



STANDARD AIRCRAFT CHARACTERISTICS

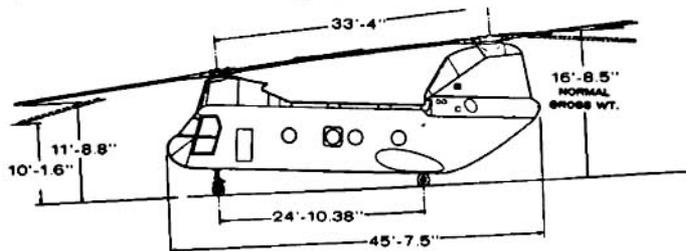
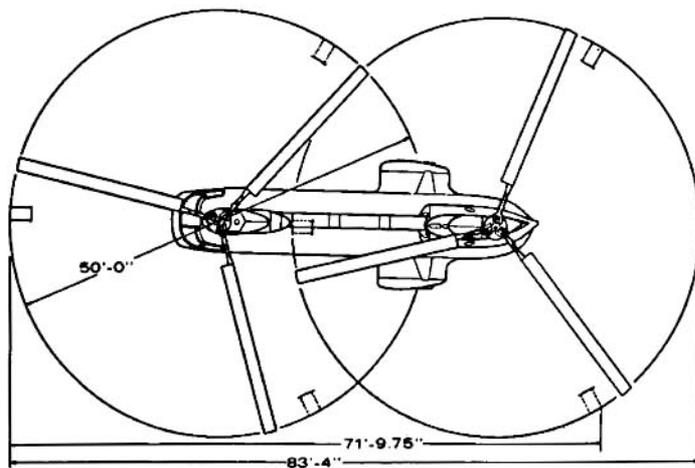
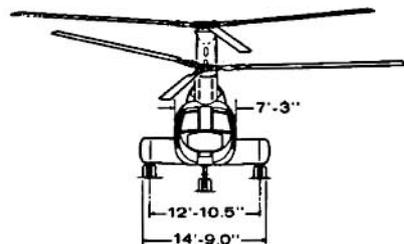
CH-46A "SEA KNIGHT"

BOEING-VERTOL

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT

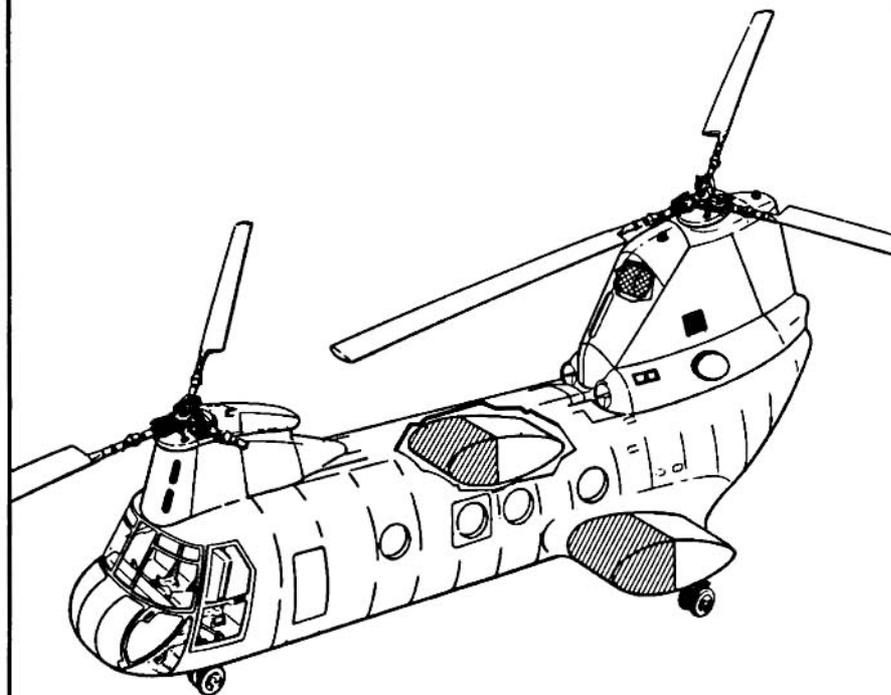
Disc Area (Swept) . . . 3925 sq ft
Blade Area (each) . . . 37.50 sq ft
Blade Area (total) . . . 225 sq ft

Engine/Rotor Gear Ratio . . . 73.772:1
Airfoil Section . . . NASA 0012 (Mod)
Blade Chord18 inches



DESCRIPTIVE ARRANGEMENT

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT



FUEL



OIL



ARMAMENT AND TANKAGE

STANDARD AIRCRAFT CHARACTERISTICS, NAVY'S FORM 13100/48 (Rev. 7-65)

POWER PLANT	MISSION AND DESCRIPTION	WEIGHTS																																									
<p>No. & Model (2) T58-GE-8F Manufacturer General Electric Co. Rotor Gear Ratio 73.772:1</p> <p>RATINGS</p> <p>SHP/RPM/ALT</p> <p>Military 1350/19500/SSL Normal 1150/19500/SSL</p> <p>Engine Spec. No. E-1152</p> <p>14 July 1968</p>	<p>The primary mission of this aircraft is to rapidly disperse combat troops, support equipment, and supplies from amphibious assault landing ships and established airfields to advanced bases in undeveloped areas with limited maintenance and logistic support under all-weather conditions, day or night.</p> <p>The Sea Knight is a twin turbine, tandem-rotor helicopter with an all-metal fuselage of semi-monocoque stressed skin construction. The engines drive two three-bladed fully articulated partially overlapping rotors, which are synchronized by positive gearing and an interconnecting drive shaft. The all-metal steel-spar rotor blades are interchangeable and have provisions for electrically heated deicing boots. Automatic blade folding within 60 seconds under 45 knot wind conditions is another feature included in the rotor system design.</p> <p>By sealing the fuselage during assembly, inherent flotation capability is achieved in the normal configuration for emergency water landings and take-offs. A rear loading ramp provides access to the unobstructed payload space for rapid straight-in loading and unloading of personnel, supplies, equipment and vehicles. The ramp is capable of being operated both on the ground and in flight.</p> <p>For instrument flight capabilities, a dual Stability Augmentation System (SAS) is included as standard equipment. It is a normal and integral part of the control system, and provides positive dynamic stability about the yaw, pitch, and roll axes throughout the entire speed range from hover to maximum forward speed.</p>	<table border="0"> <tr> <td></td> <td>Lbs.</td> <td>L. F.</td> </tr> <tr> <td>Empty:</td> <td>12574</td> <td></td> </tr> <tr> <td>Basic:</td> <td>12596</td> <td></td> </tr> <tr> <td>Design:</td> <td>19650</td> <td>2.54</td> </tr> <tr> <td>Max. T.O.:</td> <td>21400</td> <td>2.3</td> </tr> <tr> <td>Max. Landing:</td> <td>21400</td> <td>2.3</td> </tr> </table> <p>Weights are actual.</p>		Lbs.	L. F.	Empty:	12574		Basic:	12596		Design:	19650	2.54	Max. T.O.:	21400	2.3	Max. Landing:	21400	2.3																							
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<p>ELECTRONICS</p>	<p>FUEL AND OIL</p> <table border="0"> <tr> <td>Tanks</td> <td>Gals</td> <td></td> </tr> <tr> <td>2</td> <td>190</td> <td>Left and Right Stub Wings</td> </tr> <tr> <td>Fuel Grade</td> <td></td> <td>JP-4 or JP-5</td> </tr> <tr> <td>Fuel Spec</td> <td></td> <td>Mil-F-5624C</td> </tr> <tr> <td colspan="3">OIL</td> </tr> <tr> <td>Capacity (Gals)</td> <td></td> <td></td> </tr> <tr> <td>Engine</td> <td></td> <td>2.1</td> </tr> <tr> <td>Transmission</td> <td></td> <td>14.4</td> </tr> <tr> <td>Oil Spec</td> <td></td> <td>Mil-L-23699</td> </tr> </table> <p>ORDNANCE</p> <p>Provisions for two (2) 50 Cal. Guns</p>	Tanks	Gals		2	190	Left and Right Stub Wings	Fuel Grade		JP-4 or JP-5	Fuel Spec		Mil-F-5624C	OIL			Capacity (Gals)			Engine		2.1	Transmission		14.4	Oil Spec		Mil-L-23699	<p>CARGO</p> <p>Cargo Capacity: 1034 cu ft (not incl. Ramp Area) Floor Area: 180 sq ft (incl. Ramp) Cabin Height: 6' Cabin Width: 6'7" Floor Limit Loads: Roller Beams for 3000 lb (Pallet 40" x 48") Wheel Tread: 1000 lb dead wt wheel load @ 32 psi Tire Pressure Remaining Floor Area: 300 lb/sq ft</p>														
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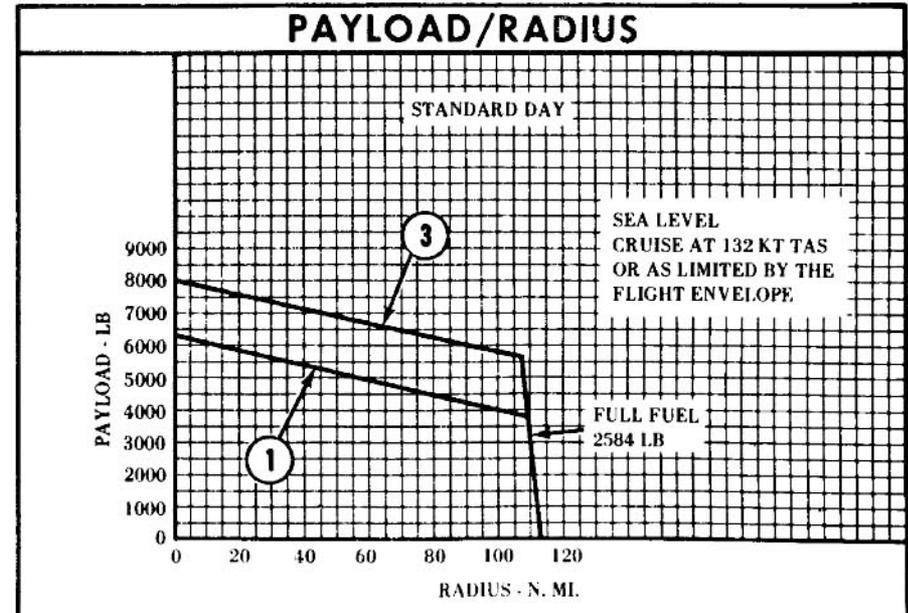
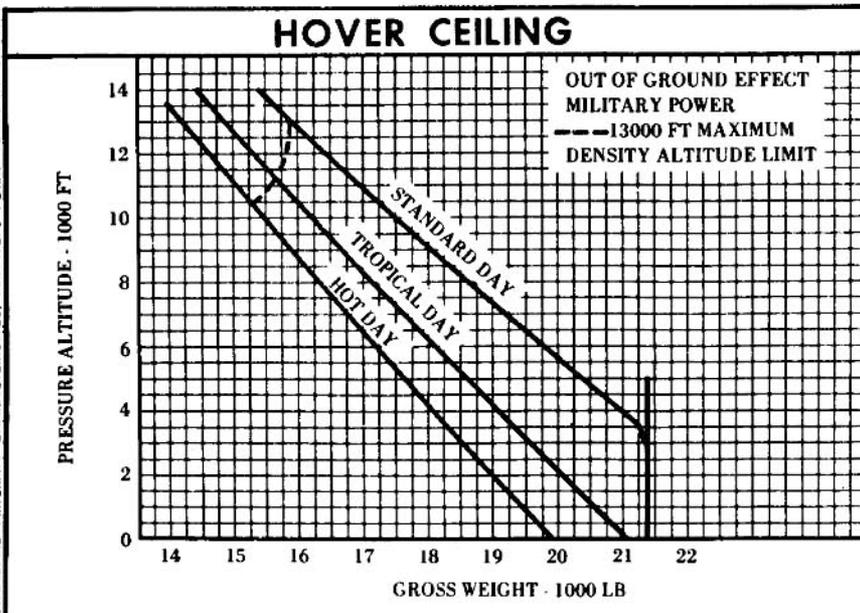
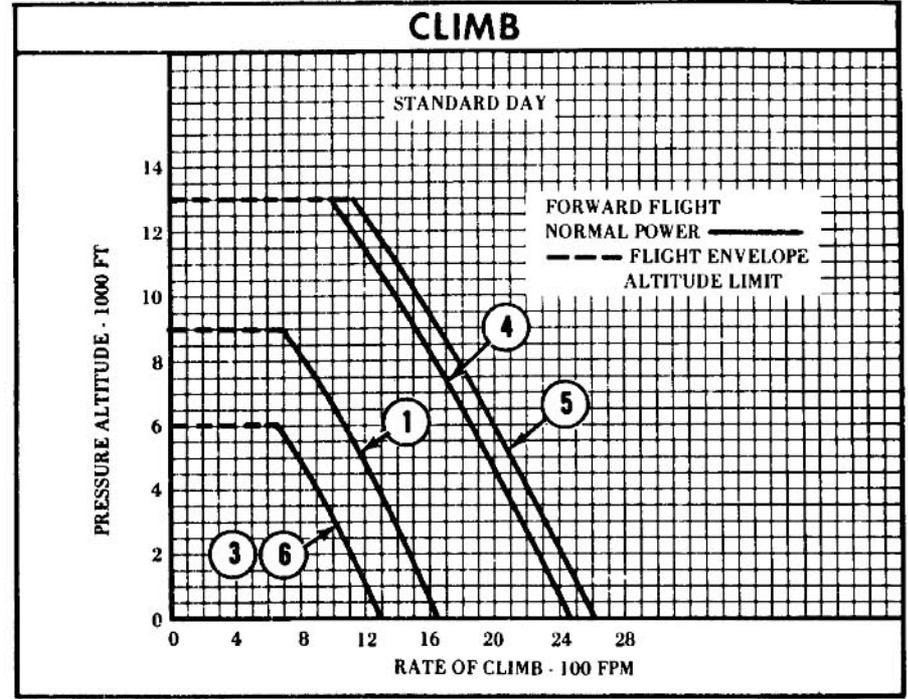
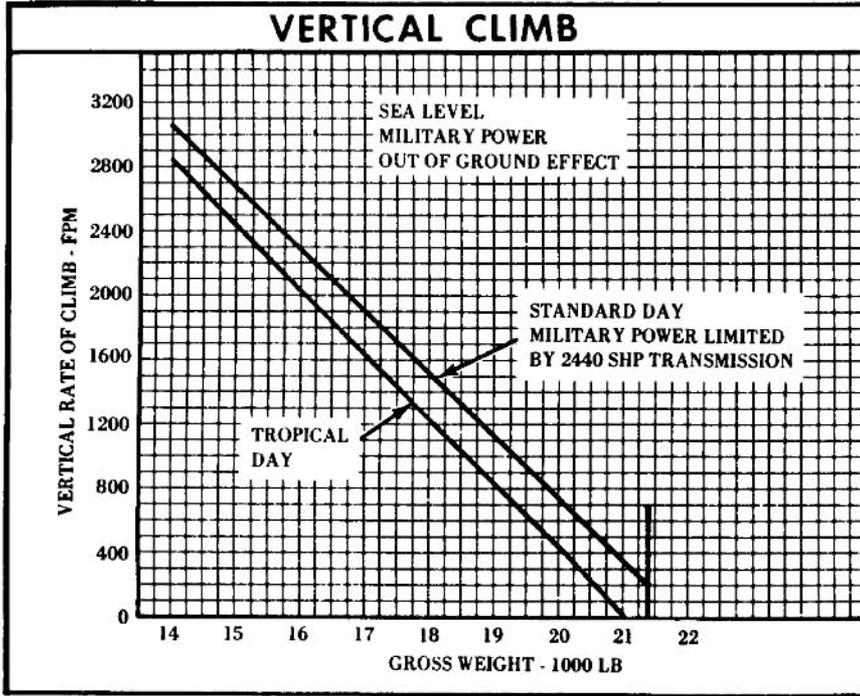
STANDARD AIRCRAFT CHARACTERISTICS, NAVVEPS FORM 13100 4C (Rev. 7-65)

PERFORMANCE SUMMARY

TAKEOFF LOADING CONDITION		① DESIGN MISSION (PRIMARY)	② DESIGN MISSION TROPICAL DAY	③ DESIGN MISSION (OVERLOAD WEIGHT)	④ RESCUE MISSION	⑤ RETRIEVAL MISSION (EXTERNAL LOAD) (2)	⑥ FERRY MISSION
TAKEOFF WEIGHT	LB	19569	19515	21400	16254	15766	21400
FUEL	LB	2387	2333	2422	2584	2584	7423
PAYLOAD	LB	4000	4000	5800	2700	6750	-
DISC LOADING	PSF	4.99	4.97	5.45	4.19	4.02	5.45
VERTICAL RATE OF CLIMB @ SL (3)	FPM	905 (4)	645 (5)	200 (4)	2185 (4)	2375 (4)	200 (4)
ABSOLUTE HOVER CEILING (3), (5)	FT	8050 (6)	3170	3100	12350	13000 (7)	3100
MAX RATE OF CLIMB @ SL (8)	FPM	1640	1010	1280	2455	2600	1280
SERVICE CEILING	FT	9050 (7)	7370 (7)	6000 (7)	13000 (7)	13000 (7)	6000 (7)
SPEED @ SL	KT	132 (8)	126 (8)	110 (9)	138 (9)	138 (9)	110 (9)
MAX SPEED/ALTITUDE	KT/FT	132/SL (8)	126/SL (8)	110/SL (9)	138/SL (9)	138/SL (9)	110/SL (9)
COMBAT RANGE	NMI	204	202	201	-	-	715
AVERAGE CRUISING SPEED	KT	132	126	123	-	-	110
CRUISING ALTITUDE	FT	SL	SL	SL	SL	SL	5500
COMBAT RADIUS	NMI	100	100	100	109	96	-
AVERAGE CRUISING SPEED	KT	132	126	125	132	116	-

NOTES

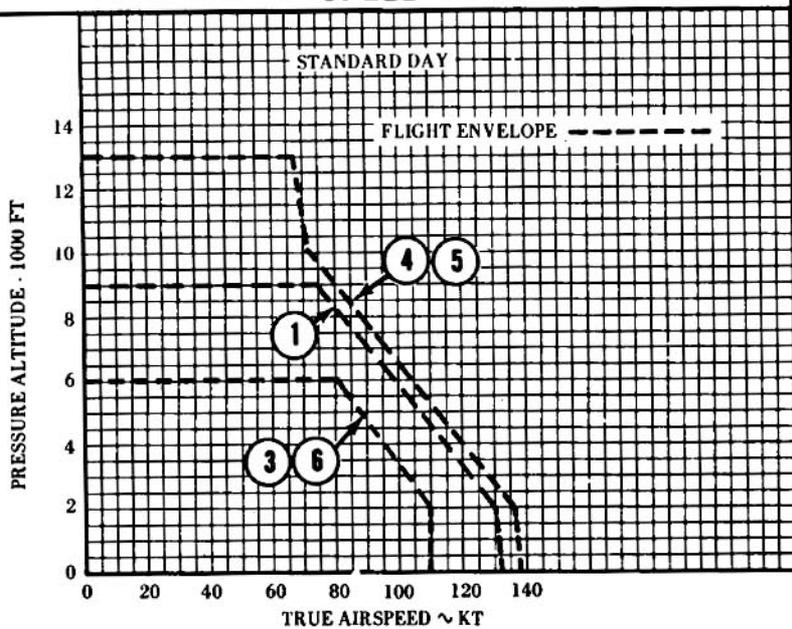
- (1) PERFORMANCE SHOWS FOR STANDARD DAY UNLESS NOTED OTHERWISE
- (2) EXTERNAL CARGO EQUIVALENT DRAG + 26 FT², 21400 LB GROSS WEIGHT AT RETRIEVAL SITE
- (3) OUT-OF-GROUND EFFECT
- (4) TRANSMISSION LIMIT - 2140 SHP @ 100% RPM
- (5) MILITARY POWER
- (6) TAKEOFF GROSS WEIGHT LESS 40% INITIAL FUEL
- (7) MAXIMUM ALTITUDE FLIGHT ENVELOPE
- (8) NORMAL RATED POWER
- (9) FLIGHT ENVELOPE SPEED, V_{II}



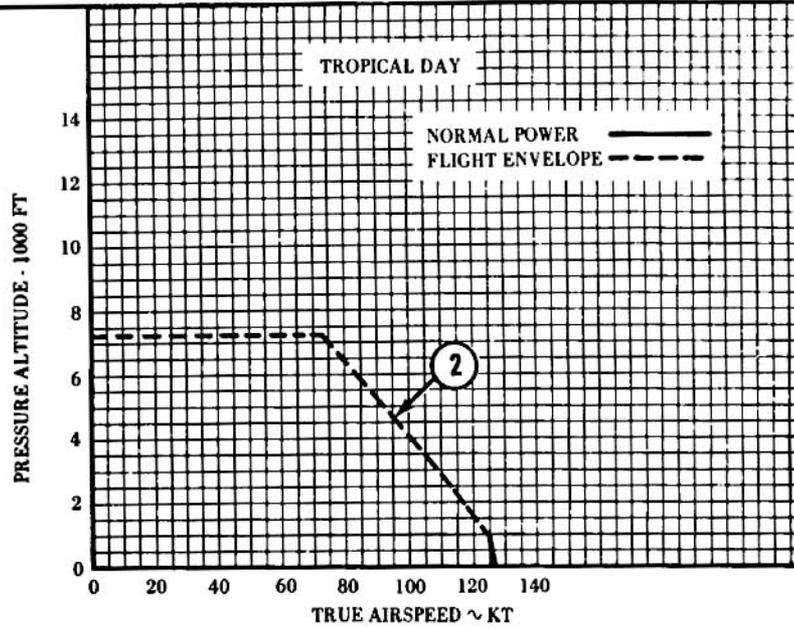
○ LOADING CONDITION COLUMN NUMBER

STANDARD AIRCRAFT CHARACTERISTICS, NAVVEPS FORM 13100/4F (Rev. 7-65)

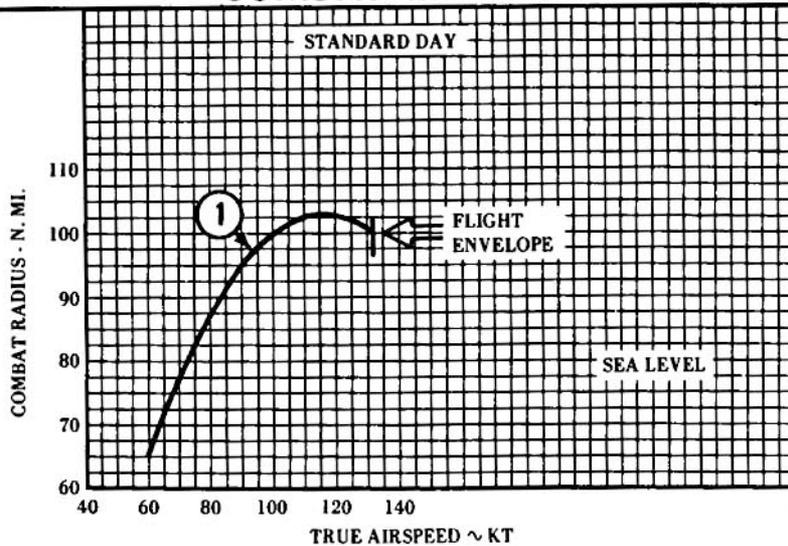
SPEED



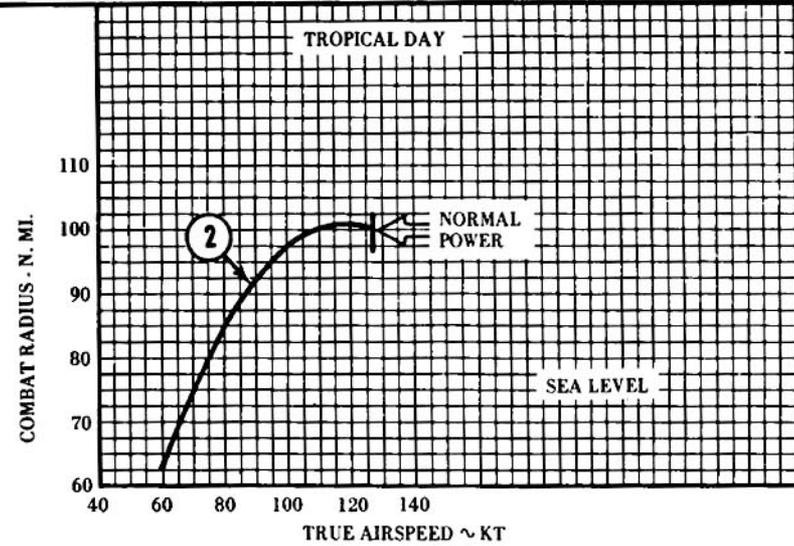
SPEED



COMBAT RADIUS



COMBAT RADIUS



STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100-4F (Rev. 7-65)

○ LOADING CONDITION COLUMN NUMBER

NOTES

MISSION DEFINITIONS

- (1) PRIMARY DESIGN MISSION (GW = 19569 LB)
1. WARMUP 7 MINUTES @ NRP (ALLOWS FOR WARMUP AT REMOTE BASE).
 2. TAKEOFF AND CRUISE OUT 100 NMI AT 132 KT AT SEA LEVEL.
 3. LAND AND UNLOAD CARGO OR TROOPS.
 4. TAKEOFF, CRUISE IN 100 NMI AT 132 KT AT SEA LEVEL.
 5. LAND WITH 10% OF INITIAL FUEL IN RESERVE.
- (2) DESIGN MISSION (GW = 19515 LB) USE TROPICAL DAY
1. WARMUP 7 MINUTES @ NRP (ALLOWS FOR WARMUP AT REMOTE BASE).
 2. TAKEOFF, CRUISE OUT 100 NMI AT 126 KT AT SEA LEVEL.
 3. LAND AND UNLOAD CARGO OR TROOPS.
 4. TAKEOFF, CRUISE IN 100 NMI AT 126 KT AT SEA LEVEL.
 5. LAND WITH 10% OF INITIAL FUEL IN RESERVE.
- (3) DESIGN MISSION (OVERLOAD GW = 21400 LB)
1. WARMUP 7 MINUTES @ NRP (ALLOWS FOR WARMUP AT REMOTE BASE).
 2. TAKEOFF, CRUISE OUT 100 NMI AT 118KT AVERAGE SPEED AT SEA LEVEL.
 3. LAND AND UNLOAD CARGO OR TROOPS.
 4. TAKEOFF, CRUISE IN 100 NMI AT 132 KT AT SEA LEVEL.
 5. LAND WITH 10% OF INITIAL FUEL IN RESERVE
- (4) RESERVE MISSION (GW = 16254 LB)
1. WARMUP 7 MINUTES @ NRP (ALLOWS FOR WARMUP AT REMOTE BASE).
 2. TAKEOFF CRUISE OUT 109 NMI AT 132 KT AT SEA LEVEL.
 3. LAND AND PICK UP 15 LITTER PATIENTS.
 4. TAKEOFF CRUISE IN 109 NMI AT 132 KT AT SEA LEVEL.
 5. LAND WITH 10% OF INITIAL FUEL IN RESERVE.
- (5) RETRIEVAL MISSION (GW = 15766 LB)
1. WARMUP 7 MINUTES @ NRP (ALLOWS FOR WARMUP AT REMOTE BASE).
 2. TAKEOFF, CRUISE OUT 96 NMI AT NRP/V_H.
 3. LAND, PICK UP PAYLOAD (EXTERNAL).
 4. CRUISE IN 96 NMI at 100 KT.
 5. LAND WITH 10% FUEL IN RESERVE.
- (6) FERRY MISSION (GW = 21400 LB)
1. WARMUP 2 MINUTES AT NRP.
 2. TAKEOFF, CLIMB TO 2000 FT AT BEST CLIMB SPEED.
 3. CRUISE-CLIMB FROM 2000 FT TO 5500 FT AT 110 KT.
 4. CRUISE OUT AT 5500 FT AT 110 KT.
 5. LAND WITH 10% INITIAL FUEL IN RESERVE.

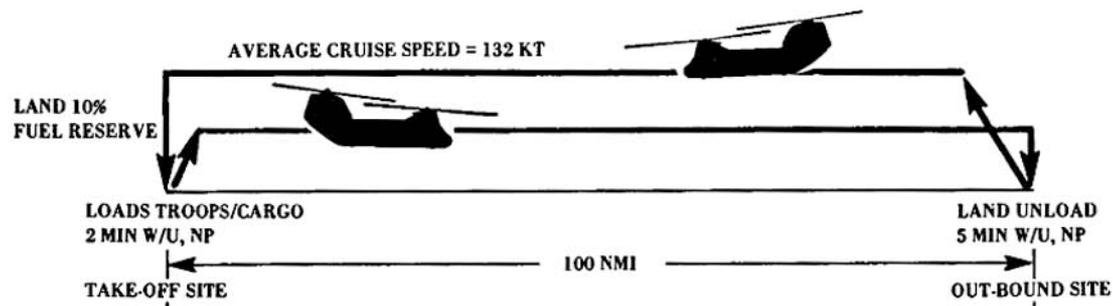


LOADING CONDITION COLUMN NUMBER

MISSION PROFILE

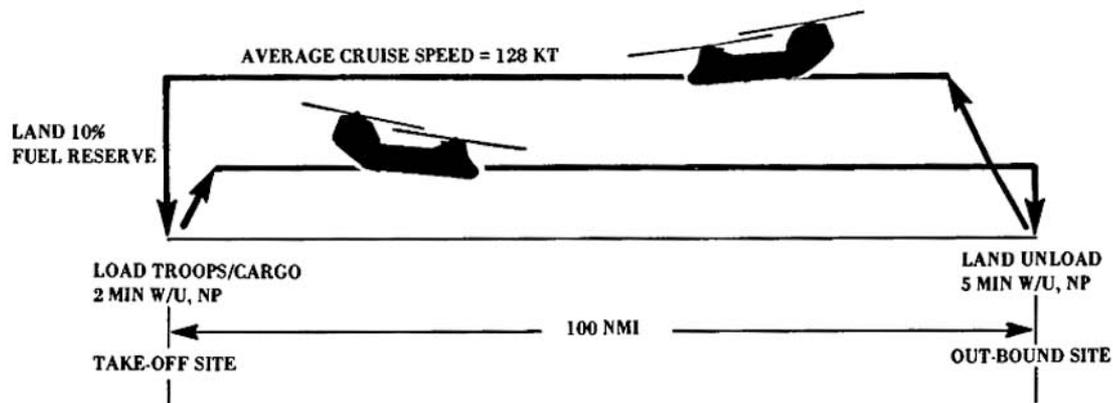
①

DESIGN MISSION GW = 19569 LB
SEA LEVEL/STANDARD DAY



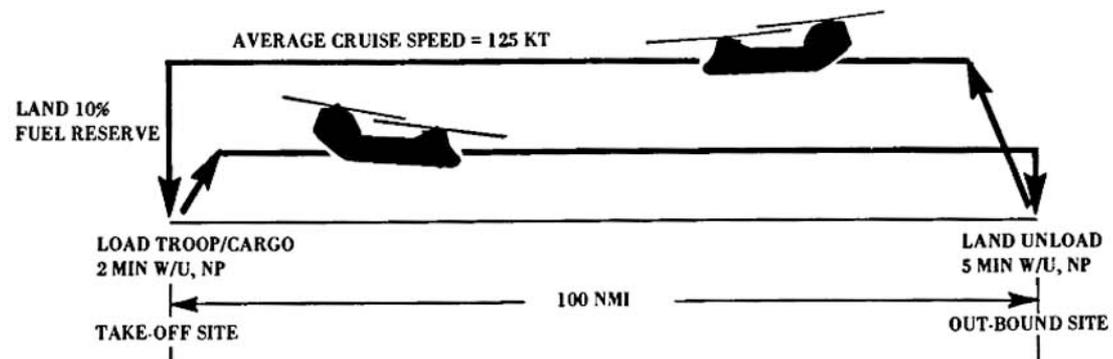
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DESIGN MISSION GW = 19515 LB
SEA LEVEL/TROPICAL DAY



③

DESIGN MISSION GW = 21,400 LB
(OVER LOAD)
SEA LEVEL/STANDARD DAY



MISSION PROFILE

