



# STANDARD AIRCRAFT CHARACTERISTICS

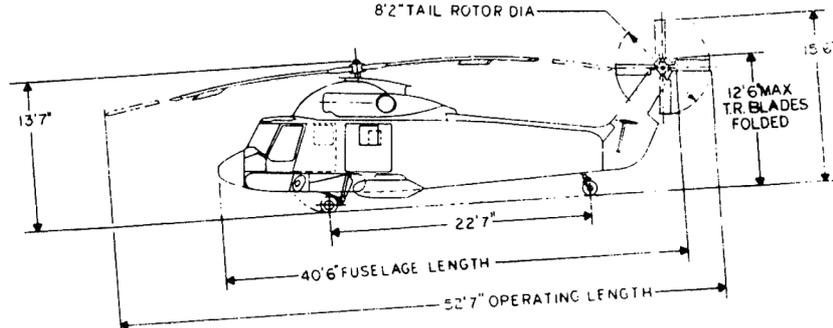
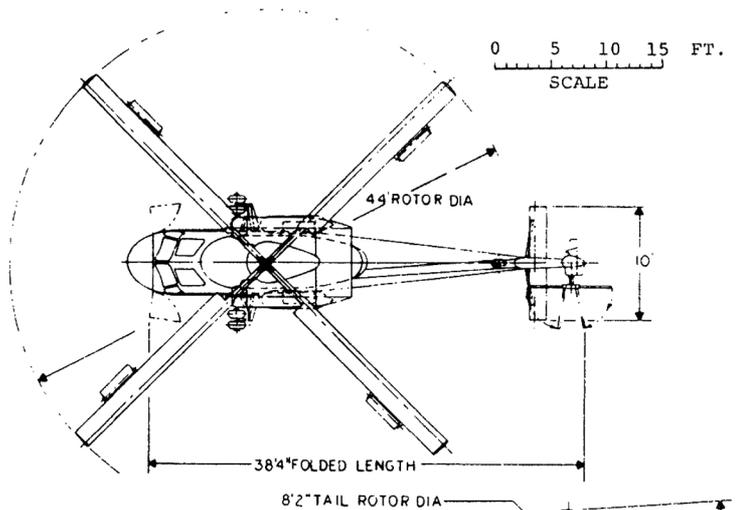
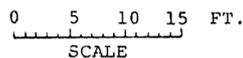
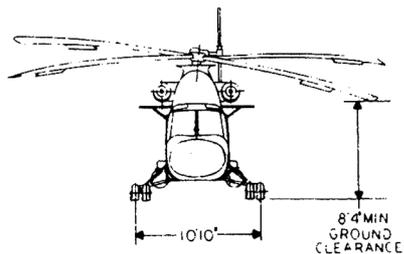
## HH-2D (101 ROTOR) "SEASPRITE"

KAMAN

NAVAL AIR SYSTEMS COMMAND  
NAVY DEPARTMENT

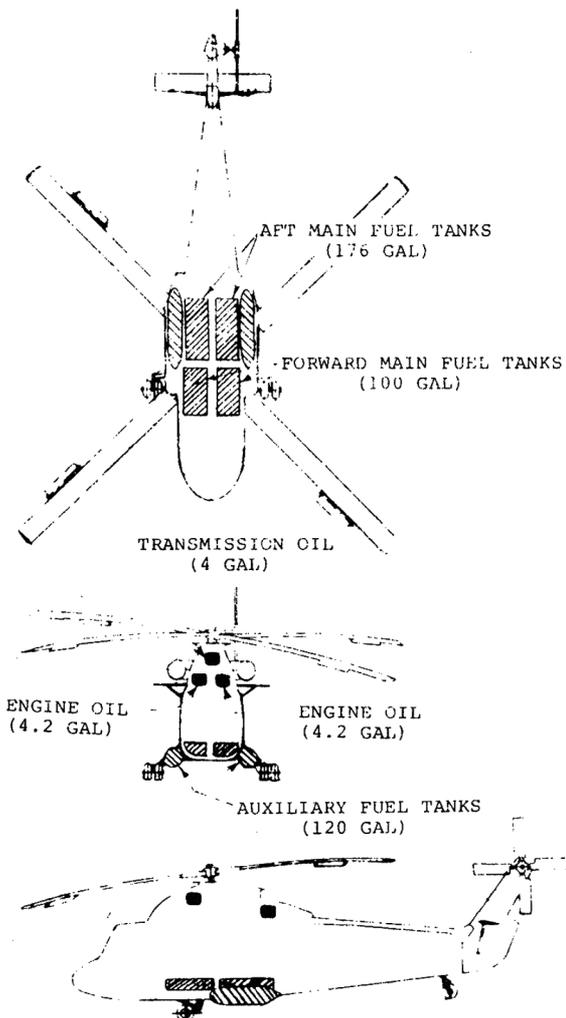
MAIN ROTOR

DISC AREA 1520.3 SQ. FT.  
BLADE AREA 158.3 SQ. FT.  
AIRFOIL SECTION NACA 23012  
ENGINE/ROTOR GEAR RATIO 67.4:1



DESCRIPTIVE ARRANGEMENT

NAVAL AIR SYSTEMS COMMAND  
NAVY DEPARTMENT



TANKAGE

POWER PLANT	MISSION AND DESCRIPTION	WEIGHTS																																	
<p>NO. &amp; MODEL . . . . . (2) T58-GE-8F MFR . . . . . GENERAL ELECTRIC</p> <p><u>GEAR REDUCTION RATIOS</u></p> <p>ENGINE SPEED DECREASER . . . . . 0.31 MAIN ROTOR . . . . . 0.048 TAIL ROTOR . . . . . 0.28</p> <p><b>RATINGS</b></p> <table border="1"> <thead> <tr> <th></th> <th><u>SHP</u></th> <th><u>RPM</u></th> <th><u>ALT</u></th> </tr> </thead> <tbody> <tr> <td>MIL</td> <td>1350</td> <td>19500</td> <td>S.S.L.</td> </tr> <tr> <td>NORM</td> <td>1150</td> <td>19500</td> <td>S.S.L.</td> </tr> </tbody> </table> <p>G.E. ENGINE SPEC. NO. E1152 JULY 14, 1968</p>		<u>SHP</u>	<u>RPM</u>	<u>ALT</u>	MIL	1350	19500	S.S.L.	NORM	1150	19500	S.S.L.	<p>THE PRIMARY MISSION OF THE HH-2D HELICOPTER IS TO ACCOMPLISH GENERAL UTILITY TASKS, WHICH INCLUDE PLANE GUARD FOR CARRIER AIRCRAFT OPERATIONS, SEARCH AND RESCUE MISSIONS, GUN FIRE OBSERVATION, RECONNAISSANCE, COURIER SERVICE, PERSONNEL TRANSFER FROM SHIP TO SHIP TO SHORE, EVACUATION OF WOUNDED, RADIOLOGICAL RECONNAISSANCE, EMERGENCY SUPPLY AND RE-SUPPLY, TACTICAL AIR CONTROLLER OPERATIONS.</p> <p>THE HH-2D WITH THE 101 ROTOR IS A TWIN TURBOSHAFT ENGINE POWERED, SINGLE FOUR-BLADED ROTOR HELICOPTER WITH AN ANTI-TORQUE TAIL ROTOR. THE MAIN ROTOR IS CONTROLLED BY AERODYNAMIC SERVO FLAPS ACTUATED BY CONVENTIONAL PILOT'S COCKPIT CONTROLS. THE "101 MAIN ROTOR" SYSTEM PROVIDES SUBSTANTIAL SERVICE LIFE AND PERFORMANCE GAINS OVER THE CURRENT ROTOR. THESE GAINS RESULT FROM UNLOADING OF THE SERVO FLAP, SIMPLIFICATION OF THE ROTOR SYSTEM, AND 4 PERCENT MAIN ROTOR RPM INCREASE.</p> <p>THE HH-2D IS A GROWTH VERSION OF THE UH-2C MODEL WITH A GROSS WEIGHT INCREASE TO 12,800 POUNDS PROVIDING AN IMPROVED USEFUL LOAD CAPABILITY OF 5100 POUNDS. ASSOCIATED MODIFICATIONS INCLUDE A FOUR-BLADED TAIL ROTOR, DUAL WHEELED MAIN LANDING GEAR AND A 20 PERCENT INCREASE IN TRANSMISSION RATING.</p>	<table border="1"> <thead> <tr> <th><u>LOADING</u></th> <th><u>LBS.</u></th> <th><u>L.F.</u></th> </tr> </thead> <tbody> <tr> <td>EMPTY</td> <td>7684</td> <td></td> </tr> <tr> <td>BASIC</td> <td>7801</td> <td></td> </tr> <tr> <td>DESIGN</td> <td>9876</td> <td>2.6</td> </tr> <tr> <td>OVERLOAD</td> <td>12800</td> <td>2.0</td> </tr> <tr> <td>MAX. T.O.</td> <td>12800</td> <td>2.0</td> </tr> <tr> <td>MAX. LANDING</td> <td>12800</td> <td>2.0</td> </tr> </tbody> </table>	<u>LOADING</u>	<u>LBS.</u>	<u>L.F.</u>	EMPTY	7684		BASIC	7801		DESIGN	9876	2.6	OVERLOAD	12800	2.0	MAX. T.O.	12800	2.0	MAX. LANDING	12800	2.0
	<u>SHP</u>	<u>RPM</u>	<u>ALT</u>																																
MIL	1350	19500	S.S.L.																																
NORM	1150	19500	S.S.L.																																
<u>LOADING</u>	<u>LBS.</u>	<u>L.F.</u>																																	
EMPTY	7684																																		
BASIC	7801																																		
DESIGN	9876	2.6																																	
OVERLOAD	12800	2.0																																	
MAX. T.O.	12800	2.0																																	
MAX. LANDING	12800	2.0																																	
<b>ELECTRONICS</b>	<p><b>DEVELOPMENT</b></p> <p>FIRST FLIGHT (EST.) . . . . . MAY 1971 SERVICE USE (EST.) . . . . . JANUARY 1972</p>	<p><b>FUEL AND OIL</b></p> <p><b>FUEL</b></p> <table border="1"> <thead> <tr> <th><u>GAL.</u></th> <th><u>NO. TANKS</u></th> <th><u>LOCATION</u></th> </tr> </thead> <tbody> <tr> <td>276</td> <td>4</td> <td>FUSELAGE</td> </tr> <tr> <td>120</td> <td>2 (AUX)</td> <td>EXTERNAL</td> </tr> </tbody> </table> <p>FUEL GRADE - JP-4/JP-5 FUEL SPEC - MIL-T-5624</p> <p><b>OIL</b></p> <p>ENGINE (GAL.) . . . . . 8.4 SPEC: MIL-L-23699 TRANSMISSION (GAL.) . . . . . 4.0 SPEC: MIL-L-23699</p>	<u>GAL.</u>	<u>NO. TANKS</u>	<u>LOCATION</u>	276	4	FUSELAGE	120	2 (AUX)	EXTERNAL																								
<u>GAL.</u>		<u>NO. TANKS</u>	<u>LOCATION</u>																																
276	4	FUSELAGE																																	
120	2 (AUX)	EXTERNAL																																	
<p>UHF RADIO SET . . . . . AN/ARC-52 MHF RADIO SET . . . . . AN/ARC-39 RADAR IDENT. . . . . AN/APX-6B L.F. ADF . . . . . AN/ARN-59 TACAN RADIO . . . . . AN/ARN-52V DIRECTION FINDER (UHF) . . . . . AN/ARA-25 RADAR ALTIMETER . . . . . AN/APN-117 RAWS . . . . . APQ-107 GROUND SPEED SYSTEM . . . . . AN/APN-130 COMPASS . . . . . MA-1 ASE NAV COMPUTER . . . . . ASA-13A ICS . . . . . AN/AK-14 PLOTING BOARD . . . . . PT-429</p> <p>PROVISIONS: CODER GROUP . . . . . AN/APA-89</p>	<p><b>DIMENSIONS</b></p> <p><u>MAIN ROTOR</u></p> <table border="1"> <tbody> <tr> <td>DISC AREA . . . . .</td> <td>1520.5 SQ. FT.</td> </tr> <tr> <td>BLADE AREA . . . . .</td> <td>158.3 SQ. FT.</td> </tr> <tr> <td>NO. OF BLADES . . . . .</td> <td>4</td> </tr> <tr> <td>DIAMETER . . . . .</td> <td>44' 0"</td> </tr> <tr> <td>LENGTH (BLADES FOLDED) . . . . .</td> <td>38' 4"</td> </tr> <tr> <td>HEIGHT (MAX.) . . . . .</td> <td>15.6'</td> </tr> <tr> <td>TREAD . . . . .</td> <td>10' 10"</td> </tr> <tr> <td>STABILIZER AREA . . . . .</td> <td>14.5 SQ. FT.</td> </tr> </tbody> </table>	DISC AREA . . . . .	1520.5 SQ. FT.	BLADE AREA . . . . .	158.3 SQ. FT.	NO. OF BLADES . . . . .	4	DIAMETER . . . . .	44' 0"	LENGTH (BLADES FOLDED) . . . . .	38' 4"	HEIGHT (MAX.) . . . . .	15.6'	TREAD . . . . .	10' 10"	STABILIZER AREA . . . . .	14.5 SQ. FT.	<p><b>ACCOMMODATIONS</b></p> <p>PILOT . . . . . 1 CO-PILOT . . . . . 1 PASSENGERS . . . . . 4</p> <p>OR</p> <p>PILOT . . . . . 1 CO-PILOT . . . . . 1 ATTENDANT . . . . . 1 LITTERS . . . . . 2</p> <p>RESCUE HOIST CAP . . . . . 600 LB CARGO HOOK CAP . . . . . 4000 LB AFT CABIN VOLUME . . . . . 172 CU.FT. DEAD WEIGHT CARGO FLOOR LIMIT FOR 3G L.F. . . . . 200 LB/SQ.FT.</p>																	
DISC AREA . . . . .	1520.5 SQ. FT.																																		
BLADE AREA . . . . .	158.3 SQ. FT.																																		
NO. OF BLADES . . . . .	4																																		
DIAMETER . . . . .	44' 0"																																		
LENGTH (BLADES FOLDED) . . . . .	38' 4"																																		
HEIGHT (MAX.) . . . . .	15.6'																																		
TREAD . . . . .	10' 10"																																		
STABILIZER AREA . . . . .	14.5 SQ. FT.																																		

## PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		1. UTILITY	2. RESCUE	3. CARGO	4. FERRY
TAKE-OFF WEIGHT	LB.	10182	11530	12800	11130
FUEL INTERNAL/EXTERNAL (JP-5)	LB.	1877 /-	1877/816	532/-	1877/816
PAYLOAD	(E) LB.	-/800	400/1200	3963	-
DISC LOADING	LB./SQ.FT.	6.7	7.6	8.4	7.3
VERTICAL RATE OF CLIMB AT S.L. (B)	FPM.	2300	1540	810	1760
ABSOLUTE HOVERING CEILING (OGE) (A)	FT.	15600	11700	8300	12800
MAX. RATE OF CLIMB AT S.L. (B)	FPM.	2450	2120	1820	2210
OEI SERVICE CEILING (100 FPM) (A) (D)	FT.	15000	11000	7500	12000
SPEED AT S.L. (B)	KN.	149	143	145	144
MAX. SPEED/ALTITUDE	(C) KN/FT.	159/7000	152/7000	152/5000	153/7000
COMBAT RADIUS	N.MI.	108	152	-	-
AVERAGE CRUISING SPEED	KN.	130	130	-	-
CRUISING ALTITUDE	FT.	5000	5000	-	-
RANGE	N.MI.	237	325	50	368
AVERAGE CRUISING SPEED	KN.	130	130	130	130
CRUISING ALTITUDE	FT.	5000	5000	SL	10000
MAXIMUM ENDURANCE	HRS.	2.4	3.3	-	-
ENDURANCE SPEED	KN.	70	70	-	-
ENDURANCE ALTITUDE	FT.	SL	SL	-	-

## NOTES

(A) MILITARY POWER

(B) MAXIMUM CONTINUOUS TORQUE (SHOWN WHEN LESS THAN NORMAL POWER)

(C) NORMAL POWER

(D) ONE ENGINE INOPERATIVE

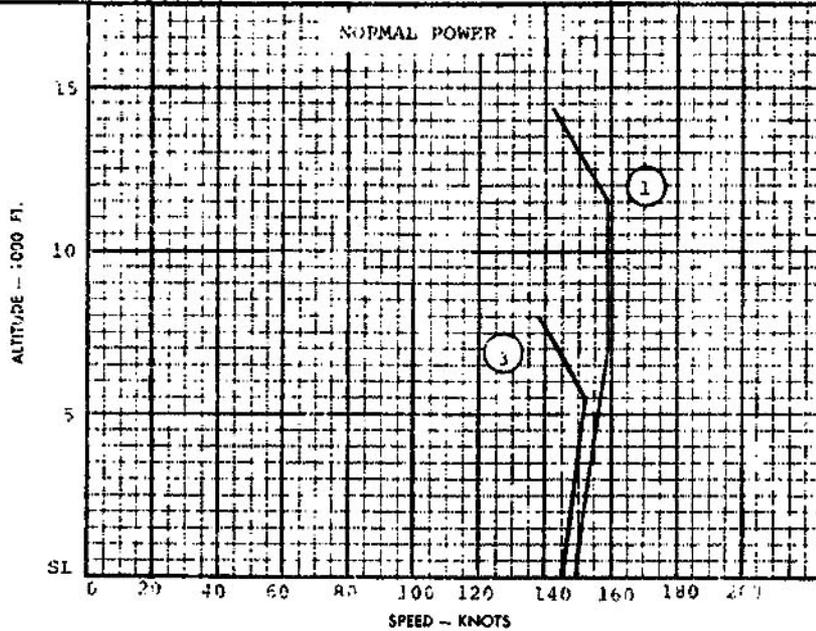
(E) OUT/RETURN PAYLOAD FOR RADIUS MISSIONS

PERFORMANCE BASIS: KAMAN FLIGHT TEST DATA

ENGINE SPECIFICATION POWER AND FUEL FLOWS

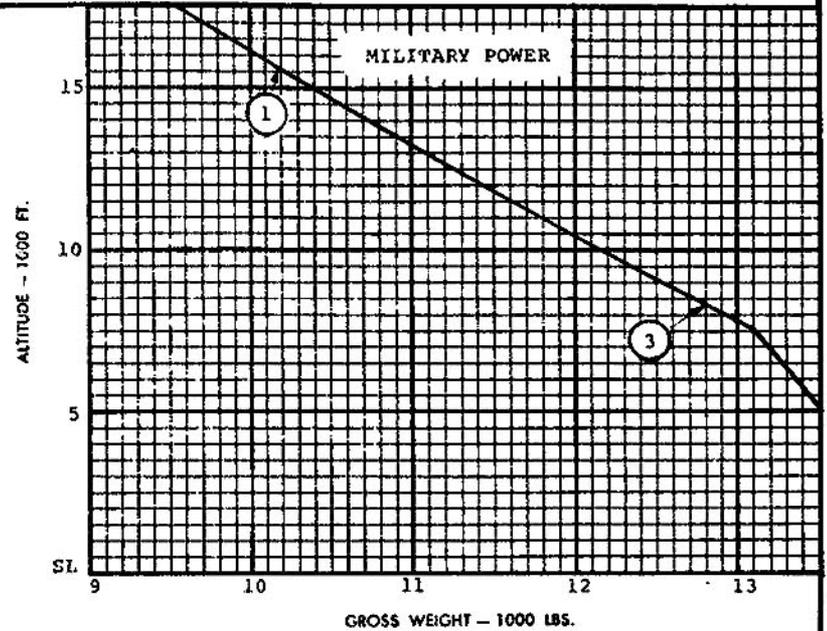
**SPEED**

NORMAL POWER



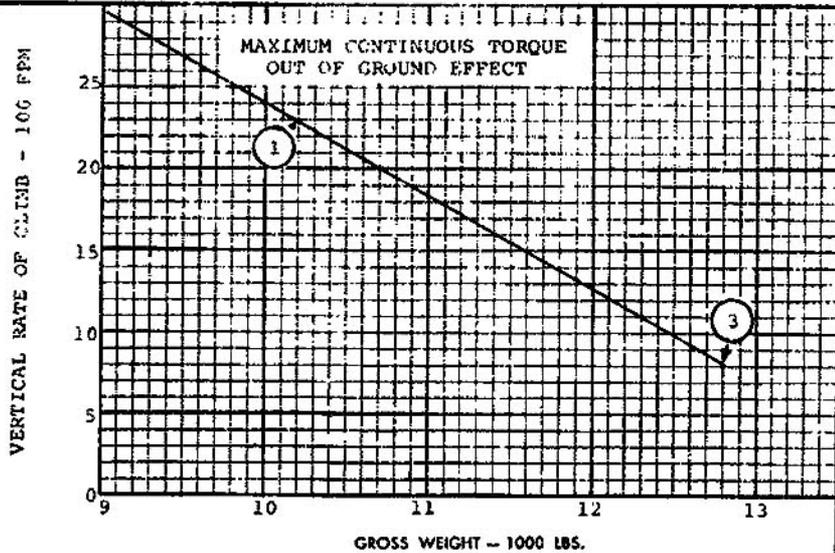
**HOVER CEILING**

MILITARY POWER



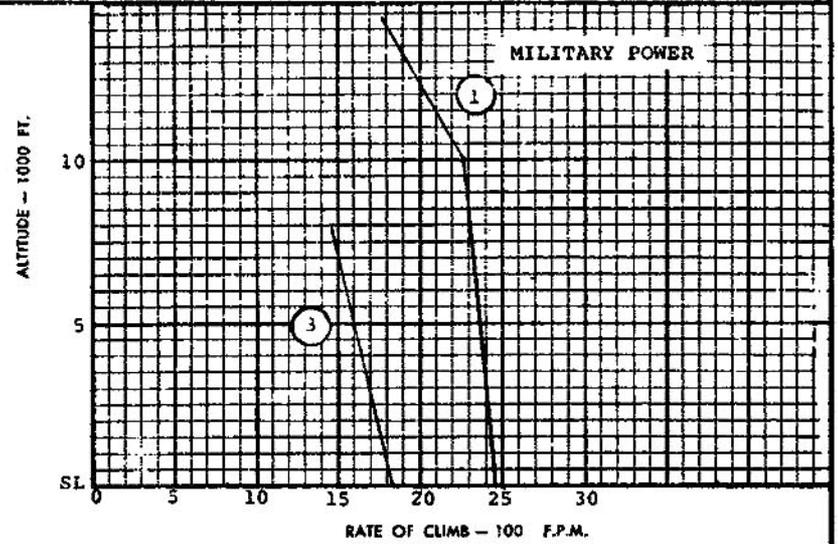
**VERTICAL RATE OF CLIMB**

MAXIMUM CONTINUOUS TORQUE  
OUT OF GROUND EFFECT



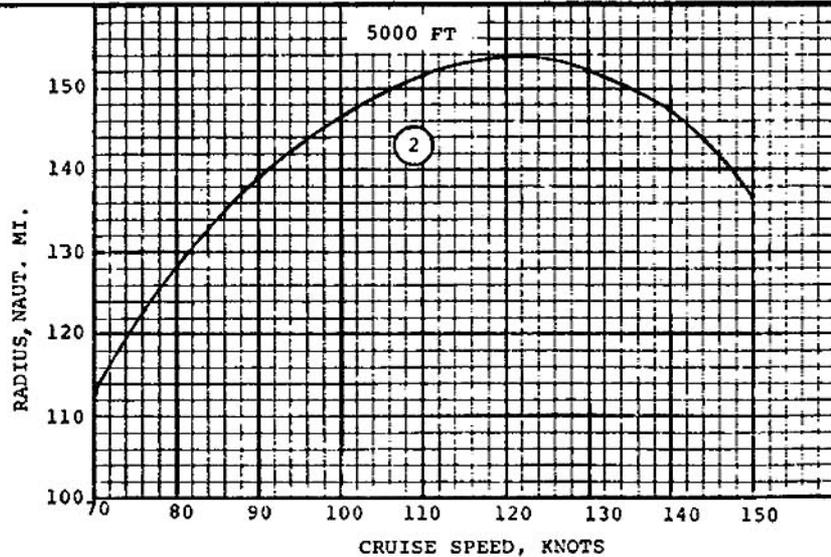
**CLIMB**

MILITARY POWER

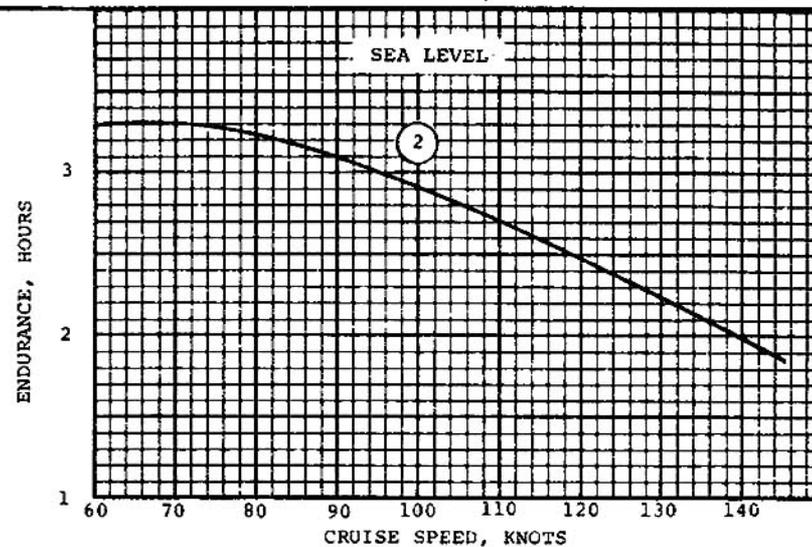


○ LOADING CONDITION COLUMN NUMBER

RADIUS



ENDURANCE



○ LOADING CONDITION COLUMN NUMBER

## NOTES

① ②

## RADIUS MISSION

WARM-UP AND TAKE-OFF: 2 MINUTES  
AT SEA LEVEL AT MAXIMUM  
CONTINUOUS TORQUE

CLIMB: ON COURSE TO 5000 FT

CRUISE OUT: AT 5000 FT AND AT  
SPEED FOR BEST RANGE

DESCEND: TO SEA LEVEL

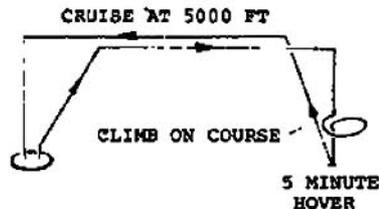
HOVER: 5 MINUTES AT SEA LEVEL  
WHILE PICKING UP 800 LB PAYLOAD

CLIMB: ON COURSE TO 5000 FT

CRUISE BACK: AT 5000 FT AND AT  
SPEED FOR BEST RANGE

DESCEND: TO SEA LEVEL

RESERVE: 10 PERCENT OF INITIAL  
FUEL



① ② ③ ④

## RANGE MISSION

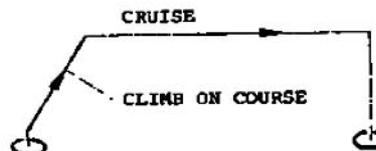
WARM-UP AND TAKE-OFF: 2 MINUTES  
AT SEA LEVEL AT MAXIMUM  
CONTINUOUS TORQUE

CLIMB: ON COURSE TO CRUISE  
ALTITUDE

CRUISE: AT SPEED FOR BEST RANGE

DESCEND: TO SEA LEVEL

RESERVE: 10 PERCENT OF INITIAL  
FUEL



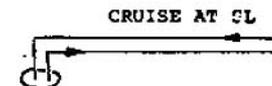
① ②

## ENDURANCE MISSION

WARM-UP AND TAKE-OFF: 2 MINUTES  
AT SEA LEVEL AT MAXIMUM CONTINUOUS  
TORQUE

CRUISE: AT SPEED FOR MAXIMUM  
ENDURANCE AT SEA LEVEL

RESERVE: 10 PERCENT OF INITIAL  
FUEL



LOADING CONDITION COLUMN NUMBER