

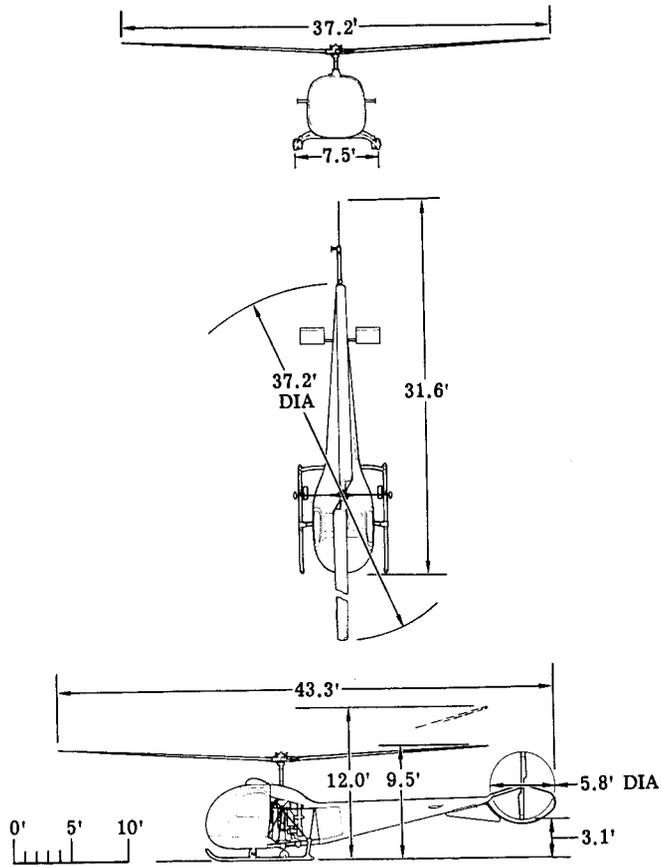


# STANDARD AIRCRAFT CHARACTERISTICS

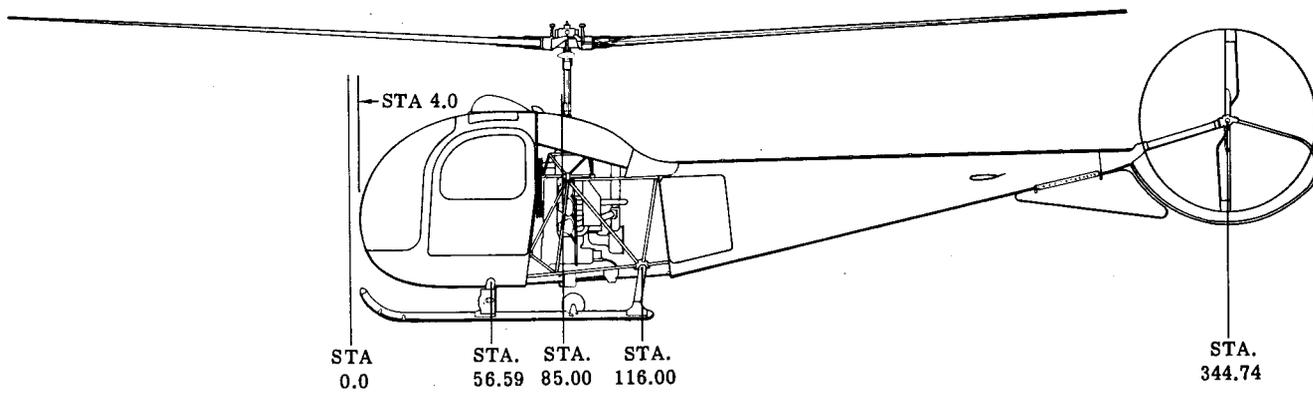
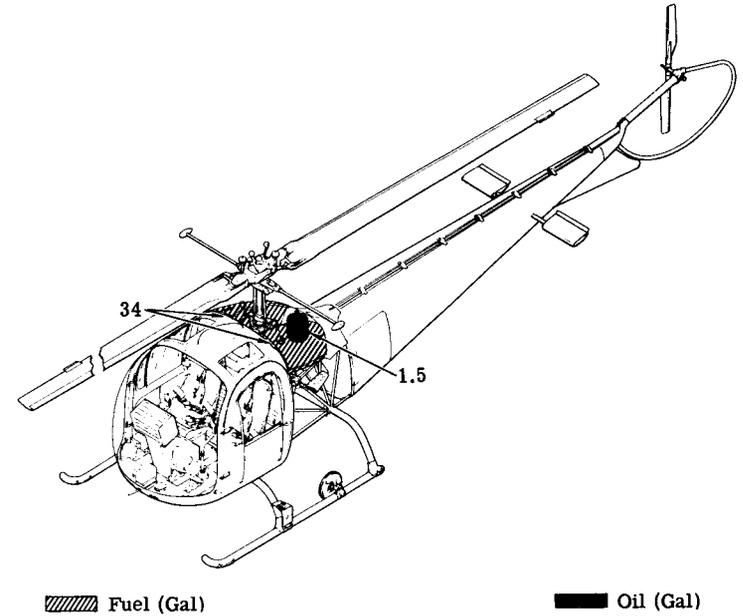
HTL-7

BELL

SERVICE



Disc Area . . . . .	1085 sq. ft.	Airfoil Section
Blade Area . . . . .	34.2 sq. ft.	(root) . . . . .
		(tip) . . . . .
		Chord (root) . . . . .
		(tip) . . . . .



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

**POWER PLANT**

No. and Model.....(1) VO-435-6  
 Manufacturer.....Lycoming  
 Main Rotor Gear Ratio.....0.111  
 Tail Rotor Gear Ratio.....0.600

**RATINGS**

	BHP	@ RPM	@ ALT
Take-off (5 Min)	240	3200	1300
Normal	220	3200	3800

Spec. No. 2207-B

**ACCOMMODATIONS**

Pilot.....1  
 Passenger.....1

or

Instructor.....1  
 Student.....1

**MISSION AND DESCRIPTION**

The basic mission of the HTL-7 is to train pilots for both primary and instrument flight.

The HTL-7 has a two-blade semi-rigid rotor with a stabilizer bar, and a two-blade semi-rigid tail rotor mounted on a delta hinge. The rotor, transmission and engine are suspended as a unit on rubber mounts in the fuselage. Mechanically the HTL-7 is nearly identical to the HUL-1. The fuselage is semi-monocoque except for the engine compartment, or center frame, which is of steel tube construction.

The control system has conventional dual controls, with full hydraulic motivation on the cyclic stick, and direct mechanical linkage to the rotor. The cabin has a military standard arrangement in all respects with side by side seating. Blind flying is possible using the A.C. powered gyro horizon and gyro stabilized compass. The stand-by blind flying instruments include a D.C. turn and slip indicator, a barometric rate of climb indicator, and a magnetic compass. A radio system is provided to permit communication and radio navigation. The landing gear is of the skid type with small handling wheels.

**DEVELOPMENT**

First Flight.....December 1957  
 Service Use.....February 1958

**DIMENSIONS**

Disc Area.....1085 sq. ft.  
 Rotor Dia.....37' .2 sq. ft.  
 Blade Area.....34' .2 sq. ft.  
 Length (Fuselage).....31' .6 sq. ft.  
 Height.....9' 6"  
 Tread.....7' 6"

**WEIGHTS**

<u>Loading</u>	<u>Weight</u>
Empty.....	1892
Basic .....	1916
Design.....	2565
Maximum T.O. ....	2565

All weights are actual

**FUEL AND OIL**

<u>No. of Tanks</u>	<u>Gals.</u>	<u>Location</u>
2	35	Fuselage
Grade .....91/96		
Specification .....MIL-F-5572		

**OIL**

Capacity (Gals).....3  
 Grade .....1065/1100  
 Specification.....MIL-L-6082

**ELECTRONICS**

UHF.....ARC-TYPE 12  
 UHF RECEIVER.....R-19  
 UHF TRANSVERTER.....TV-10  
 UHF RELAY OSCILLATOR UNIT.....K-13  
 ADF RADIO.....AN/ARN-41A

PERFORMANCE SUMMARY						
TAKE-OFF LOADING CONDITION		(1) TRAINER 1 pilot 1 student	(2) TRAINER 1 pilot 1 passenger+cargo			
TAKE-OFF WEIGHT	lb.	2450	2565			
Fuel	lb.	210	210			
Fayload	lb.	170	285			
Disc loading	lb./sq.ft.	2.26	2.36			
Vertical rate of climb at S.L. (A)/(B)	fpm.	700/220	525/25			
Absolute hovering ceiling	(B) ft.	C) 4400/7725(C)	C) 200/6400 (D)			
Max. rate of climb at S.L.	(B) fpm.	835	680			
Service ceiling (100 fpm)	(B) ft.	15,750	13,800			
Speed at S.L.	(B) kn.	82	81			
Max. speed/altitude	(B) kn./ft.	83/3500	82/3500			
Max. range	(B) n.mi.	130	125			
Average cruising speed	kn.	72	72			
Cruising altitude	ft.	S.L.	S.L.			
Max. endurance	hrs.	2.2				
Average cruising speed	kn.	40				
Cruising altitude		S.L.				

## NOTES

- (A) MILITARY POWER (5 min. limit)
- (B) NORMAL POWER
- (C) IN GROUND EFFECT
- (D) OUT OF GROUND EFFECT

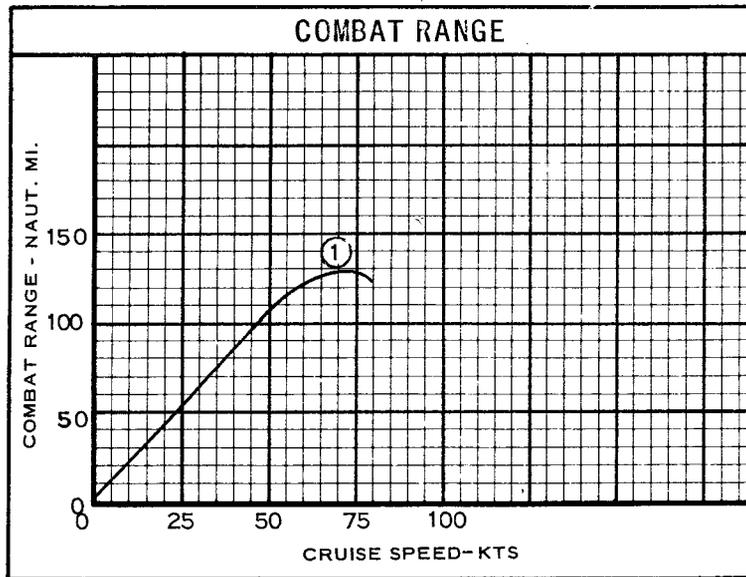
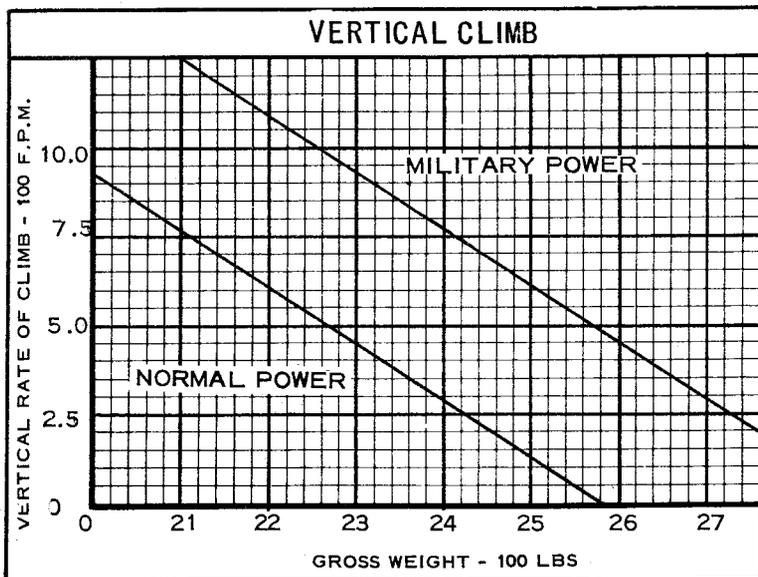
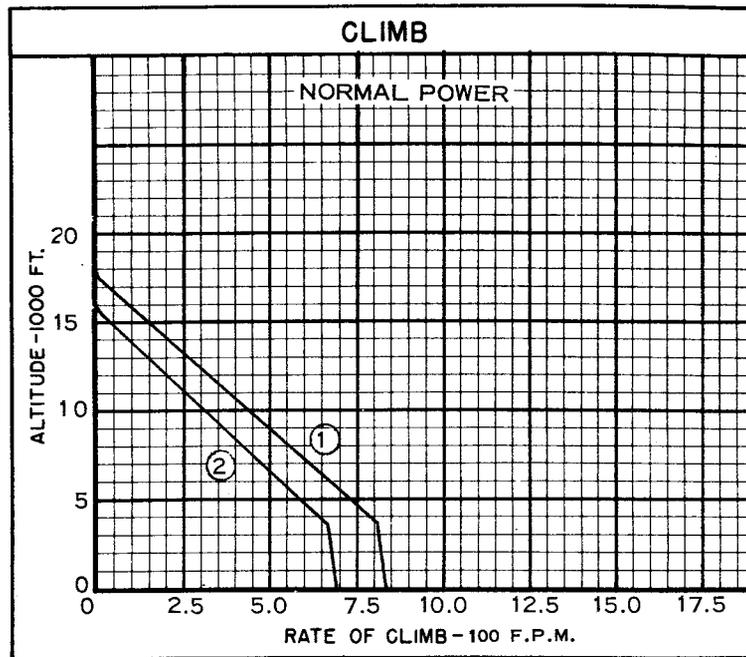
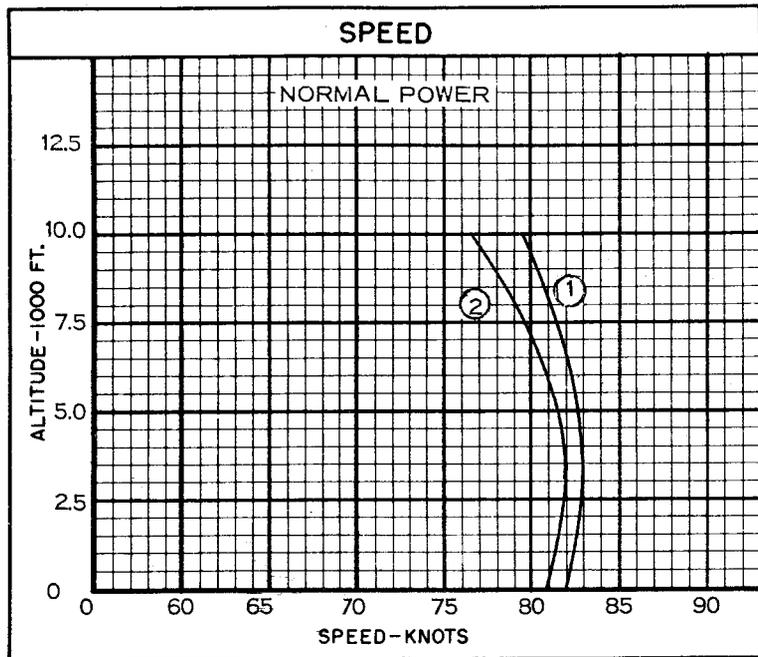
Performance is based on NATESTCEN evaluation of the Model HTL-7 Helicopter  
 Range and Endurance are based on NATESTCEN fuel consumption test of the Model HTL-7 Helicopter  
 All performance data presented is for the skid gear configuration

Maximum Range Mission

Warm-up and take-off: 5 minutes at Normal Rated Power  
 Cruise out: At speed for maximum range at sea level  
 Reserve: 10% of initial fuel load

Maximum Endurance Mission

Warm-up and Take-off: 5 minutes at Normal Rated Power  
 Cruise out: At speed for maximum endurance at sea level  
 Reserve: 10% of initial fuel load



○ LOADING CONDITION COLUMN NUMBER

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



# CHARACTERISTICS SUMMARY

BASIC MISSION	HTL-7
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S.L.

COMBAT RANGE

## PERFORMANCE

ENDURANCE	RANGE	SPEED
2.2 hours	130 naut. mi.	83 knots at 3500 ft.
40 knots avg.	72 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
835 ft./min.	15,750 ft.	4400 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
		7725 ft.
		N. G. Wt., Power in ground effect
LOAD	WEIGHTS	VERTICAL CLIMB
Fuel 35 gal.	Empty 1892 lbs.	220 ft./min.
Internal 35 gal.	Normal Gross 2450 lbs.	Sea Level, N. G. Wt., Power
External ----- gal.	Overload 2565 lbs.	
Payload ----- lbs.		

## NOTES

Performance based on NATESTCEN Evaluation of the HTL-7