



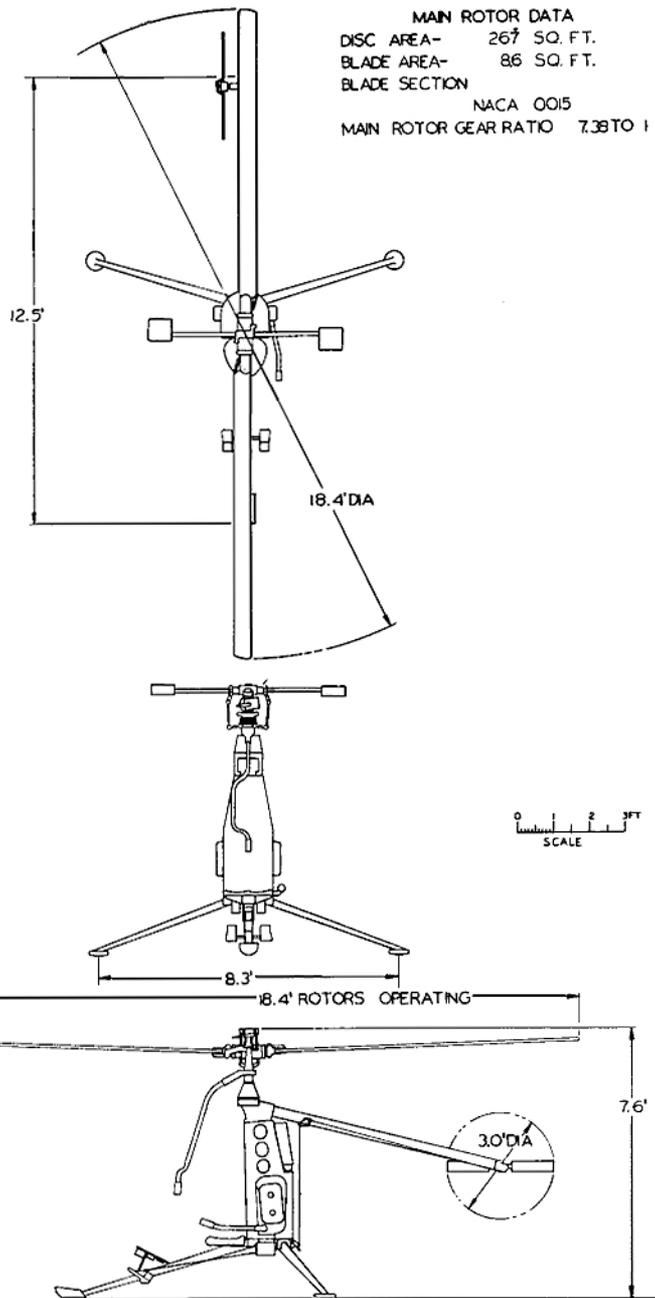
STANDARD AIRCRAFT CHARACTERISTICS

XROE-1

HILLER

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

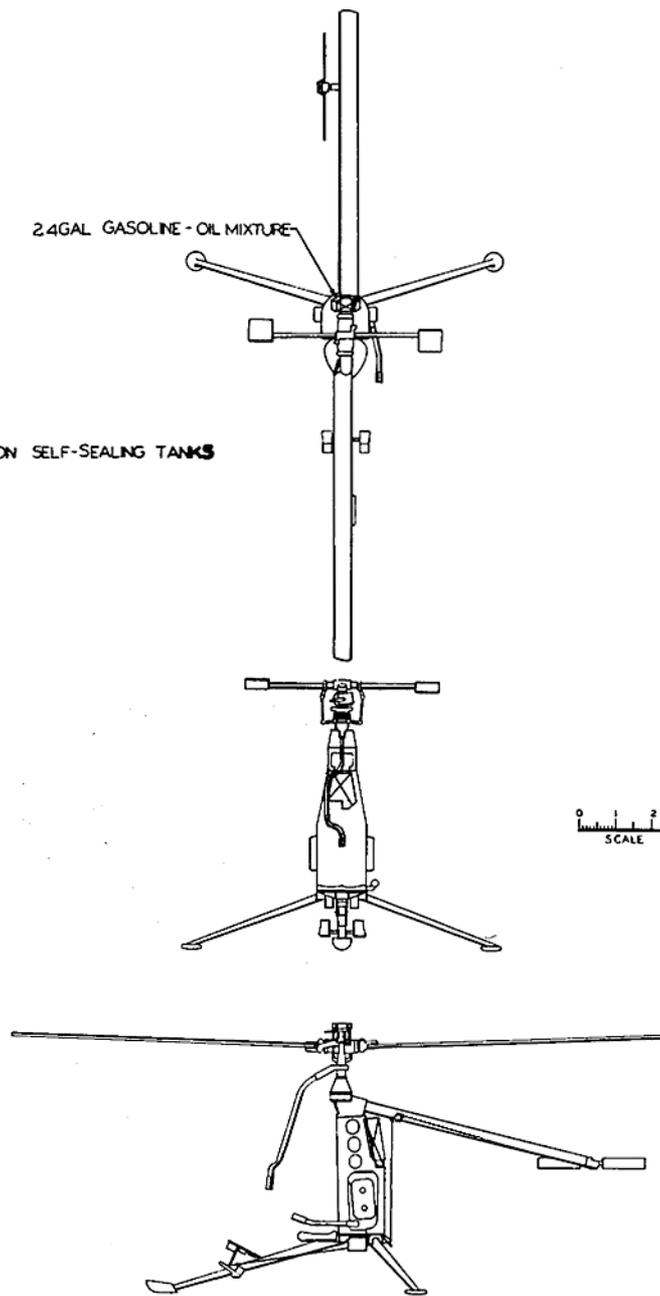
MAIN ROTOR DATA
 DISC AREA- 267 SQ. FT.
 BLADE AREA- 86 SQ. FT.
 BLADE SECTION NACA 0015
 MAIN ROTOR GEAR RATIO 7.38 TO 1



DESCRIPTIVE ARRANGEMENT

2.4 GAL GASOLINE-OIL MIXTURE

NON SELF-SEALING TANKS



ARMAMENT & TANKAGE

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

POWER PLANT

NO. AND MODEL(1) YO-65-2
 MANUFACTURER NELSON
 ROTOR GEAR RATIO 7.39:1
 TAIL ROTOR GEAR RATIO 1.23:1

RATINGS

	BHP	RPM	ALT
MILITARY	43	4000	SSL
NORMAL	43	4000	SSL

ENGINE MODEL SPEC NO. 58-101
 OF 13 AUG 1959

ORDNANCE

NONE

MISSION AND DESCRIPTION

The model XROE-1 is a single place, light weight, foldable and portable helicopter, powered by a 4-cylinder, 2-cycle, air cooled reciprocating engine. It is designed specifically for the use of the Marine Corps for liason, pilot rescue, escape, evasion, observation, and small unit tactical missions.

The configuration includes a single two-bladed main rotor a hiller rotormatic control rotor and an antitorque tail rotor. The transmission incorporates a single spiral bevel gear set and an overrunning clutch. The fuel system is of the gravity feed type.

This helicopter may be folded or assembled in the field in less than five minutes. For aerial drops to downed pilots or stranded troops the folded helicopter will fit into a streamlined container suitable for external carriage on fixed wing aircraft.

DEVELOPMENT

First Flight November 1956
 Service Use September 1959

DIMENSIONS

MAIN ROTOR DIA. 18.4 ft.
 DISC AREA 267 ft.²
 BLADE AREA 8.6 ft.²
 TAIL ROTOR DIA. 3.0 ft.
 MAX HEIGHT 7.4 ft.
 MAX LENGTH 18.4 ft.
 MAX. TREAD 8.9 ft.

WEIGHTS

LOADING	LBS.
EMPTY	307.5
BASIC	308.5
DESIGN	562
MAX. T.O.	562
MAX. LAND.	562

FUEL AND OIL

NO. TANKS	GALS	LOCATION
1	2.4	Behind Pilot
GRADE		80/87

OIL

GRADE	SAE NO. 30
(Mixed w/gas 16:1 by vol)	

ELECTRONICS

NONE

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) NORMAL				
TAKE-OFF WEIGHT	lb.	562			
Fuel	lb.	15			
Payload	lb.	240			
Disc loading	lb./sq.ft.	2.11			
Vertical rate of climb at S.L.	(A) fpm.	645			
Absolute hovering ceiling	(A) ft.	(B)1100/4000(C)			
Max. rate of climb at S.L.	(A) fpm.	825			
Service ceiling (100 fpm)	(A) ft.	10000			
Speed at S.L.	(A) kn.	60.5			
Max. speed/altitude	(A) kn./ft.	60.5/S.L.			
Combat range	n.mi.	19.2			
Average cruising speed	kn.	45			
Cruising altitude	ft.	S.L.			
Combat radius	n.mi.	9.5			
Average cruising speed/alt	kn/ft.	45/S.L.			
Max Endurance	hrs	0.45			
Average cruising speed/alt	kn./ft	30/S.L.			

NOTES

(A) TAKE-OFF POWER (= NORMAL RATED POWER)

(B) OUT OF GROUND EFFECT

(C) IN GROUND EFFECT

PERFORMANCE is based on NATESTCEN evaluation of the XROE-1

RANGE, RADIUS, AND ENDURANCE are based on NATESTCEN fuel consumption data

COMBAT RADIUS MISSION

WARM UP AND TAKE-OFF: 1 Minute at NRP

CRUISE OUT AND BACK: at sea level at cruise speed of 45 knots

RESERVE: 10% of initial fuel load

COMBAT RANGE MISSION

WARM UP AND TAKE-OFF: 1 Minute at NRP

CRUISE: at sea level at cruise speed of

45 knots

RESERVE: 10% of initial fuel load

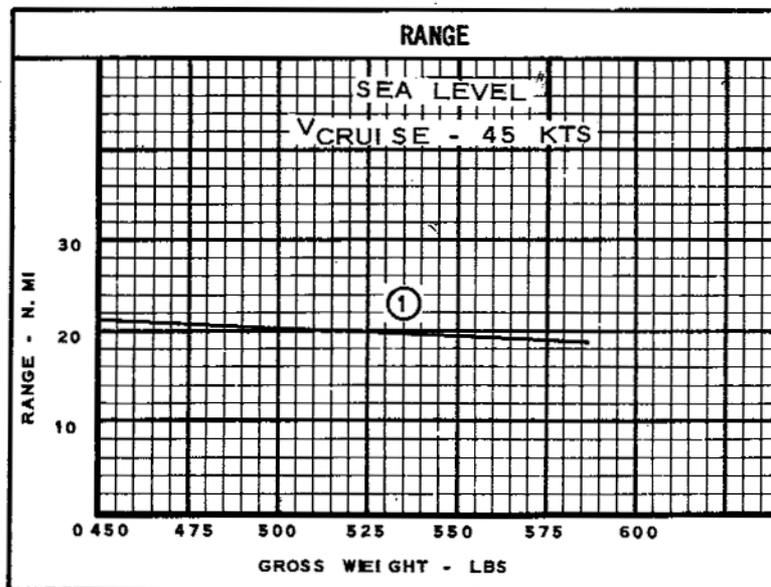
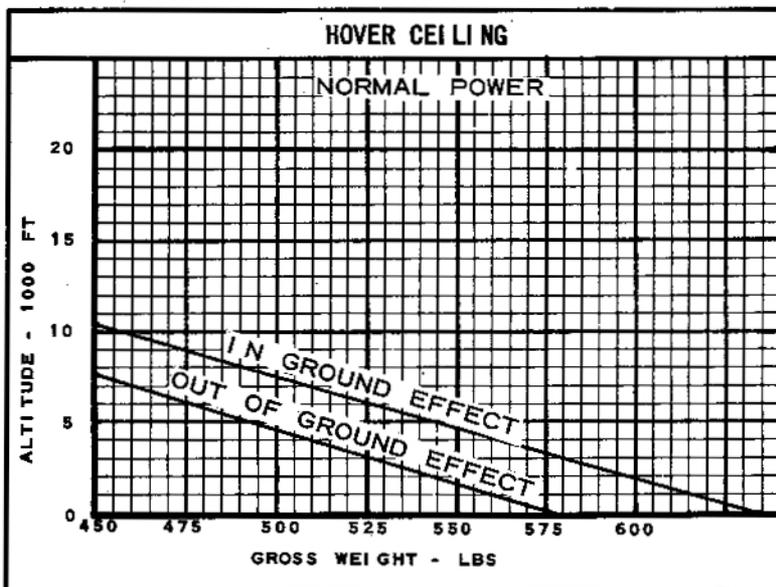
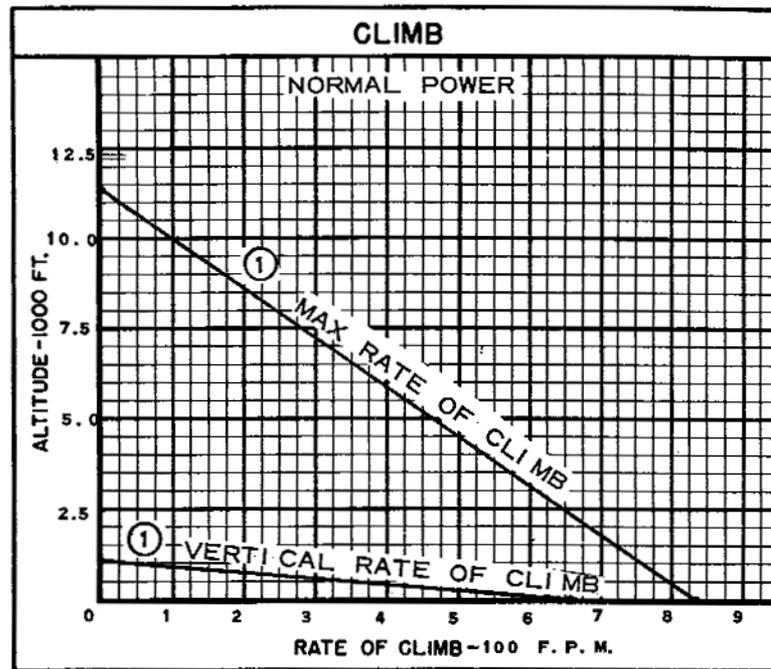
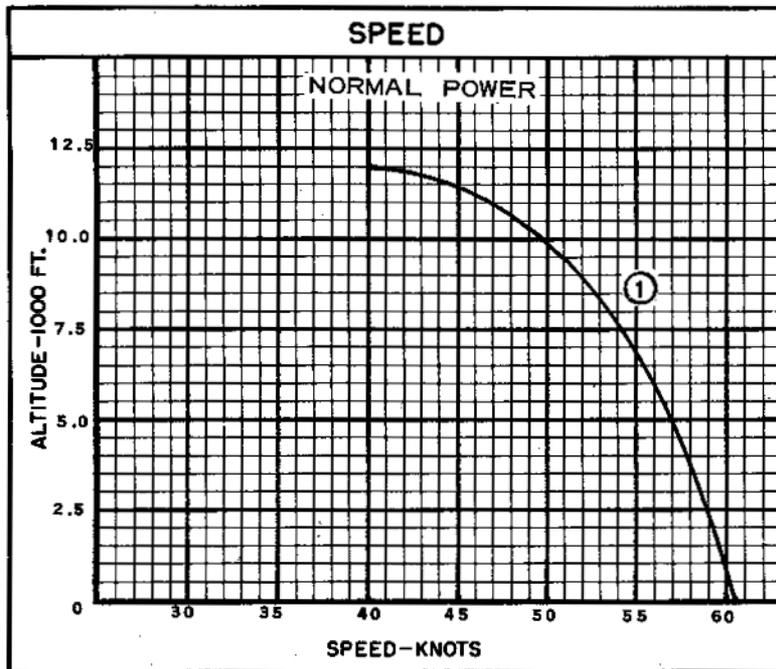
MAXIMUM ENDURANCE MISSION

WARM UP AND TAKE-OFF: 1 Minute at NRP

CRUISE: at sea level at speed for max-

imum endurance

RESERVE: 10% of initial fuel load

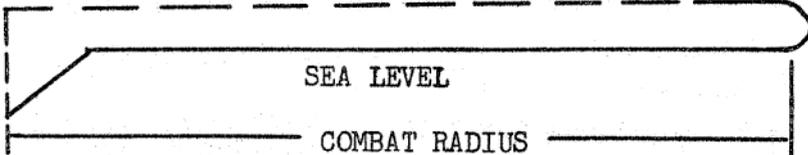


○ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics NAVAR 1335E (Rev. 1-55)

CHARACTERISTICS SUMMARY

BASIC MISSION
XROE-1

 SEA LEVEL
 

SEA LEVEL

COMBAT RADIUS

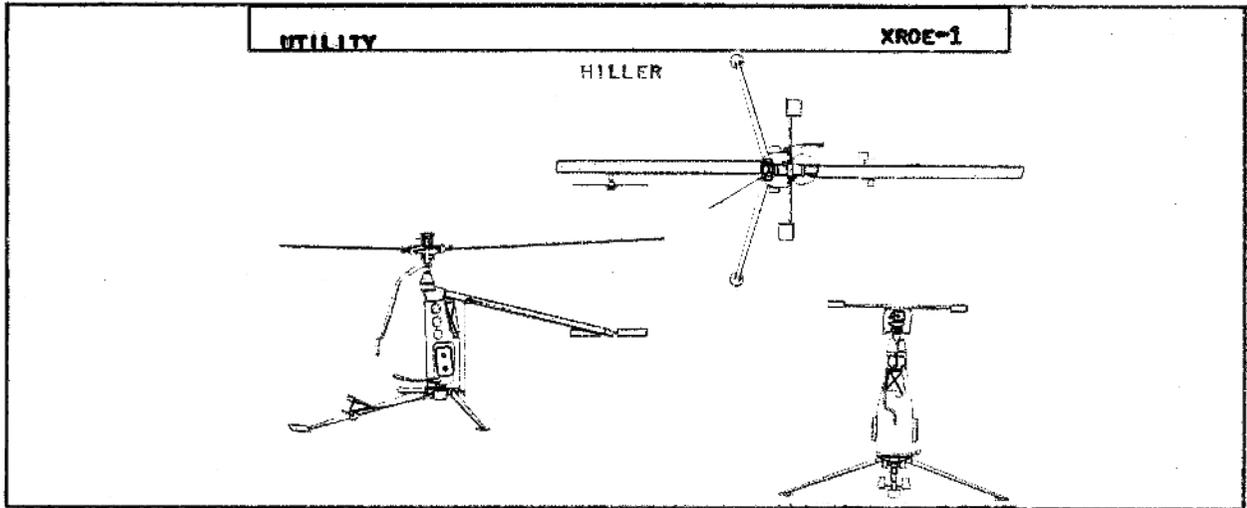
PERFORMANCE

ENDURANCE	RANGE	SPEED
0.45 hours	19.2 naut. mi.	60.5 knots at S.L. ft.
30 knots avg.	45 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
825 ft./min.	10,000 ft.	1,100 ft.
Sea Level, N. G. Wt., Normal Power	100 ft./min., N. G. Wt., Normal Power	N. G. Wt., Normal Power out of ground effect
		4,000 ft. N. G. Wt., Normal Power in ground effect
LOAD	WEIGHTS	VERTICAL CLIMB
Fuel 2.4 gal.	Empty 307.5 lbs.	645 ft./min.
Internal 2.31 gal.	Normal Gross 562 lbs.	Sea Level, N. G. Wt., Normal Power
External gal.	Overload 562 lbs.	
Payload 240 lbs.		

NOTES

Performance, Range Radius and Endurance based on NATESTCEN
Evaluation of XROE-1

CHARACTERISTICS SUMMARY



DISC AREA 267 SQ FT

LENGTH 18' - 5"

ROTOR DIA. 19.4 FT.

HEIGHT 7' - 5"

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

STATUS	
FIRST FLIGHT	NOVEMBER 1956
SERVICE USE	SEPTEMBER 1959

ENGINES			
(1) YO-65-2			
	BHP	RPM	ALT
MIL	43	4000	SL
NORM	43	4000	SL

FEATURES
(1) MAN PORTABLE CAN BE FOLDED OR ASSEMBLED IN LESS THAN 5 MINUTES.

ARMAMENT
NONE

NAVAER-1519E (REV. 6-56)