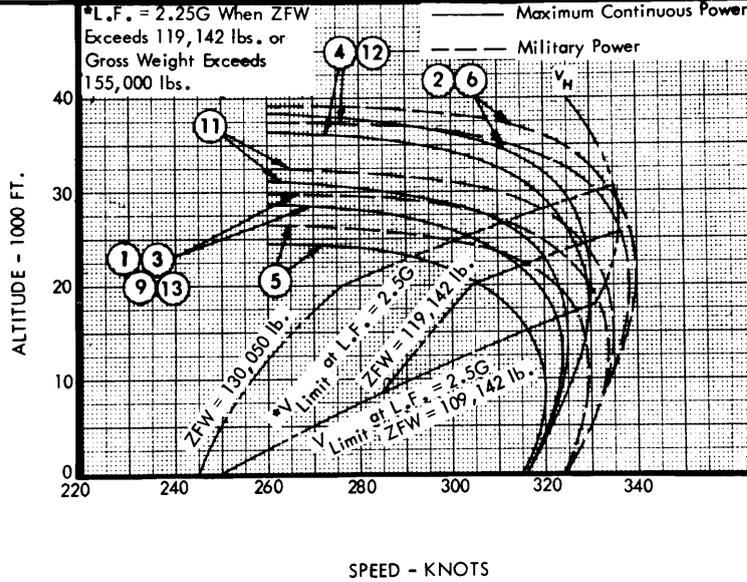
TAKE-OFF LOADING CONDITION	FERRY RANGE (11)	AERIAL DELIVERY (13)
TAKE-OFF WEIGHT lb.	141726	155,000
Fuel internal/external (JP-5) lb./lb.	42983/17937 (1)	42983/2875
Payload lb.	0	30115
Wing loading lb./sq. ft.	81.3	88.8
Stall speed—power-off/take-off power (7) kn.	104/84	109/88
Take-off run at S.L.— calm/25 kn.wind (7) ft.	2890/1740	3540/2200
Take-off to clear 50 ft.— calm/25 kn.wind (7) ft.	4050/2740	5010/3510
Max. effort take-off — calm (7) ft.	2190	2650
Max. speed/altitude (4) kn./ft.	328/24500	323/16400
Rate of climb at S.L.(4) (8) fpm.	2160	1870
Time: S.L. to 20,000 ft.(4) min.	13.5	16.6
Time: S.L. to 30,000 ft.(4) min.	29.4	28.9
Service ceiling (100 fpm) (4) ft.	29800	27200
Combat range n.mi.	4586	-
Average cruising speed kn.	297	-
Cruising altitude(s) ft.	28200/40700	-
Combat radius/mission time n.mi./hr.	-	1531/10.45
Average cruising speed kn.	-	294
COMBAT LOADING CONDITION	60% MISSION FUEL NO PAYLOAD (12)	60% MISSION FUEL NO PAYLOAD (14)
COMBAT WEIGHT lb.	117358	106542
Engine power	Military	Military
Fuel lb.	36552	27515
Combat speed/combat altitude kn./ft.		
Rate of climb/combat altitude fom/ft.		
Combat ceiling (500 fpm) ft.	31200	35000
Rate of climb at S.L. (8) fpm.	2750	3220
Max. speed at S.L. (3) kn.	250	250
Max. Speed/altitude kn./ft.	336/26400	336/30600
LANDING WEIGHT (5) lb.	85081	82895
Fuel lb.	4275	3868
Stall speed—power-off/approach power (2) kn./kn.	76	75
Landing distance-groundroll/over 50 ft. obst.(6) ft./ft.	1450/2710	1520/2680

NOTES

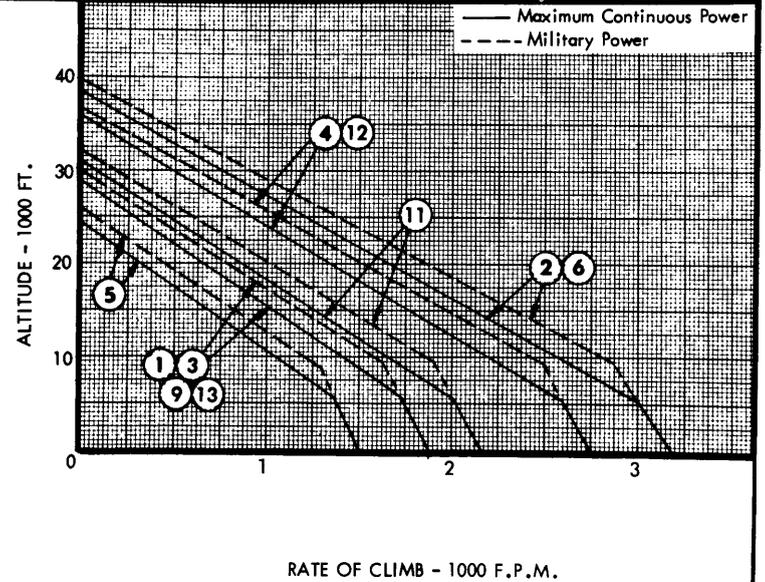
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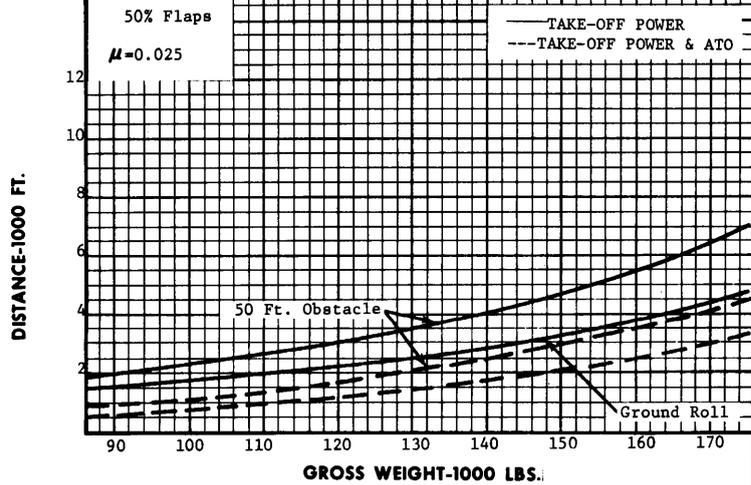
**SPEED**



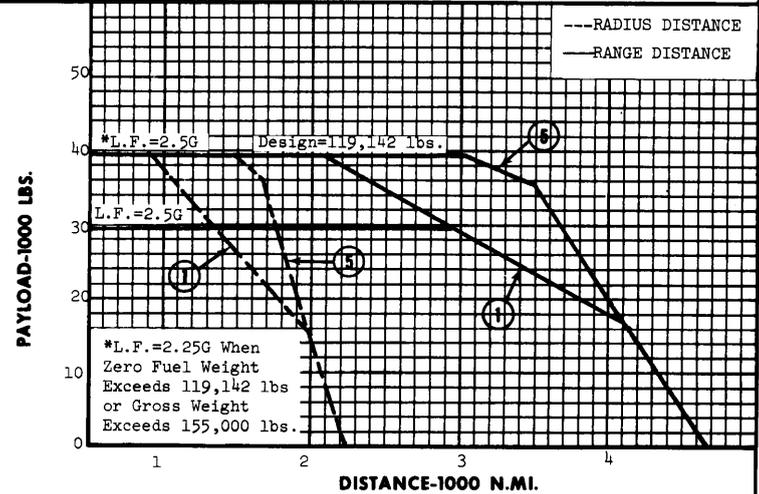
**CLIMB**



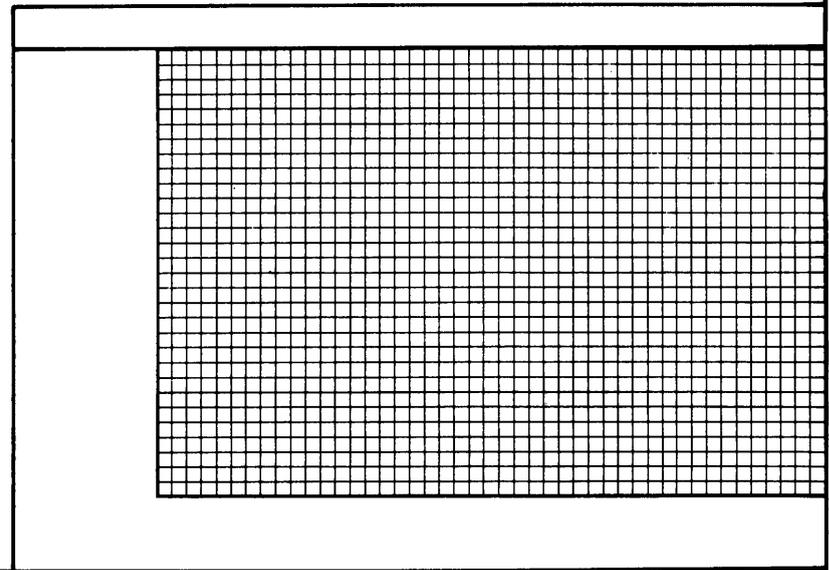
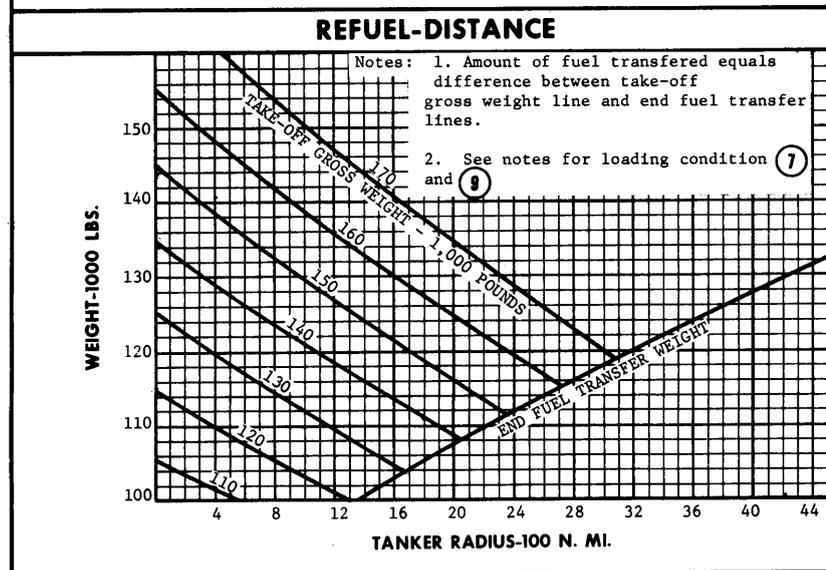
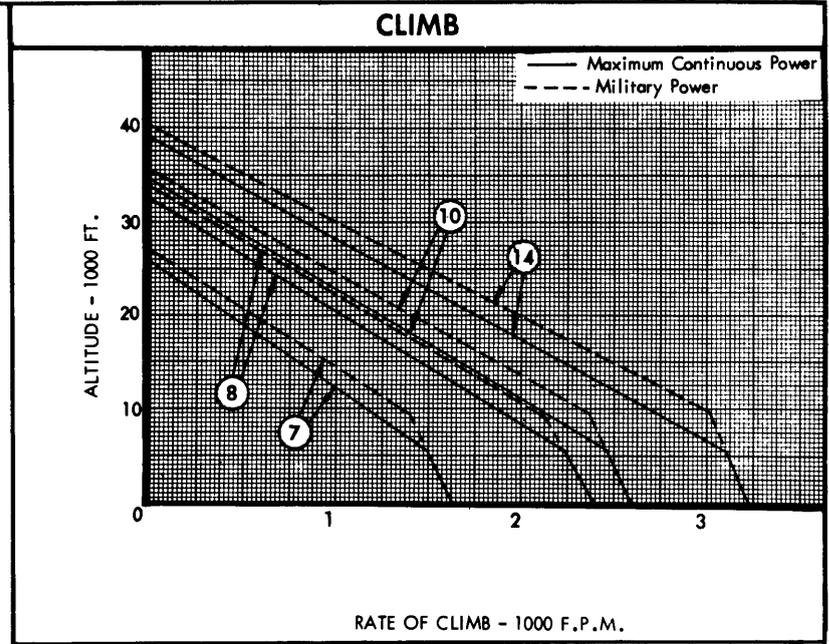
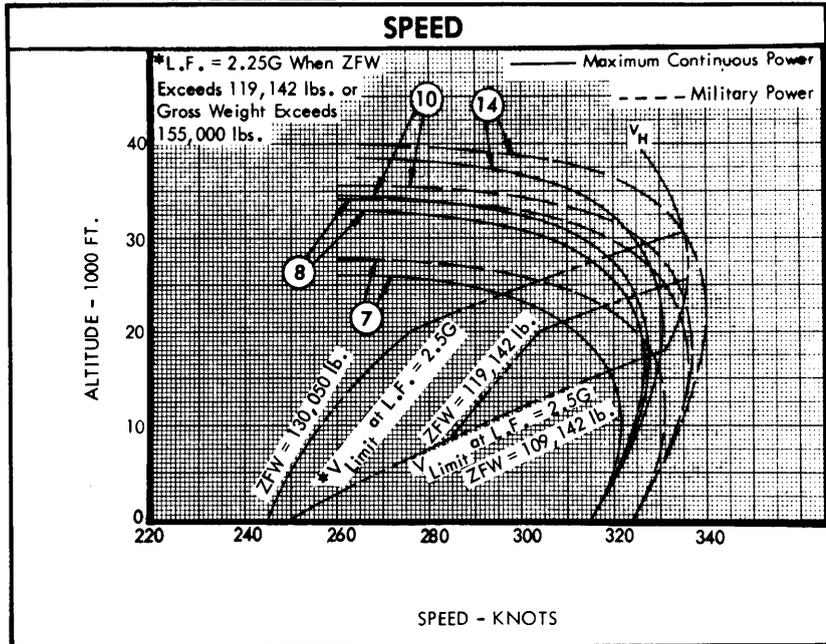
**TAKE-OFF**



**PAYLOAD-DISTANCE**



○ LOADING CONDITION COLUMN NUMBER



○ LOADING CONDITION COLUMN NUMBER

NOTES

RANGE MISSION

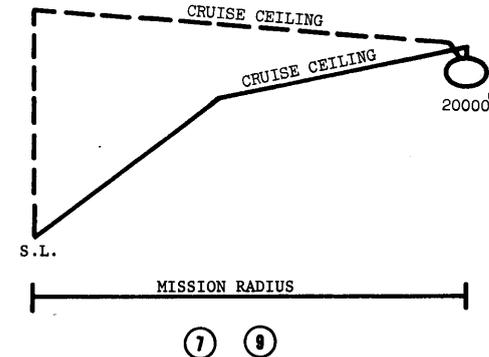
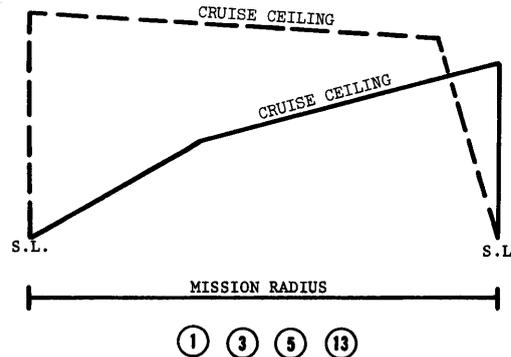
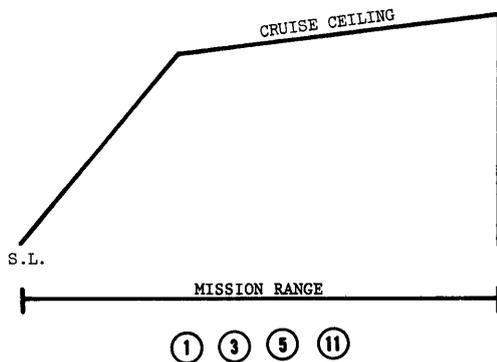
START ENGINES, TAXI, TAKE-OFF, ACCELERATE TO CLIMB SPEED.  
 5 MINUTES AT MAXIMUM CONTINUOUS POWER AT SEA LEVEL.  
 CLIMB ON COURSE TO CRUISE CEILING AT MAXIMUM CONTINUOUS POWER.  
 CRUISE TO REMOTE BASE AT SPEEDS FOR MAXIMUM RANGE AT ALTITUDES FOR MAXIMUM RANGE.  
 LAND AT REMOTE SEA LEVEL BASE WITH RESERVES (NO FUEL CONSUMED, NO DISTANCE CREDIT).  
 RESERVE: 30 MINUTES AT SEA LEVEL AT SPEEDS FOR MAXIMUM ENDURANCE PLUS 5 PERCENT OF INITIAL FUEL.

RADIUS MISSION

START ENGINES, TAXI, TAKE-OFF, ACCELERATE TO CLIMB SPEED.  
 5 MINUTES AT MAXIMUM CONTINUOUS POWER AT SEA LEVEL.  
 CLIMB ON COURSE TO CRUISE CEILING AT MAXIMUM CONTINUOUS POWER.  
 CRUISE TO REMOTE SEA LEVEL BASE AT SPEEDS FOR MAXIMUM RANGE AT ALTITUDES FOR MAXIMUM RANGE.  
 FOR LOADING 1, 3 and 5 LAND AT REMOTE SEA LEVEL BASE AND UNLOAD ENTIRE CARGO (NO FUEL CONSUMED, NO DISTANCE CREDIT).  
 FOR LOADING 13 DESCEND TO SEA LEVEL, LOITER 15 MINUTES AT SPEED FOR MAXIMUM ENDURANCE AND DROP CARGO.  
 FOR LOADING 1, 3 AND 5 START ENGINES, TAXI, TAKE-OFF, ACCELERATE TO CLIMB SPEED.  
 FOR LOADING 1, 3 AND 5, 5 MINUTES AT MAXIMUM CONTINUOUS POWER AT SEA LEVEL.  
 CLIMB ON COURSE TO CRUISE CEILING AT MAXIMUM CONTINUOUS POWER.  
 CRUISE TO HOME BASE AT SPEEDS FOR MAXIMUM RANGE AT ALTITUDES FOR MAXIMUM RANGE.  
 LAND AT HOME BASE WITH RESERVES.  
 RESERVES: 30 MINUTES AT SEA LEVEL AT SPEEDS FOR MAXIMUM ENDURANCE PLUS 5 PERCENT OF INITIAL FUEL.

REFUEL MISSION

START ENGINES, TAXI, TAKE-OFF, ACCELERATE TO CLIMB SPEED.  
 5 MINUTES AT MAXIMUM CONTINUOUS POWER AT SEA LEVEL.  
 CLIMB ON COURSE TO CRUISE CEILING AT MAXIMUM CONTINUOUS POWER.  
 CRUISE OUT AT CRUISE CEILING AND LONG RANGE CRUISE SPEED TO POINT OF RENDEZVOUS.  
 DESCENT TO 20,000 FOOT REFUELING ALTITUDE AND LOITER AT MAXIMUM ENDURANCE SPEED FOR AN HOUR TO ALLOW FOR RENDEZVOUS, HOOK UP, AND FUEL TRANSFER (NO DISTANCE CREDIT).  
 CLIMB TO CRUISE CEILING AND RETURN TO BASE AT LONG RANGE CRUISE SPEED.  
 LAND AT HOME BASE WITH RESERVES.  
 RESERVES: 30 MINUTES AT SEA LEVEL AT SPEEDS FOR MAXIMUM ENDURANCE PLUS 5% OF INITIAL FUEL.



PERFORMANCE BASIS: LOCKHEED ENGINEERING REPORT NO. LG74ER0177  
 BASED ON FLIGHT TEST DATA

○ LOADING CONDITION COLUMN NUMBER