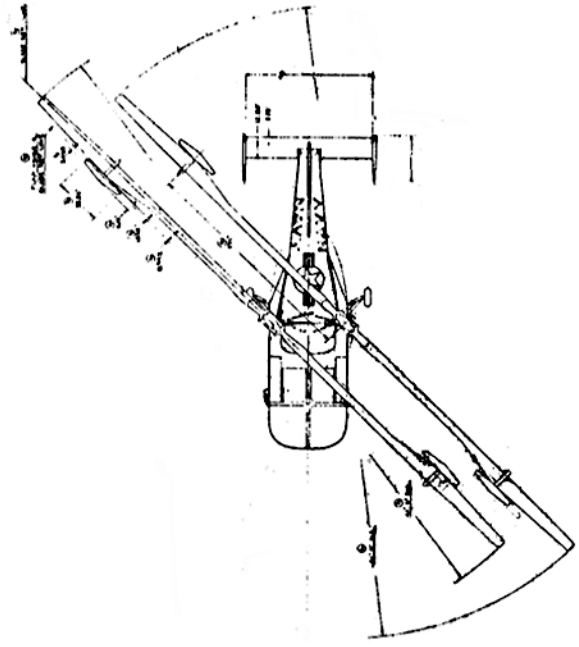
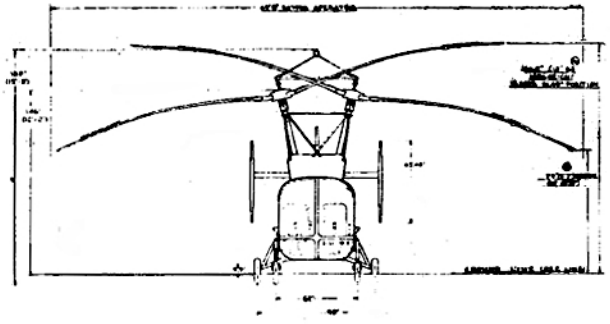
# STANDARD AIRCRAFT CHARACTERISTICS

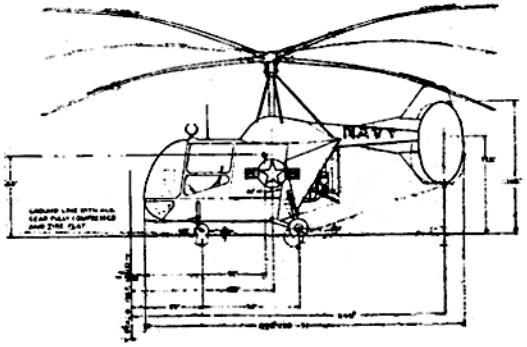
# HTK-1

**KAMAN**

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







## POWER PLANT

NO. & MODEL.....(1) O-435-4
MFR.....Lycoming
ROTOR GEAR RATIO.....0.075

### RATINGS

| | BHP @ | RPM @ | ALT |
|---|---|---|---|
| T.O. | 255 | 3,400 | S.L. |
| NORMAL | 245 | 3,200 | S.L. |

See Note on Performance Summary Page

SPEC. NO. 2097-B

## ACCOMMODATIONS

Crew.....2
Passenger.....1

or

Crew.....1
Attendant.....1
Litter.....1

## MISSION AND DESCRIPTION

The primary mission of the HTK-1 helicopter is the training of pilots. It may also be used in combat areas for general utility, including evacuation of wounded. Either a pilot, co-pilot, and a student or an internal litter with patient plus pilot and attendant can be carried. The left side of the nose bubble opens for loading of the litter.

The helicopter has twin, side-by-side, intermeshing, counterrotating rotors controlled by servo flaps for both cyclic pitch and collective pitch change. The servo flaps are located at approximately 75% radius of each blade. There are three vertical fins, the two outboard being rigidly attached to a floating horizontal surface which is controlled by a movable trim tab.

### DEVELOPMENT

First Flight.....April 1951
Service Use....September 1952

## DIMENSIONS

DISC AREA*.....1,521 sq.ft.
BLADE AREA(Total)...53 sq.ft.
BLADE DIA.....41' -0"
SPAN**.....45' -8"
LENGTH.....41' -0"
HEIGHT***.....17' -0"
TREAD.....7' -6"

* Projected
** Rotors Operating
*** Rotors in 45° position with gound handling blocks installed.

## WEIGHTS

| LOADINGS | LBS. | L.F. |
|---|---|---|
| EMPTY | 2,273 | |
| BASIC | 2,285 | |
| DESIGN | 3,000 | 3.0 |
| MAX.T.O. | 3,000* | 3.0 |
| MAX.LANDING | 3,000* | |

All weights are actual.
*Maximum Weight Limited By Tech Order 96-51

## FUEL AND OIL

| GALS. | NO. TANKS | LOCATION |
|---|---|---|
| 40 | 1 | Fuselage |

FUEL GRADE.....91/96
FUEL SPEC.....MIL-F-5572

### OIL

CAPACITY (Gals) ENGINE....3.0
TRANSMISSION.....1.5
GRADE.....1100(S) 1065(W)
SPEC.....MIL-O-6082A

## ELECTRONICS

VHF TRANSMITTER.....T-11A
VHF TRANSMITTER.....T-13
VHF RECEIVER.....R-19
RANGE REC. & LOOP.....R-11A

## PERFORMANCE SUMMARY

| TAKE-OFF LOADING CONDITION | | (1) TRAINER 1 Pilot 1 Student | (2) TRAINER 1 pilot 2 Passengers | | | |
|---|---|---|---|---|---|---|
| TAKE-OFF WEIGHT | lb. | 2,939 | 3,000 | | | |
| Fuel | lb. | 240 | 134 | | | |
| Payload | lb. | 190 | 340 | | | |
| Disc loading | lb./sq.ft. | 2.0 | 2.0 | | | |
| Vertical rate of climb at S.L. (A) | fpm. | 320 | 270 | | | |
| Absolute hovering ceiling (A) | ft. | 4,300 | 3,700 | | | |
| Max. rate of climb at S.L. (A) | fpm. | 770 | 730 | | | |
| Service ceiling (100 fpm) (A) | ft. | 9,800 | 9,300 | | | |
| Speed at S.L. (A) | km. | 74 | 74 | | | |
| Max. speed/altitude (A) | km./ft. | 74/S.L. | 74/S.L. | | | |
| Combat range | n.mi. | 115 | 60 | | | |
| Average cruising speed | km. | 55 | 55 | | | |
| Cruising altitude | ft. | 1,500 | 1,500 | | | |
| Max. endurance (1,500 ft.) | hrs. | 2.7 | 1.4 | | | |
| Average cruising speed | km. | 35 | 35 | | | |
| % N.R.P. req'd to hover at S.L., no wind | | 85 | 87 | | | |

### NOTES

(A) Normal power
(B) Take-off power

Reason for reissue: Flight test data

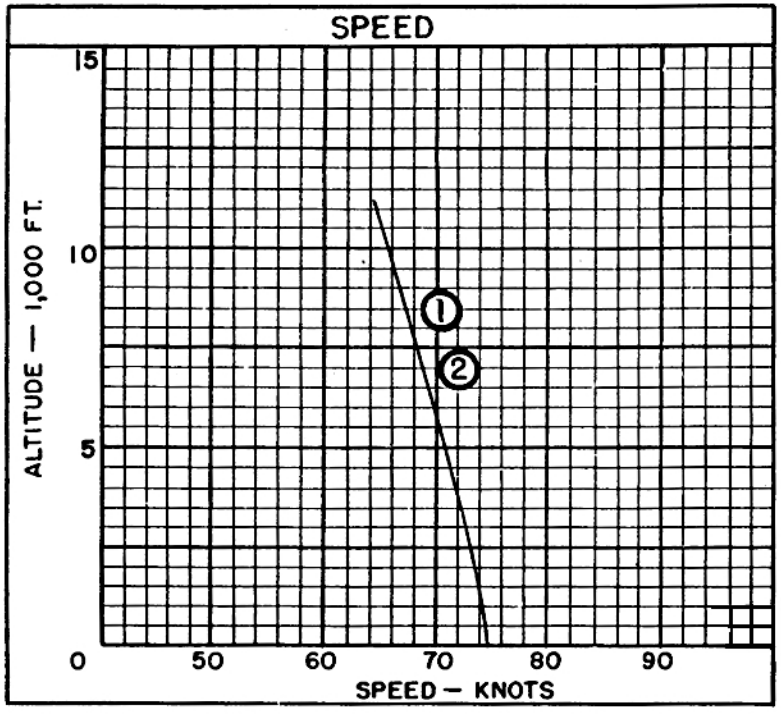
Performance is based on Navy flight test of the HTK-1 helicopter.

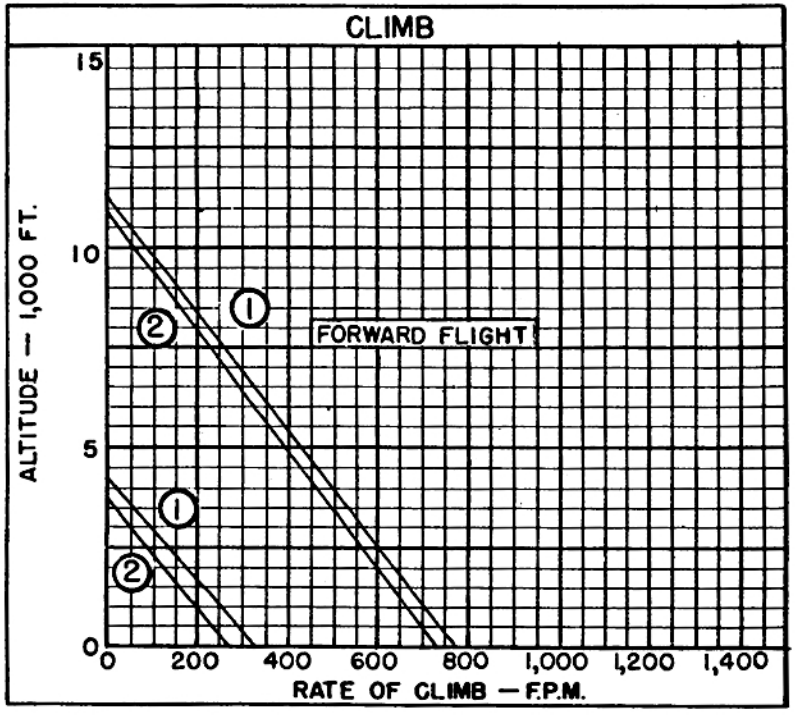
Maximum engine rpm restricted to 3200 by rotor structural limit.

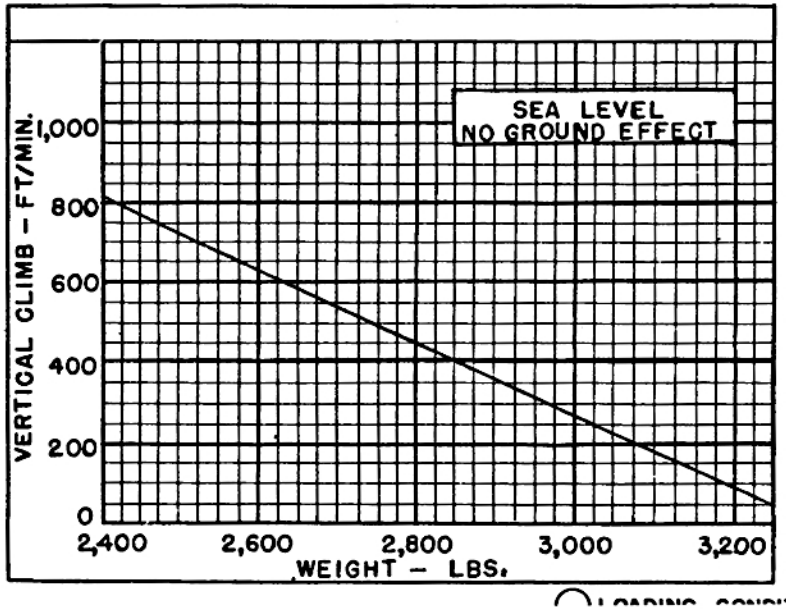
Combat range and maximum endurance are based on Navy fuel consumption data increased by 5% and allowing fuel for warm-up and take-off (5 minutes at NRP) and a 10% fuel reserve. 3200 RPM and full rich mixture are used for all speeds and altitudes.

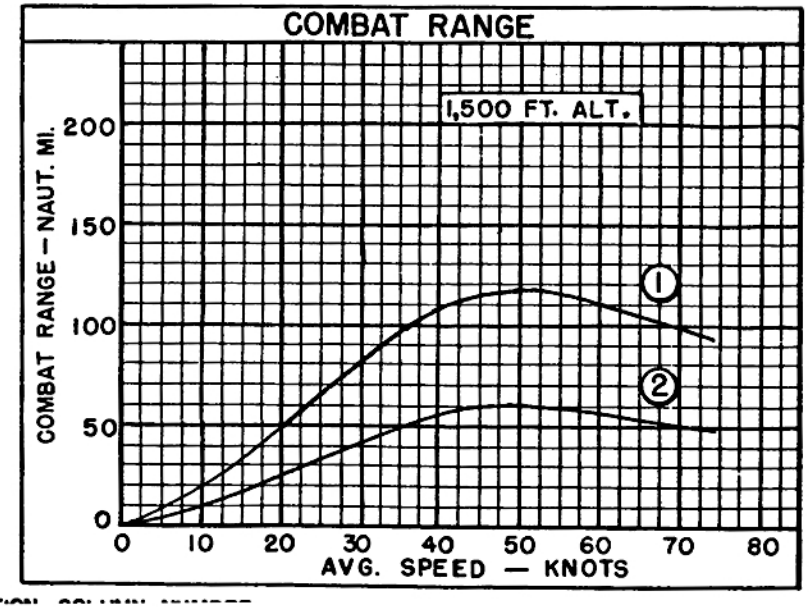
All performance is out of ground effect.

NAVAER-1335G (Rev. 10-51)




LOADING CONDITION COLUMN NUMBER

Sikorsky Aircraft Characteristics NAVAER 1335E (REV. 2-50)