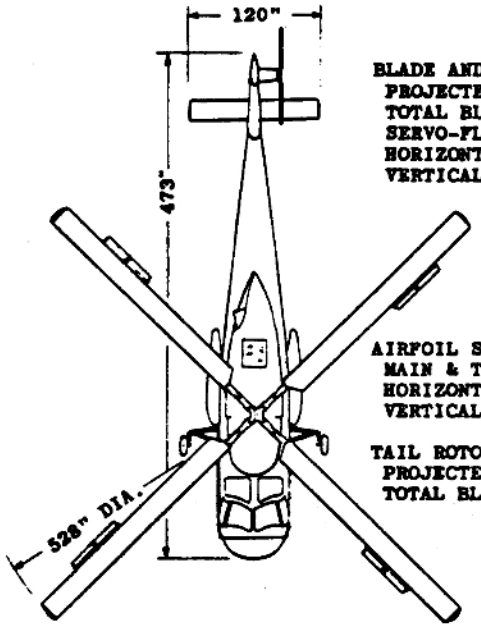
STANDARD AIRCRAFT CHARACTERISTICS

HU2K-1

KAMAN

Standard Aircraft Characteristics NAVAER 1335A (REV. 1-55)



BLADE AND CONTROL SURFACE AREAS

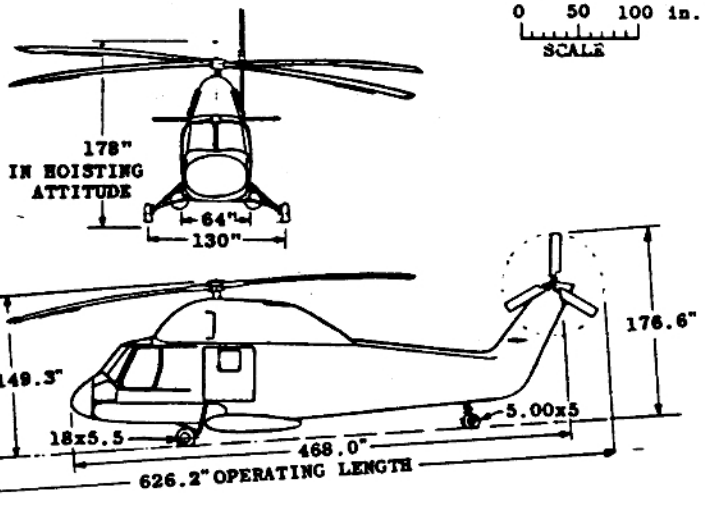
PROJECTED DISC AREA	1520.5 SQ.FT.
TOTAL BLADE AREA	134.2 SQ.FT.
SERVO-FLAPS, TOTAL	9.0 SQ.FT.
HORIZONTAL TAIL	15.0 SQ.FT.
VERTICAL FIN	28.1 SQ.FT.

AIRFOIL SECTIONS

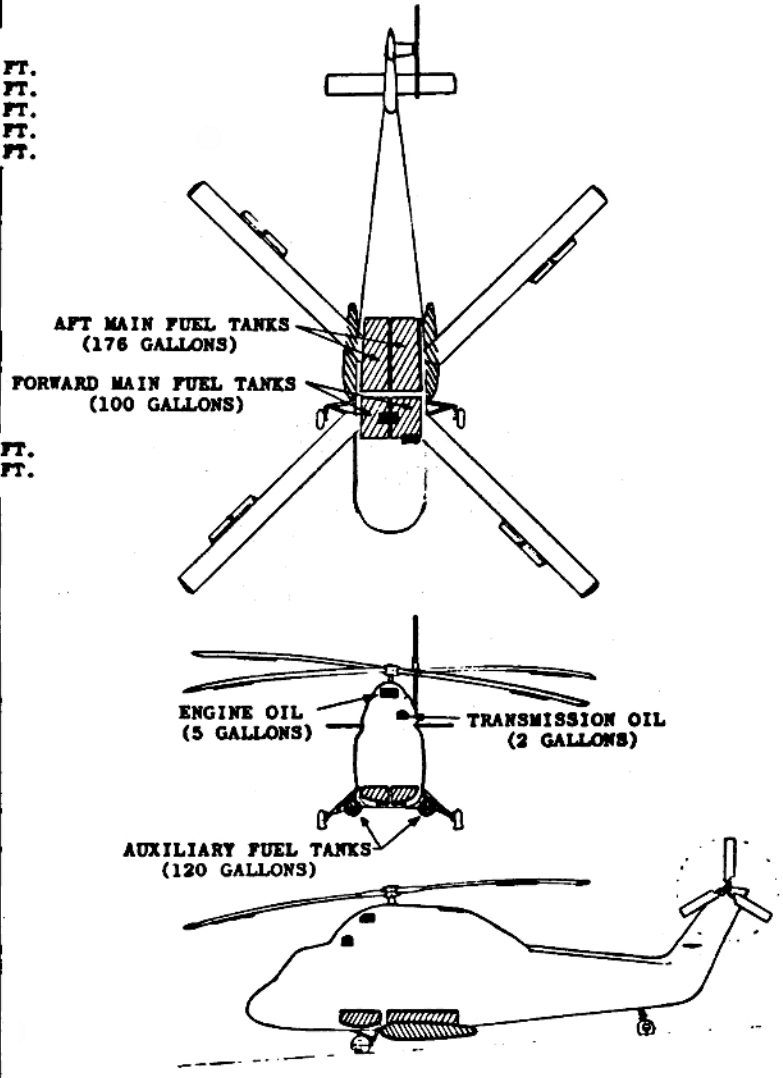
MAIN & TAIL ROTOR	NACA63, -012
HORIZONTAL TAIL	.0012
VERTICAL FIN	.0025

TAIL ROTOR SURFACE AREAS

PROJECTED DISC AREA	50.4 SQ.FT.
TOTAL BLADE AREA	7.0 SQ.FT.



DESCRIPTIVE ARRANGEMENT



TANKAGE INSTALLATION

Standard Aircraft Characteristics NAVAER 1335B (Rev. 1-55)

POWER PLANT

NO & MODEL ..... (1)YT58-GE-6
MFR ..... General Electric
ROTOR GEAR RATIO 0.0463
TAIL ROTOR RATIO 0.091

RATINGS

	ESHP	@ RPM	@ ALT
MIL	1050	19,500	SSL
NORM.	900	19,500	SSL

Eng. Spec. No. E-1013
of 11 April 1957

ACCOMMODATIONS

PILOT 1
CO-PILOT 1
PASSENGERS 4

or

PILOT 1
CO-PILOT 1
ATTENDANT 1
LITTERS 2

MISSION AND DESCRIPTION

The primary mission of the HU2K-1 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 or ship to shore, evacuation of wounded, radiological reconnaissance, aerial spraying of insecticides, emergency supply and re-supply, wire-laying and tactical air controller operations.

The HU2K-1 is a turbo-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.

DEVELOPMENT

First Flight ..... July 1959
Service Use ..... March 1961

DIMENSIONS

DISC AREA ..... 1520.5 sq. ft.
BLADE AREA ..... 134.2 sq. ft.
NO. BLADES (Main)..... 4
ROTOR DIAMETER..... 44' - 0"
LENGTH (Blades folded)..... 39' - 0"
HEIGHT (Max.) ..... 12' - 5.3"
TREAD ..... 10' - 10"
STABILIZER AREA ..... 15 sq. ft.

WEIGHTS

LOADING	LBS.	L.F.
EMPTY	5400	.....
BASIC	5457	.....
DESIGN	7726	2.92
MAX. T.O.	9400	2.38
MAX. LANDING	9400	2.38

FUEL AND OIL

GALS	NO. TANKS	LOCATION
276	4	Fuselage
120	2	External

FUEL GRADE JP-4
FUEL SPEC (applicable)... MIL-F-5624

OIL

CAPACITY (Gals) 7
SEPC (applicable) MIL-L-7808

ELECTRONICS

UHF RADIO SET AN/ARC-52
MHF RADIO SET AN/ARC-39
RADAR IDENT. SET AN/APX-6B
CODER GROUP AN/APA-89
VIDEO CODER KY-81/APA-89
LOW FREQUENCY ADF AN/ARN-59
RADAR ALTIMETER AN/APN-117
RADIO SET AN/ARN-21
DIRECTION FINDER (UHF) ... AN/ARA-25
NAVIGATION COMPUTER GROUP. AN/ASA-13A
RADAR NAVIGATION SET AN/APN-130

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION			(1) UTILITY 1 PILOT 1 CO-PILOT	(2) OBSERVATION (OVERLOAD) 1 PILOT, 1 CO-PILOT & PASSENGERS	(3) FERRY 1 PILOT 1 CO-PILOT		
TAKE-OFF WEIGHT		lb.	7726	9400	8480		
Fuel internal/external		lb./lb.	1796/—	1796/754	1796/754		
Payload		lb.	800	0	0		
Disc loading		lb./sq.ft.	5.08	6.17	5.57		
Vertical rate of climb at S.L.	(A)	fpm./fpm.	(C) 1160/1740 (D)	(C) —/530 (D)	(C)570/1270 (D)		
Absolute hovering ceiling	(A)	ft./ft.	(C)6700/10000 (D)	(C) —/3750 (D)	(C)3250/7100 (D)		
Max. rate of climb at S.L.	(B)	fpm.	1460	850	1220		
Service ceiling (100 fpm)	(B)	ft.	19000	12600	16100		
Speed at S.L.	(B)	kn.	143	137	140		
Max. speed/altitude	(B)	kn./ft.	144/3000	137/S.L.	140/S.L.		
Combat radius		n.mi.	198	—	—		
Average cruising speed		kn.	125	—	—		
Cruising altitude		ft.	S.L.	—	—		
Max. endurance		hr.	4.3	6.0	6.4		
Average cruising speed		kn.	61	62	60		
Cruising altitude		ft.	S.L.	S.L.	S.L.		
Ferry range		n.mi.	—	—	555		
Average cruising speed		kn.	—	—	118		
Cruising altitude		ft.	—	—	S.L.		

NOTES

(A) MILITARY RATED POWER
(B) NORMAL RATED POWER
(C) OUT OF GROUND EFFECT
(D) IN GROUND EFFECT

ALL PERFORMANCE DATA FOR LOADING CONDITIONS (2) AND (3) ARE FOR "TANKS ON" CONFIGURATION

MAXIMUM RADIUS PROBLEM

WARM-UP AND TAKE-OFF: 7 minutes at sea level at normal power (including miscellaneous allowances for hovering, etc., at objective).
CRUISE OUT: At not less than 125 knots at sea level at not more than 95% normal power
HOVER: At objective and pick up 800 pounds payload (no fuel consumed).
CRUISE BACK: At not less than 125 knots at sea level at not more than 95% normal power.
RESERVE: 10% of initial fuel load.

PERFORMANCE BASIS: Calculations

RANGE and ENDURANCE are based on engine specification specific fuel consumption increased 5%

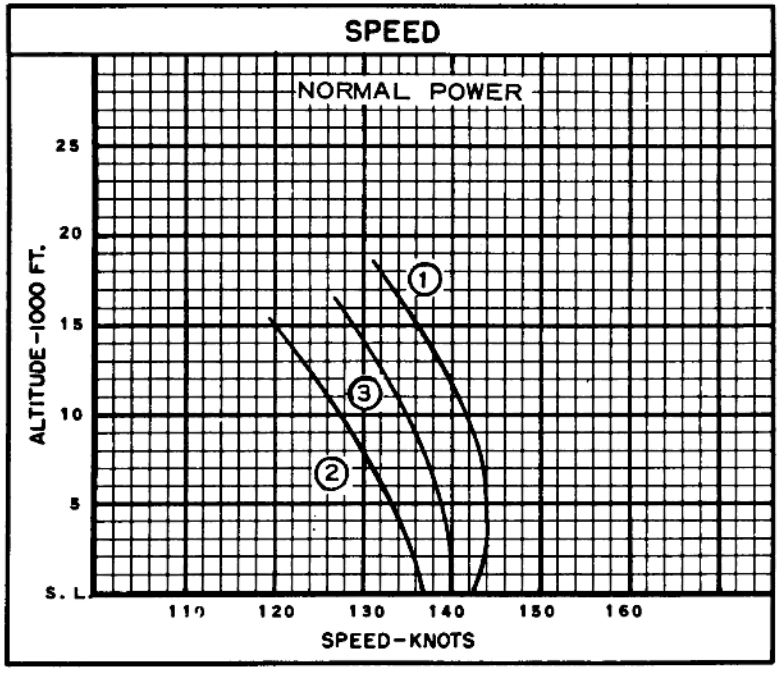
MAXIMUM ENDURANCE PROBLEM

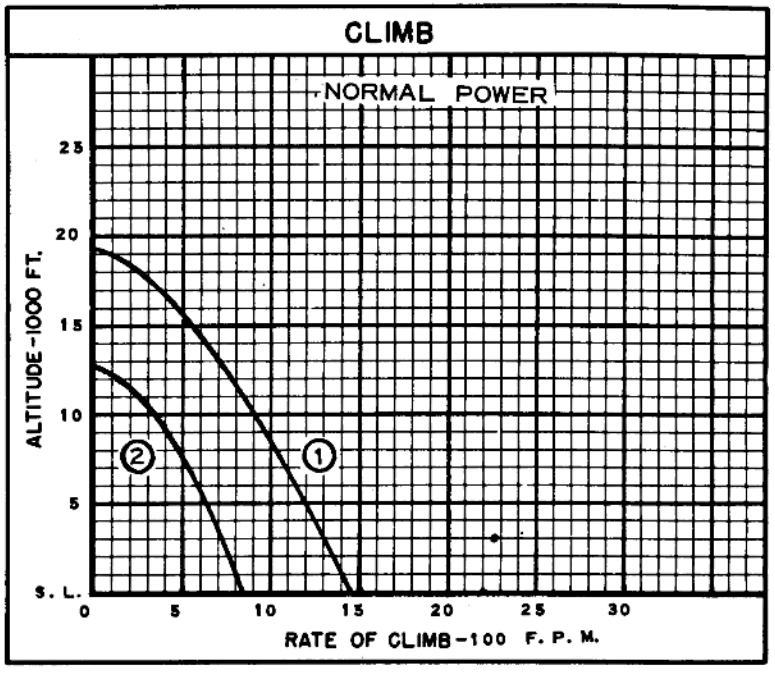
WARM-UP AND TAKE-OFF: 3 minutes at sea level at normal rated power
CRUISE: At speed for maximum endurance at sea level
RESERVE: 10% of initial fuel load

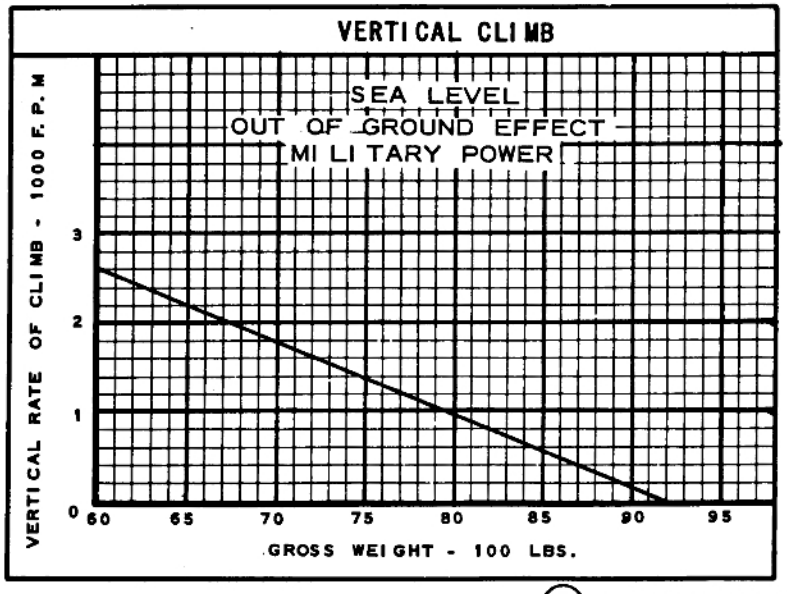
FERRY RANGE PROBLEM

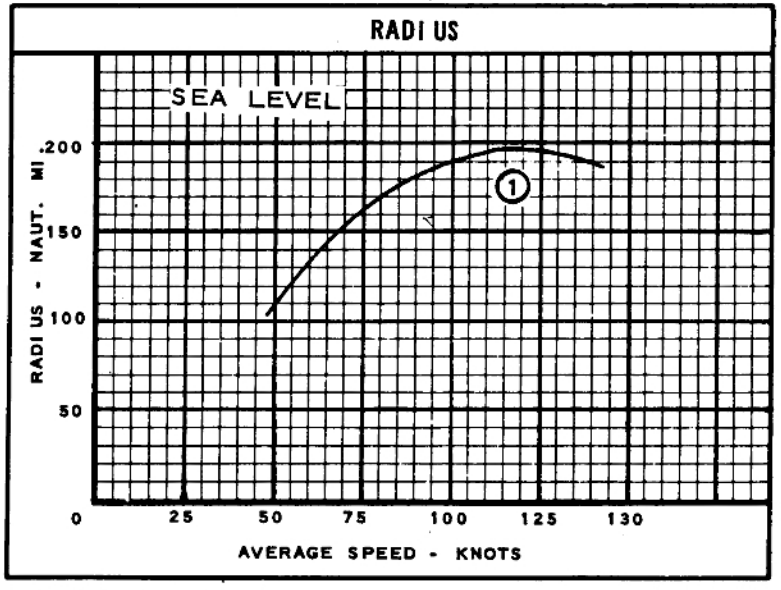
WARM-UP AND TAKE-OFF: 3 minutes at sea level at normal rated power
CRUISE: At speed for best range at sea level
RESERVE: 10% of initial fuel load

NAVAER-1335G (Rev. 1-55)







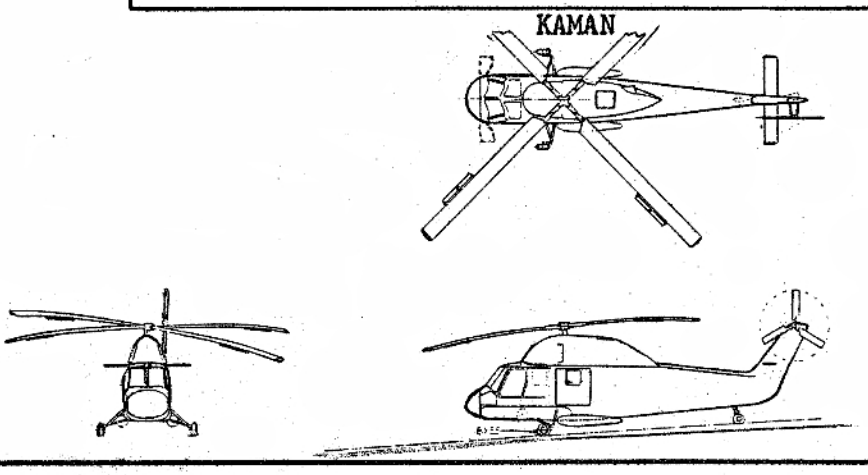


◯ LOADING CONDITION COLUMN NUMBER

CHARACTERISTICS SUMMARY

UTILITY HELICOPTER HU2K-1

KAMAN



DISC AREA 1520.5 sq. ft.

ROTOR DIA. 44' - 0"

LENGTH 39' - 0"

HEIGHT 12'-10"(MAX

AVAILABILITY			PROCUREMENT				
NUMBER AVAILABLE			NUMBER DELIVERED IN FISCAL YEARS				
ACTIVE	RESERVE	TOTAL					

STATUS

FIRST FLIGHT ..... JULY 1959
SERVICE USE ..... MARCH 1961

ENGINES

(1) YT58-GE-6

	ESHP	RPM	ALT
MIL	1050	19500	SL
NORM	900	19500	SL

FEATURES

Aerodynamic Servo Flap Control System
IN-Flight Blade Tracking
Dual Controls

ARMAMENT

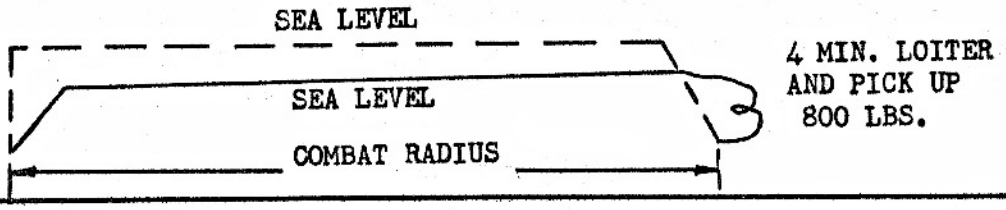
NONE

Crew 2
Passengers . . 4

NAVAER-1519E (Rev. 6-56)

CHARACTERISTICS SUMMARY

BASIC MISSION HU2K-1



PERFORMANCE		
ENDURANCE	**RANGE**	**SPEED**
3.17 hours	396 naut. mi.	144 knots at 3,000 ft.
125 knots avg.	125 knots avg.	knots at ft.
S.L. ft. alt.	S.L. ft. alt.	Normal Gross Weight Normal Power
FORWARD FLIGHT CLIMB	**SERVICE CEILING**	**HOVERING CEILING**
1460 ft./min. Sea Level, N. G. Wt., Normal Power	19,000 ft. 100 ft./min., N. G. Wt., Normal Power	6,700 ft. N. G. Wt., Maximum Power out of ground effect
		10,000 ft. N. G. Wt., Maximum Power in ground effect
LOAD	**WEIGHTS**	**VERTICAL CLIMB**
Fuel 276 gal.	Empty 5400 lbs.	1160 ft./min.
Internal 276 gal.	Normal Gross 7726 lbs.	Sea Level, N. G. Wt., Maximum Power
External 116 gal.	Overload 9400 lbs.	
Payload 800 lbs.		

NOTES

Performance Basis: Calculations
Range and Endurance are based on engine Spec SFC increased by 5%

NAVAER-1519D (Rev. 6-56)