



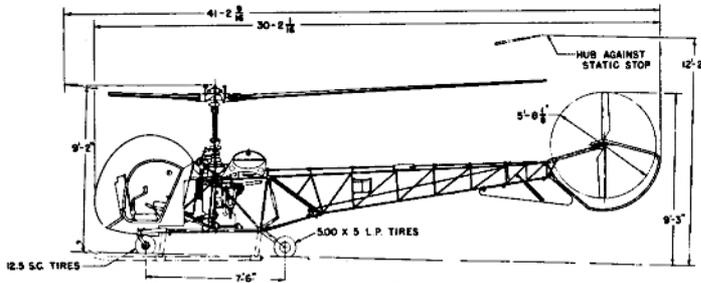
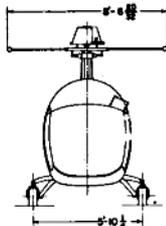
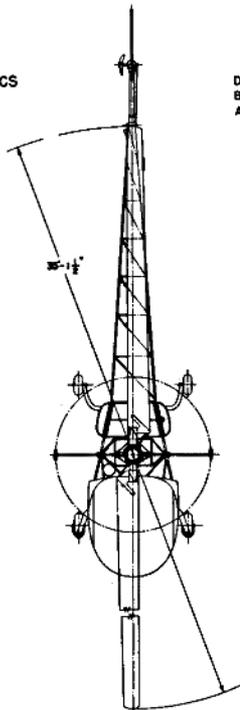
# STANDARD AIRCRAFT CHARACTERISTICS

## HTL-5

BELL

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

DISC AREA : 965 SQ. FT.  
BLADE AREA (2) : 35.34 SQ. FT.  
AIRFOIL SECTION : ROOT NACA 0017  
TIP NACA 0011



DESCRIPTIVE ARRANGEMENT

Standard Aircraft Characteristics NAVAER 1335B (REV. 1-49)

**POWER PLANT**

NO. & MODEL.....(1) O-335-5  
 MFR.....Aircooled Motors  
 ROTOR GEAR RATIO.....0.111  
 TAIL ROTOR RATIO.....0.60

**RATINGS**

Bhp ● Rpm ● Alt.

NORMAL 200 3,100 S. L.

SPEC. NO. 19178

**MISSION AND DESCRIPTION**

The primary mission of the HTL-5 is training. It will also be used in combat areas for the evacuation of wounded, mine spotting, liaison, carrying limited amounts of critical supplies, and general utility.

It is similar in general configuration and rotor dimensions to the HTL-4, but an improved transmission and a rotor brake have been installed with a 15 pound increase in empty weight.

Some of these helicopters are being delivered with skid type gear and some with wheel type gear. Kits containing the other type of gear are being supplied with each helicopter.

The HTL-5 is a three-place, single engine helicopter equipped with a two-bladed main rotor with a gyroscopic action stabilizer bar. The main rotor is of the see-saw type, the blade being rigidly interconnected by means of the hub except that each blade is separately journaled to the hub for pitch change.

In service use -- November 1951

**WEIGHTS**

Loadings	Lbs.	L.F.
EMPTY.....	1,561.....	
BASIC.....	1,570.....	
DESIGN.....	2,350.....	2.5
MAX.T.O.....	2,350.....	2.5
MAX.LAND.....	2,350*	

All weights are calculated.

\* Limited by performance

**FUEL AND OIL**

Gals.	No. Tanks	Location
29	1	Fuselage
FUEL GRADE....91/98		
FUEL SPEC....AN-F-48		

**OIL**

CAPACITY (Gals.).....	2
GRADE.....	1100
SPEC.....	AN-O-8

**ACCOMMODATIONS**

CREW AND PASSENGERS ON  
 SEAT.....3  
 EXTERNAL LITTERS.....2

**DIMENSIONS**

DISC AREA.....969 sq. ft.  
 BLADE DIA.....35' - 2"  
 LENGTH.....41' - 5"  
 HEIGHT\*.....11' - 3"  
 TREAD.....5' - 11"  
 BLADE AREA.....35 sq. ft.

\* Blades in stowed position.

**ELECTRONICS**

VHF TRANSMITTER.....T-11A  
 VHF TRANSMITTER.....T-13  
 VHF REC.(118-148 mcs)....R-19  
 RANGE REC.(190-550 kcs).R-11A



## PERFORMANCE SUMMARY

LOADING CONDITION		(1) TRAINER	(2) TRAINER
		1 Pilot 1 Student	1 Pilot Cargo/Passen.
TAKE-OFF WEIGHT	lbs.	2,141	2,350
Fuel	lbs.	174	174
Pay Load	lbs.	190	400
Engine Power	bhp/rpm.	200/3,100	200/3,100
Disc Loading	lbs./sq.ft.	2.2	2.4
Power Loading	(A) lbs./bhp.	10.7	11.7
Maximum Speed-S.L.	(B) kn.	80	80
Maximum Speed/Alt.	(B) kn./ft.	82/1,900	80/S.L.
Rate of Climb-S.L.	(B) ft./min.	985	850
Speed for Rate of Climb-S.L.	(B) kn.	45	45
Time-to-Climb 5,000 ft.	(B) min.	6.3	7.6
Time-to-Climb 10,000 ft.	(B) min.	18.0	25.0
Service Ceiling	(B) ft.	12,500	10,600
Vertical Rate of Climb-S.L. (B/C)	ft./min.	300	--
Abs. Hover Ceil. No Grd. Effect (B/C)	ft.	1,400	--
Abs. Hover Ceil. In Grd. Effect (B/C)	ft.	--	--
Combat Range/Vav 1,500 ft.	n.mi./kn.	105/65	95/65
Max. Endur./Vav 1,500 ft.	hr./kn.	1.9/45	1.7/45

## NOTES

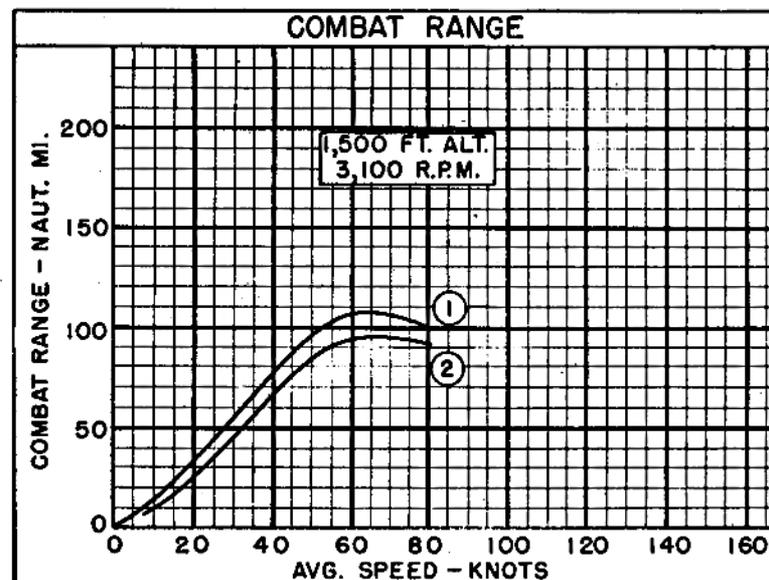
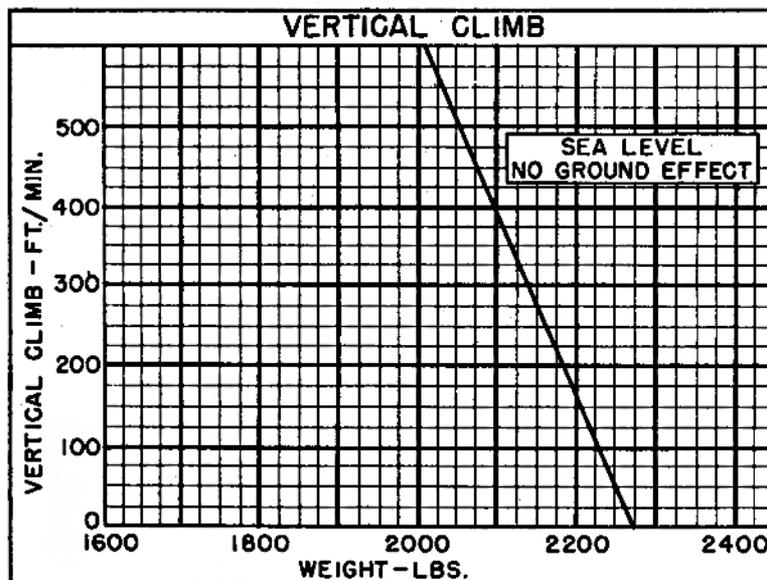
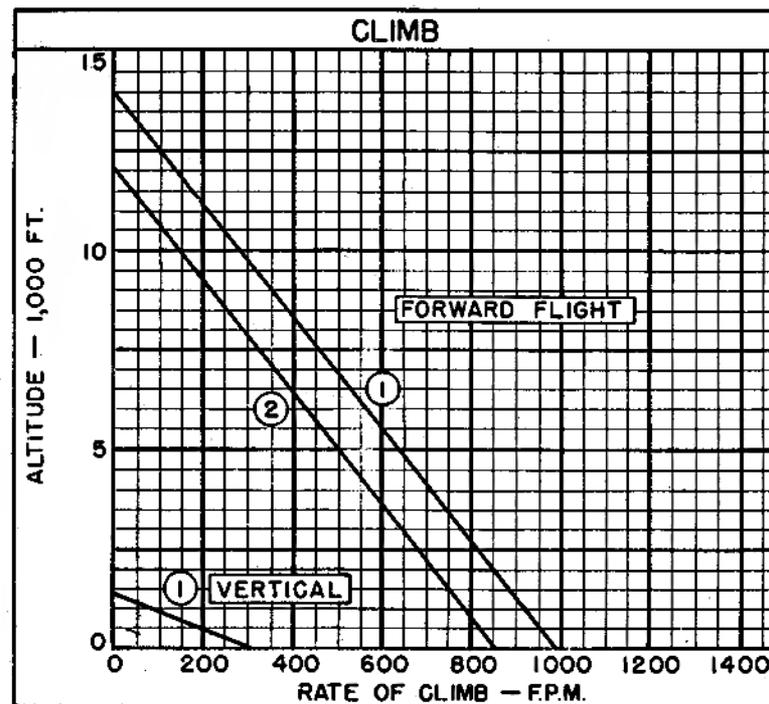
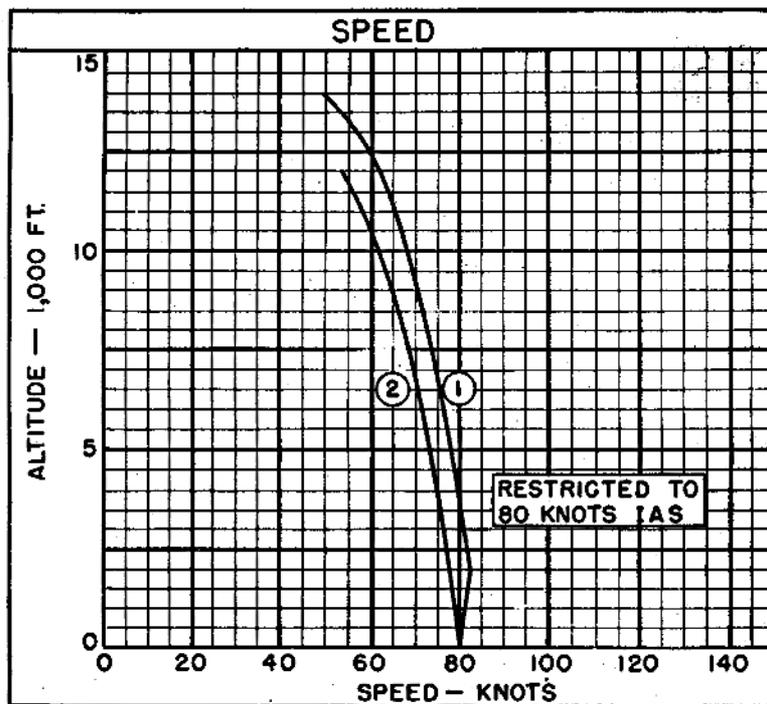
- (A) BHP at Maximum Critical Altitude
- (B) Normal BHP
- (C) Take-Off Power

Performance is based on NATC flight test of the HTL-3 helicopter.

Combat range and maximum endurance are based on flight test fuel consumption data increased by 5% and allowing fuel for warm-up and take-off (5 minutes at NRP) and a 10% fuel reserve.

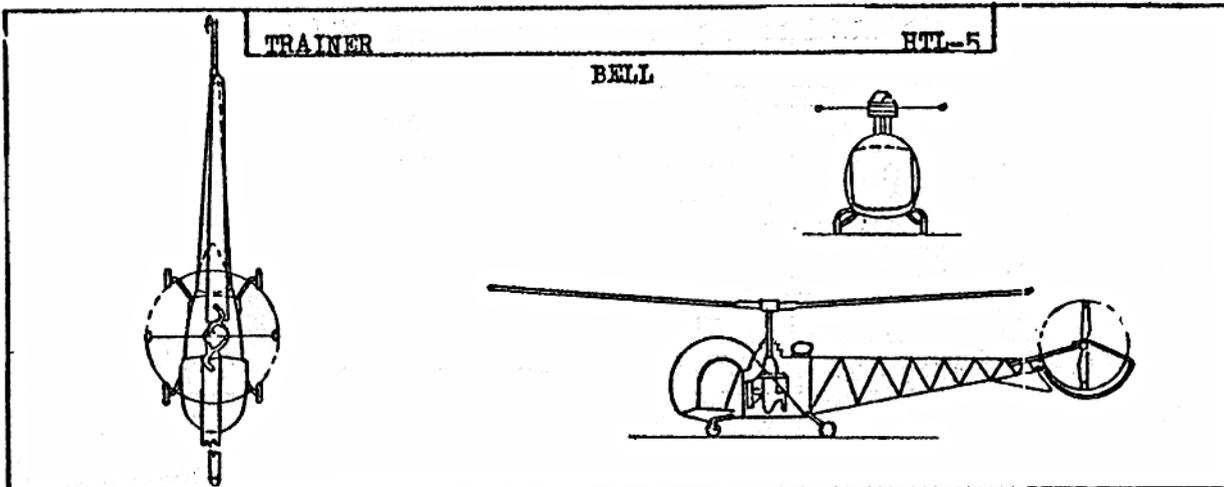
All performance is based on 3,100 RPM and is out of ground effect.

Maximum speed is restricted to 80 knots IAS by BUAER Technical Order No. 40-51 of 1 June 1951.



○ LOADING CONDITION COLUMN NUMBER

# CHARACTERISTICS SUMMARY



DISC AREA 969 sq. ft.  
 ROTOR DIA. 35' - 2"

LENGTH 41' - 5"  
 HEIGHT 12' - 3"

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

## STATUS

Off the shelf procurement (commercial model 47D-1) with minor Navy changes.  
 In service use -- November 1951

### ENGINES

1 Aircooled O-335-5  
 Bhp/ Rpm / Alt.  
 NORMAL 200/3,100/S. L.

### FEATURES

2 Place Dual Control  
 Bubble Canopy  
 Wheel landing gear  
 Alternate Gear:  
 Skid type or Float Type  
 Provisions for 2 external  
 litters with Skid  
 type gear  
 Rotor brake  
 29 gals. fuel max. cap.

### ARMAMENT

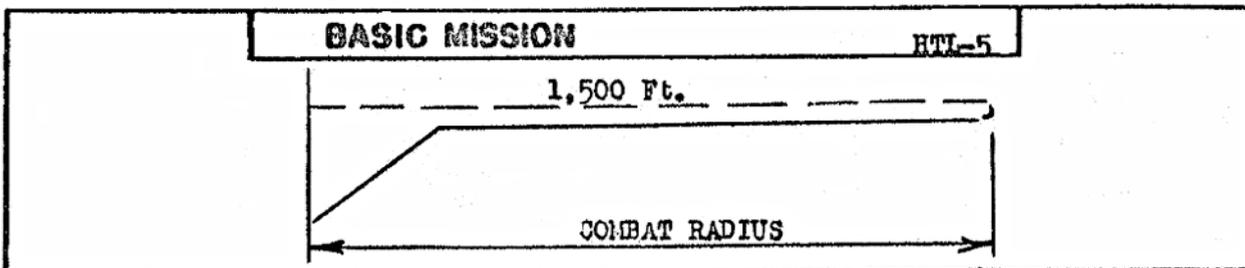
None

### ACCOMMODATIONS

Pilot and Passenger or  
 Student on Seat.....2  
 External Litters.....2  
 (with Skid Gear)

NAVAER 15.7 E (NEW 4-51)

## CHARACTERISTICS SUMMARY



PERFORMANCE		
MAX. ENDURANCE	COMBAT RANGE	COMBAT SPEED
1.9 hours 45 knots avg. 1,500 ft. alt.	105 naut. mi. 65 knots avg. 1.6 hours 1,500 ft. alt.	80 knots at S. L., Max. Power
		<b>MAXIMUM SPEED</b>
		82 knots at 1,900 ft., Max. Power
CLIMB	CEILING	TAKE OFF
985 ft./min. (forward flight) Sea Level, T. O. wt. Normal Power	12,500 ft. (forward flight) 100 ft./min., T. O. wt. Normal-Power	Vertical
300 ft./min (vertical) Sea Level, T. O. wt. Normal Power	1,400 ft. Absolute Hover Ceiling T. O. Wt. Normal Power	
LOAD	WEIGHTS	STALLING SPEED
Fuel 29 gal. fixed 29 drop — Pay Load 190 lbs.	Empty 1,561 lbs. Combat — lbs. Take-off 2,141 lbs.	

## NOTES

Performance is based on NATESTCEN flight test of HTL-3 helicopter. Combat range and maximum endurance are based on flight test fuel consumption increased by 5% and allowing fuel for warm-up and take-off (5 minutes at NRP) and a 10% fuel reserve.

All performance is out of ground effect.

This helicopter differs from the HTL-4 in that it incorporates a rotor brake and an improved transmission.