

NAVAIR 00-110ATC130-3

Standard Aircraft Characteristics

NAVY MODEL

C-130G

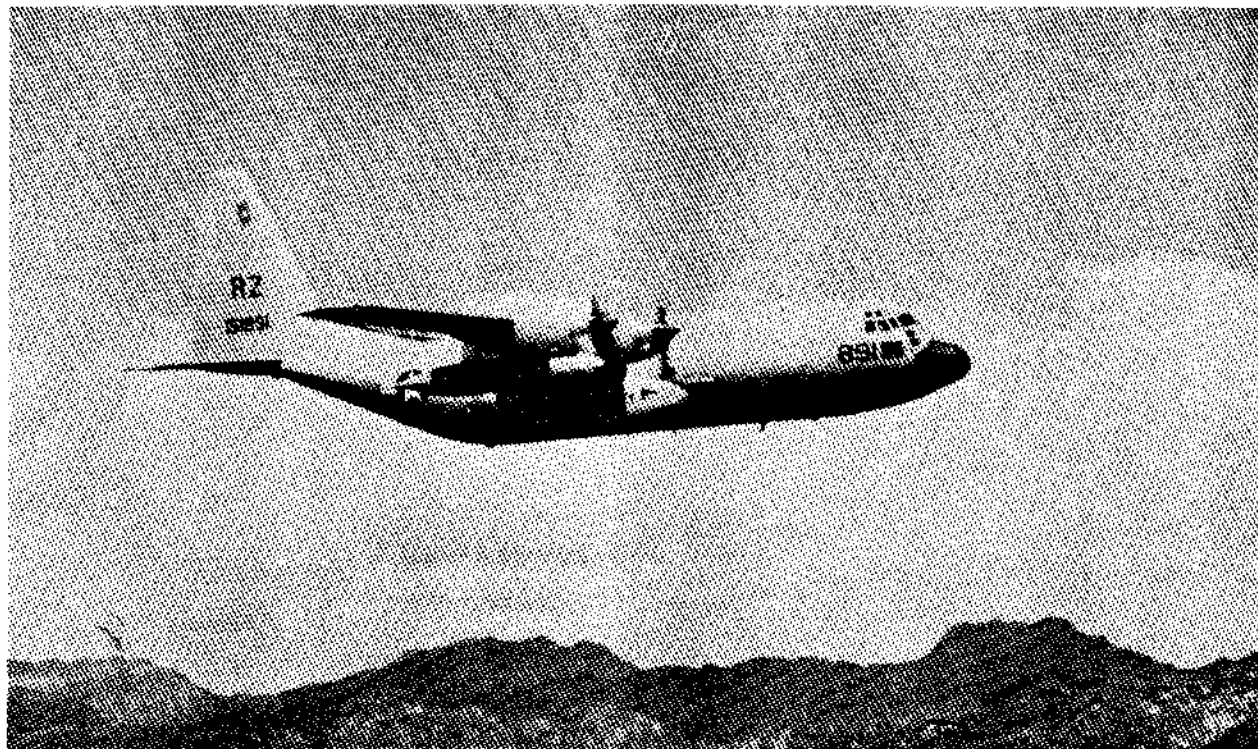
AIRCRAFT

(UV-1)

THIS PUBLICATION SUPERSEDES NAVAIR 00-110A-1 DATED
1 MAY 1955 IN PART AND ALL ADDENDA THERETO

PUBLISHED BY DIRECTION OF THE
COMMANDER OF THE NAVAL AIR SYSTEMS COMMAND

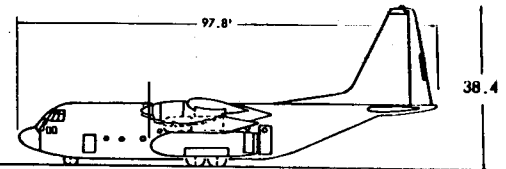
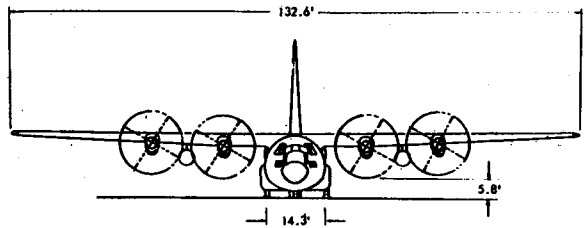
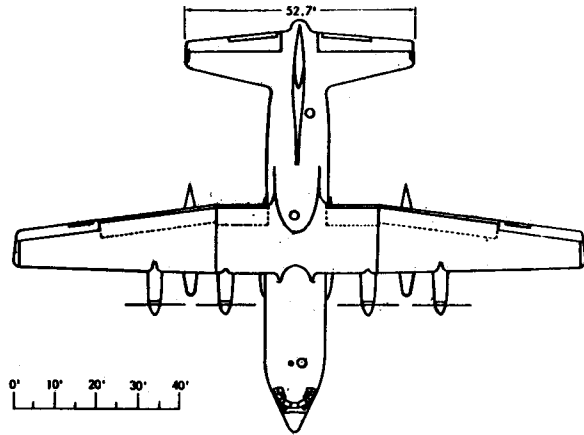
1 JULY 1967



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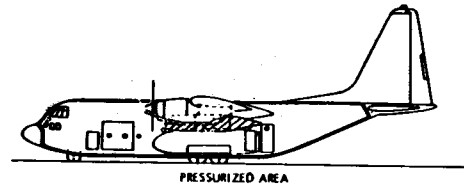
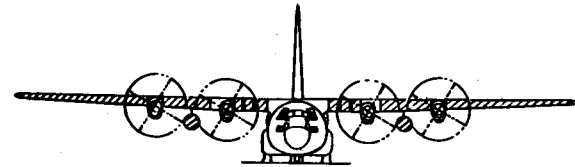
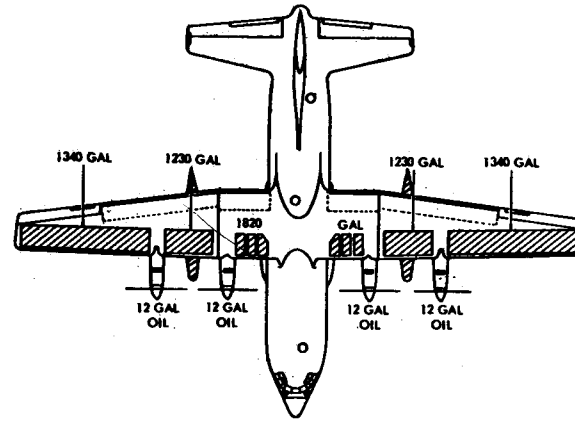
C-130G

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT



DESCRIPTIVE ARRANGEMENT

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT



ARMAMENT AND TANKAGE

POWER PLANT		MISSION AND DESCRIPTION		WEIGHTS																																									
No. & Model (4) T56-A-7 Mfr. Allison Engine Spec No. 377-F Type Axial Red. Gear Ratio 0.0739 Tail Pipe Fixed Area Prop Mfr. Hamilton Standard Blade Design No. A-7111C-2 Prop Dia. 13.5' No. Blades 4 ATO		A.P. Equip. C-130B Mfr's Model: 282-44A-05 The mission of the C-130G is the transportation of personnel or cargo for arial or conventional delivery. The aircraft is capable of carrying 92 combat troops or 64 paratroops with equipment. In the air evacuation configuration, the aircraft is capable of carrying 74 litters with 2 attendants, the normal crew is composed of pilot, co-pilot, flight engineer, navigator and loadmaster. The aircraft is an all metal, high wing, long range, land based monoplane. The C-130G has greater structural strength than the C-130F, and can operate at higher weights. Features include an intergal cargo ramp and door; crew and cargo compartment pressurization; ground and inflight air conditioning; thermal de-icing system for the leading edge of the wing and empennages; single point refueling system; external fuel tanks and K-4 autopilot. The aircraft is equipped with four flaps, consisting of an outboard and an 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. The C-130G can land and take-off on short runways, and can operate from landing strips such as those found in advance base operations. Provisions exist for using externally mounted ATO units to provide additional thrust for take-off.		<table border="1"> <thead> <tr> <th>LOADING</th> <th>lbs</th> <th>L.F.</th> </tr> </thead> <tbody> <tr> <td>Empty (A)</td> <td>70057</td> <td>--</td> </tr> <tr> <td>Basic (A)</td> <td>70815</td> <td>--</td> </tr> <tr> <td>Design</td> <td>155000</td> <td>2.5</td> </tr> <tr> <td>Combat (Maximum Cargo)</td> <td>101,104</td> <td>2.5</td> </tr> <tr> <td>Max T.C. (Overload)</td> <td>175000</td> <td>2.25</td> </tr> <tr> <td>Max T.C. (Normal)</td> <td>155000</td> <td>2.5</td> </tr> <tr> <td>Max Land</td> <td>130000</td> <td>8.0 FPS(1)</td> </tr> <tr> <td colspan="3">Internal fuel less than 25,000 lb; No more than 6600 lb per outbd tank</td> </tr> </tbody> </table>		LOADING	lbs	L.F.	Empty (A)	70057	--	Basic (A)	70815	--	Design	155000	2.5	Combat (Maximum Cargo)	101,104	2.5	Max T.C. (Overload)	175000	2.25	Max T.C. (Normal)	155000	2.5	Max Land	130000	8.0 FPS(1)	Internal fuel less than 25,000 lb; No more than 6600 lb per outbd tank															
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No. & Model (B)(8) 15KS-1000 Mfr. Aerojet Weight (Loaded) 200 Lb Each RATINGS <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>4050</td> <td>3755</td> <td>740</td> <td>13,820</td> <td>5</td> </tr> <tr> <td>MI</td> <td>4050</td> <td>3755</td> <td>740</td> <td>13,820</td> <td>30</td> </tr> <tr> <td>Nor.</td> <td>3730</td> <td>3443</td> <td>718</td> <td>13,820</td> <td>Cont</td> </tr> </tbody> </table> ATO Thrust (lb) 8 X 1000 Duration (Sec)..... 15		S.L.S.	ESHP	SHP	LB	RPM	MIN	T.O.	4050	3755	740	13,820	5	MI	4050	3755	740	13,820	30	Nor.	3730	3443	718	13,820	Cont	FUEL AND OIL <table border="1"> <thead> <tr> <th>LOCATION</th> <th>NO TANKS</th> <th>GAL</th> </tr> </thead> <tbody> <tr> <td>Wing, Inbd</td> <td>2</td> <td>2460</td> </tr> <tr> <td>Wing, Outbd</td> <td>2</td> <td>2680</td> </tr> <tr> <td>Wing, Center</td> <td>2</td> <td>1820</td> </tr> <tr> <td>Pylon</td> <td>2</td> <td>2720</td> </tr> <tr> <td colspan="2">Total</td> <td>9680</td> </tr> </tbody> </table> Grade JP-5 Specification MIL-F-5624D OIL Nacelles 4 (Tot) 48 Specification MIL-L-7808C		LOCATION	NO TANKS	GAL	Wing, Inbd	2	2460	Wing, Outbd	2	2680	Wing, Center	2	1820	Pylon	2	2720	Total		9680
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ELECTRONICS UHF Command (2)..... AN/ARC-52 VHF Command Collins VHF-101 Liaison (2)..... HF-102 Interphone AN/AIC-18 P.A. System AN/AIC-13 Radar Set (Altimeter)(Provision Only)..... AN/APN-150 High Range Altimeter..... AN/APN-133 Doppler Navigation System..... AN/APN-153(V) Doppler Computer..... AN/ASN-19A Wind Memory Computer ASK-2 Radar Set AN/APN-59B Radar Set (Loran) AN/ATN-70 Radar Set (IFF) AN/APX-25A Radio Compass (2) AN/ARN-6 (Including Remote Tuning Group)..... AN/ARA-19 Marker Beacon Collins..... 512-3 Glide Path (2)..... AN/ARN-67 Omnidirectional Range (2)..... AN/ARN-14 Radio Set (TACAN) (2)..... AN/APN-21 Flight Director System (2)..... AF Std. Direction Finder (UHF) AN/ARA-25 Altitude Gyroscopic Control Assy AF/A24G-2A Pressurization Kit AN/ASQ-14 Static Discharger AN/ASA-3A		DEVELOPMENT First Flight November 1963 Service Use December 1963																																											
DIMENSIONS Wing Span 132.6' Incidence (root)..... 30 (tip)..... 0° Dihedral 20°30' Sweepback (18% chord)..... 0° Area 1745.5 sq. ft. Length 97.8' Height 38.5' Tread 14.3' Prop Ground Clearance 5.8'		CARGO <u>Max. Load Dimensions</u> Length 41.0' Width 9.96' (Center Section) Height 8.8' <u>Opening for Cargo Loading</u> Width between ADS Rods 9.65' Ramp Curbs 9.52' Height Cargo Floor-Upper Door 9.08' <u>Max Cargo Weight</u> - 155,000 lbs gross wt. 56,000 lbs @ 2.5 G limit load factor with 26,293 lbs fuel (JP-5)																																											

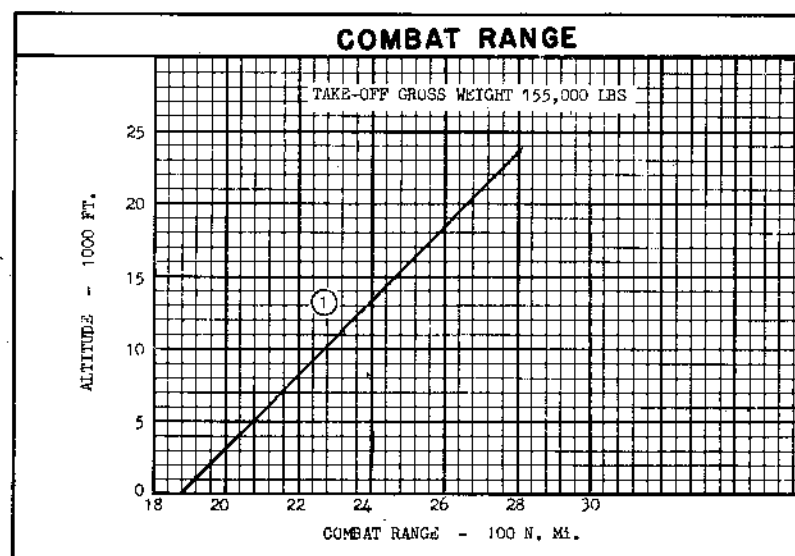
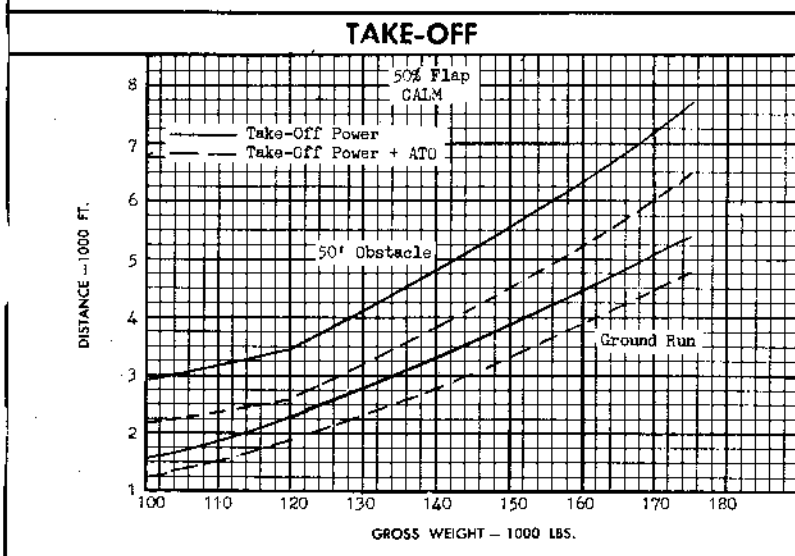
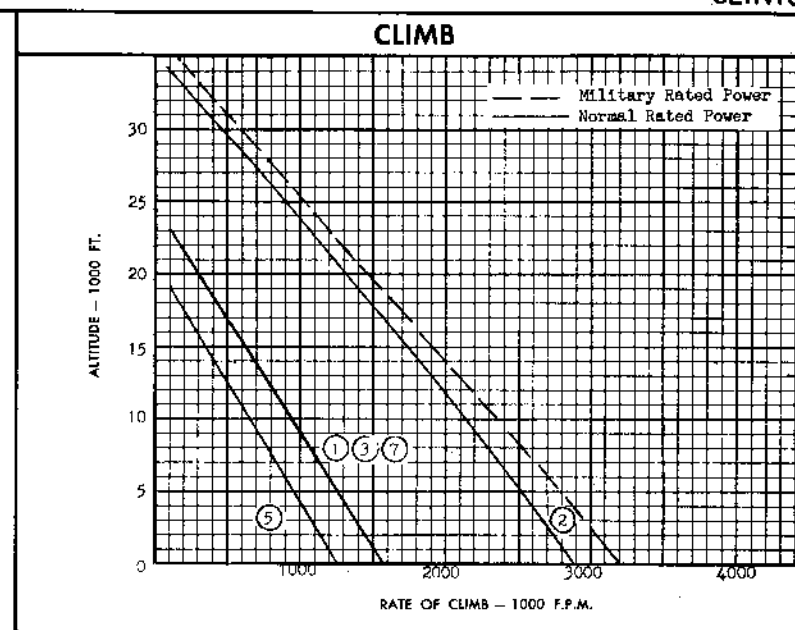
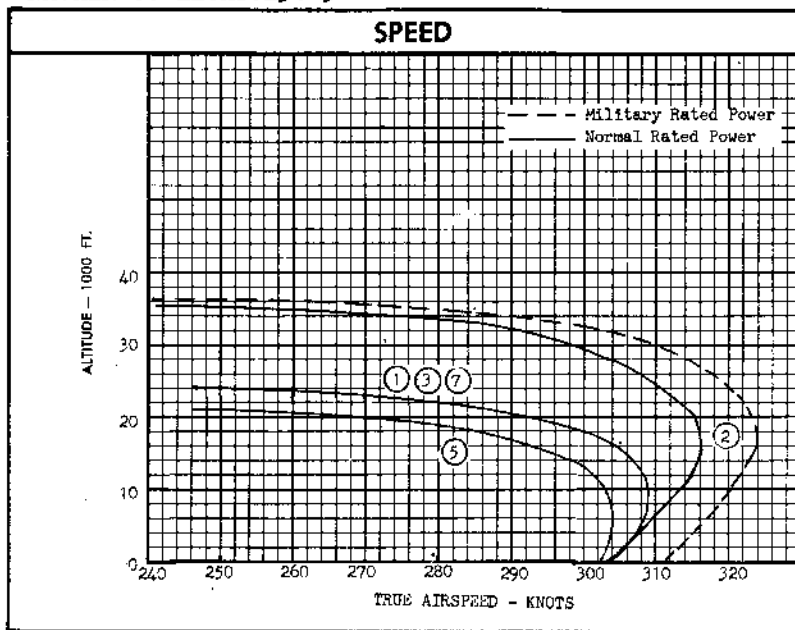
PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) Design Maximum Payload	(3) Design Maximum Fuel	(5) Maximum Payload Overload	(7) TACAMO Mission
TAKE-OFF WEIGHT lb.	155,000	155,000	175,000	155,000
Fuel internal/external (JP-5) lb./lb.	47328/0	(1) 47328/15592	47328/9965	47328/10015
Payload lb.	34965	19373	45000	25000
Wing loading lb./sq. ft.	88.8	88.8	100.3	88.8
Stall speed—power-off (2) kn.	102	102	109	102
Take-off run at S.L.— calm (9)/JATO (3)(9) ft.	4125/3565	4125/3565	5390/4750	4125/3565
Take-off run at S.L.— 89.6° (9) ft.	5015	5015	6670	5015
Take-off to clear 50 ft.— calm (9)/JATO(3)(9) ft.	5810/4812	5810/4812	7640/6457	5810/4812
Max. speed/altitude (4) kn./ft.	309/9000	309/9000	304/6000	309/9000
Rate of climb at S.L. (4) fpm.	1552	1552	1237	1552
Time: S.L. to 20,000 ft. (4) min.	27	27	(5) 11	27
Time: S.L. to 22,800ft. (4) min.	45	45	(6) 44	45
Service ceiling (100 fpm) (4) ft.	22800	22800	19000	22800
Combat range n.mi.	2843	4078	3065	3600
Average cruising speed kn.	273	273	275	274
Cruising altitudes ft.	20800/29400	20800/33000	16900/27000	20800/31600
Combat radius/mission time n.mi./hr.	1555/11,740	2142/16,064	1802/13,596	1000/13,410
Average cruising speed kn.	273/266	273/268	272/266	272/273
Time on Station - 25,000 ft - N.R.P. hrs.				5.84
COMBAT LOADING CONDITION	(2) 60% Mission Fuel No Payload	(4) 60% Mission Fuel No Payload	(6) 60% Mission Fuel No Payload	(8) 60% Mission Fuel No Payload
COMBAT WEIGHT lb.	101,104	110,459	107,083	107,063
Engine power	MILITARY	MILITARY	MILITARY	MILITARY
Fuel lb.	28397	37752	34376	34406
Combat speed/combat altitude kn./ft.	305/31200	306/28800	303/30500	303/30500
Rate of climb/combat altitude fpm/ft.	500/31200	500/28800	500/30500	500/30500
Combat ceiling (500 fpm) ft.	31200	28800	30500	30500
Rate of climb at S.L. fpm.	3212	2863	2996	2996
Max. speed at S.L. kn.	311	311	311	311
Max. speed/altitude kn./ft.	324/19000	322/17000	323/18000	323/18000
LANDING WEIGHT (7) lb.	111960	97016	122586	102378
Fuel lb.	4288	4936	4879	4721
Stall speed—power-off/military power (2) kn./kn.	89/71	80/65	91/75	83/68
Landing distance—ground roll/over 50 ft. obst.(8) ft./ft.	2030/3275	1920/3050	2620/4150	2000/3225

NOTES

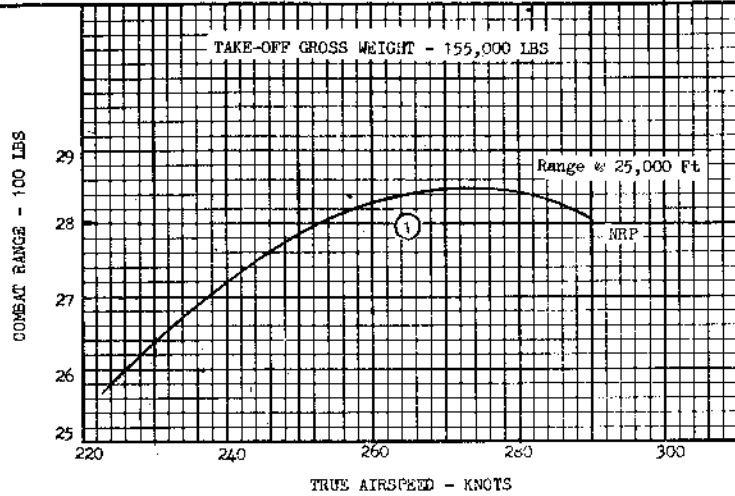
- (1) Max. Fuel Limited to 62920 lbs
 (2) 100% Flaps
 (3) 8-1000 lb Thrust ATO Units - Operating for 14 Secs

- (4) N. R. P.
 (5) 10,000 ft
 (6) 19,000 ft
 (7) Cargo + Fuel Reserves
 (8) No Reverse Thrust
 (9) MRP - 50% Flaps

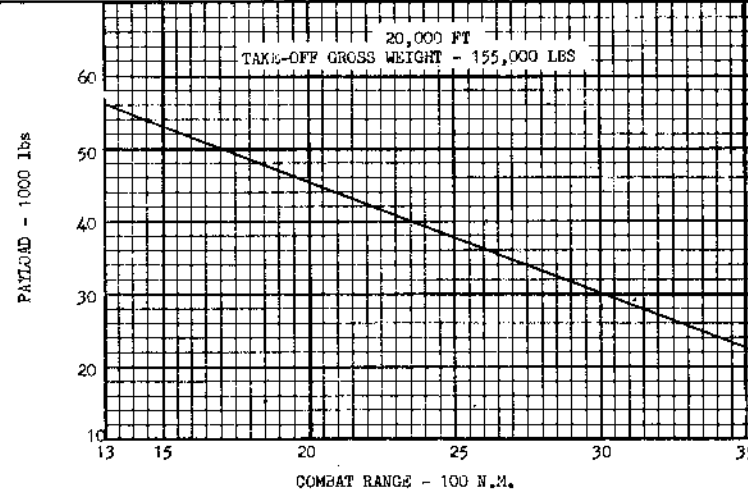


○ LOADING CONDITION COLUMN NUMBER

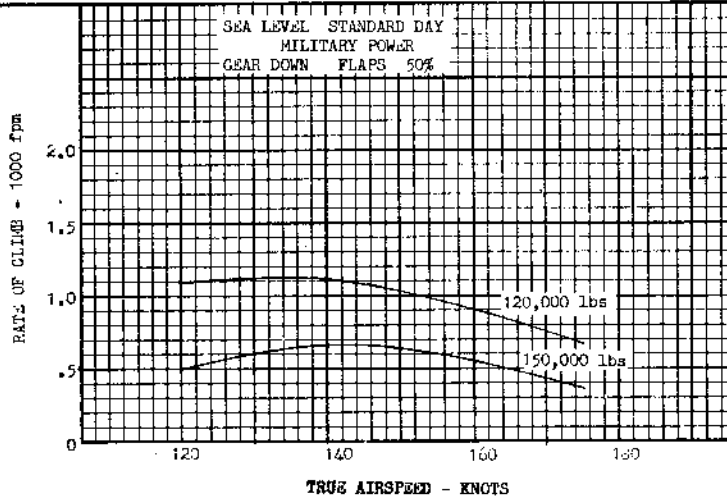
COMBAT RANGE



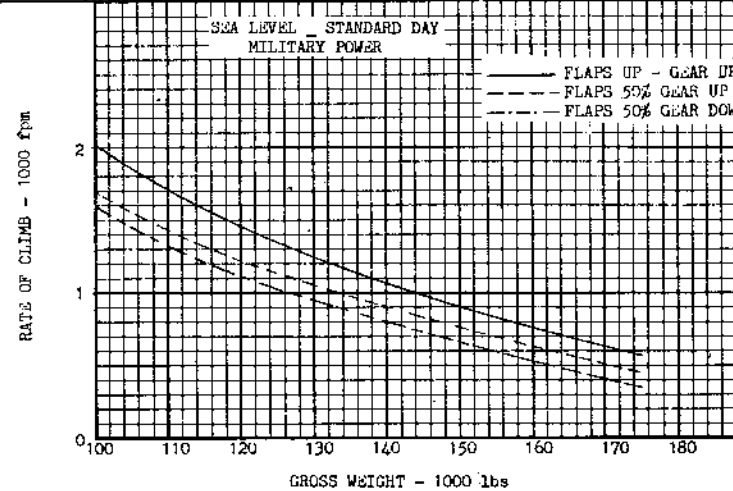
COMBAT RANGE



CLIMB ONE ENGINE INOPERATIVE



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NOTES

RANGE MISSIONS

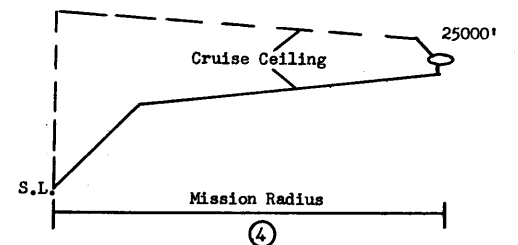
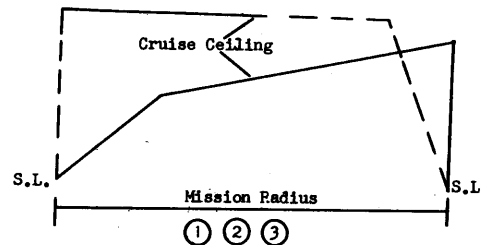
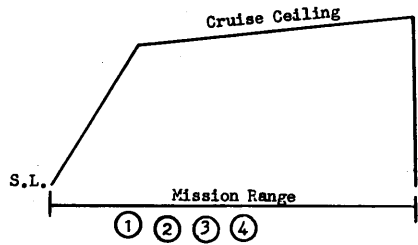
Start Engines, Warm up, Take-off, Accelerate to Climb Speed: 5 Minutes at Normal Power at Sea Level
 Climb on Course to Cruise Ceiling at Normal Power
 Cruise to Remote Base at Speeds for Maximum Range at Altitudes for Maximum Range
 Land at Remote Sea Level Base with Reserves (No fuel consumed, no distanced credit)
 Reserve: 30 Minutes' at Sea Level at Speeds for Maximum endurance plus 5% of Initial Fuel

RADIUS MISSIONS

Start Engines, Warm up, Take-off, Accelerate to Climb Speed: 5 Minutes at Normal Power at Sea Level
 Climb on Course to Cruise Ceiling at Normal Power
 Cruise to Remote Sea Level Base at Speeds for Maximum Range at Altitudes for Maximum range
 Land at Remote Sea Level Base and Unload Entire Cargo (no fuel consumed, no distanced credit)
 Start Engines, Warm up; Take-off, Accelerate to Climb Speed: 5 Minutes at Normal Power at Sea Level
 Climb on Course to Cruise Ceiling at Normal 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% of Initial Fuel

TACAMO MISSION

Start Engines, Warm up, Take-off, Accelerate to Climb Speed: 5 Minutes at Normal Power at Sea Level
 Climb on Course to Cruise Ceiling at Normal Power
 Cruise to Station at Speeds for Maximum Range at Altitudes for Maximum Range
 Climb to 25,000 ft (No distance credit)
 Loiter at 25,000 ft at Normal Power
 Climb on Course to Cruise Ceiling at Normal 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% of Initial fuel



Performance Basis: U.S.A.F. Report No. 63-37 of 1/64, C-130E Category II Performance tests; calculated data based on Category II test data

○ LOADING CONDITION COLUMN NUMBER