



STANDARD AIRCRAFT CHARACTERISTICS

HUP-2 "RETRIEVER"

PIASECKI

POWER PLANT

NO. & MODEL.....(1) R-975-42
 MFR.....Continental
 SUPERCH.....1 Stage, 1 Speed
 ROTOR GEAR RATIO.....0.116

RATINGS

Hhp ● RPM ● Alt.

| | | | |
|-------|-----|-------|--------|
| T. O. | 550 | 2,400 | S.L. |
| NOEM. | 525 | 2,500 | 6,800' |

SPEC. NO. 2048-B

ACCOMMODATIONS**ANTI-SUBMARINE SEARCH**

Crew.....3

SEARCH AND RESCUE

Passengers.....4
 Litters.....2
 Rescue Hatch.....48" x 26"
 Hoist Capacity.....400 lbs.

MISSION AND DESCRIPTION

The primary mission of the HUP-2 is to serve as an interim anti-submarine helicopter. It may also be used, by removal of ASW equipment, for search and rescue. In this configuration, its primary function is carrier plane guard duty.

The HUP-2 differs from the HUP-1 in appearance only by the removal of the tail surfaces. In addition it incorporates a more powerful engine and an auto-pilot.

DEVELOPMENT

First flight - November 1951
 Service use to start - February 1952

DIMENSIONS

DISC AREA.....1,670 sq. ft.
 BLADE AREA.....105 sq. ft.
 ROTOR DIA.....35' - 0"
 LENGTH*.....31' - 10"
 HEIGHT.....12' - 6"
 TREAD.....8' - 0"

*Blades Folded

WEIGHTS

| Loadings | Lbs. | L.F. |
|---------------|--------|-----------|
| EMPTY..... | 4,121 | |
| BASIC..... | 4,322 | |
| DESIGN..... | 5,750 |2.75 |
| MAX.T.O..... | 6,100* |2.60 |
| MAX.LAND..... | 6,100 | |

All weights are actual.
 *Limited by strength

FUEL AND OIL

| Gals. | No. Tanks | Location |
|-------------------------|-----------|----------|
| 150 | 1 | Fuselage |
| FUEL SPEC....MIL-F-5572 | | |
| FUEL GRADE... 100/130 | | |

OIL

CAPACITY (Gals.).....10
 SPEC.....MIL-C-6082
 GRADE.....1100/1120

ELECTRONICS

VHF COMM.....AN/ARC-1
 UHF COMM.....AN/ARC-12
 RADIO ALTIMETER.....AN/APN-1
 INTERPHONE.....AN/AIC-4A
 IFF.....AN/APX-6
 SONAR EQUIP.....AN/AQS-4A

PERFORMANCE SUMMARY

| TAKE-OFF LOADING CONDITION | (1) ASW SEARCH 3 - Crew | (2) SEARCH AND RESCUE 2 - CREW 1 - PASSENGER | | | |
|--------------------------------|----------------------------|---|-------------|--|--|
| TAKE-OFF WEIGHT | lb. | 6,100 | 5,750 | | |
| Fuel | lb. | 876 | 756 | | |
| Payload | lb. | 517 | 200 | | |
| Disc loading | lb./sq.ft. | 3.7 | 3.4 | | |
| Vertical rate of climb at S.L. | (A/B) fpm. | 100/400 | 450/740 | | |
| Absolute hovering ceiling | (A/B) ft. | 1,000/3,750 | 5,800/5,100 | | |
| Max. rate of climb at S.L. | (A) fpm. | 980 | 1,160 | | |
| Service ceiling (100 fpm) | (A) ft. | 11,400 | 12,700 | | |
| Speed at S.L. | (A) km. | 87 | 96 | | |
| Max. speed/altitude | (A) km./ft. | 87/S.L. | 96/S.L. | | |
| Combat range | n.mi. | 340 | 310 | | |
| Average cruising speed | kn. | 81 | 80 | | |
| Cruising altitude | ft. | 1,500 | 1,500 | | |
| Combat radius | n.mi. | -- | -- | | |
| Average cruising speed | kn. | -- | -- | | |
| Search endurance | hr. | 3.4 | -- | | |
| Maximum endurance/V av | hr./kn. | -- | 4.8/58 | | |
| | | | | | |
| | | | | | |

NOTES

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

Performance is based on flight tests of XHJP-1 and HUP-1 helicopters.

Due to a higher RPM, normal power is greater than take-off power above 3,800 feet.

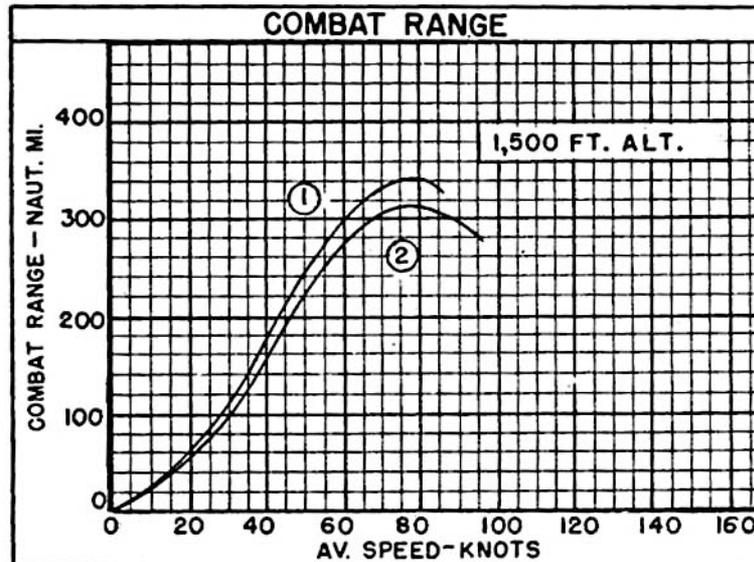
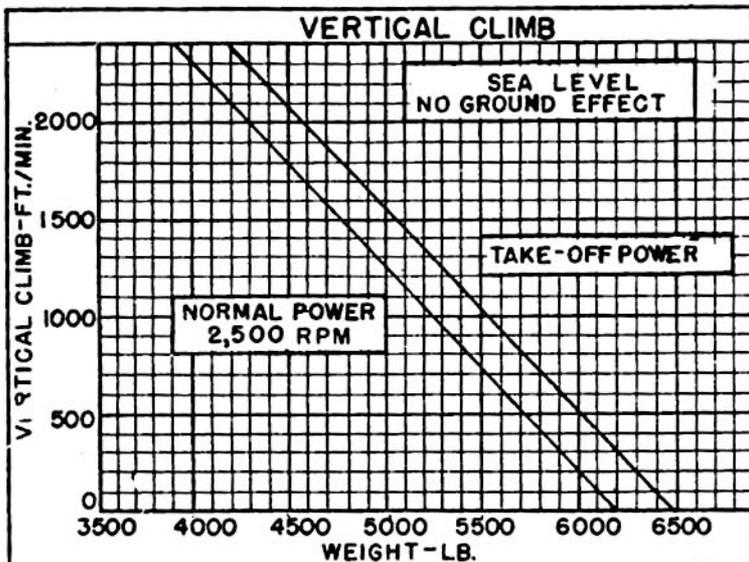
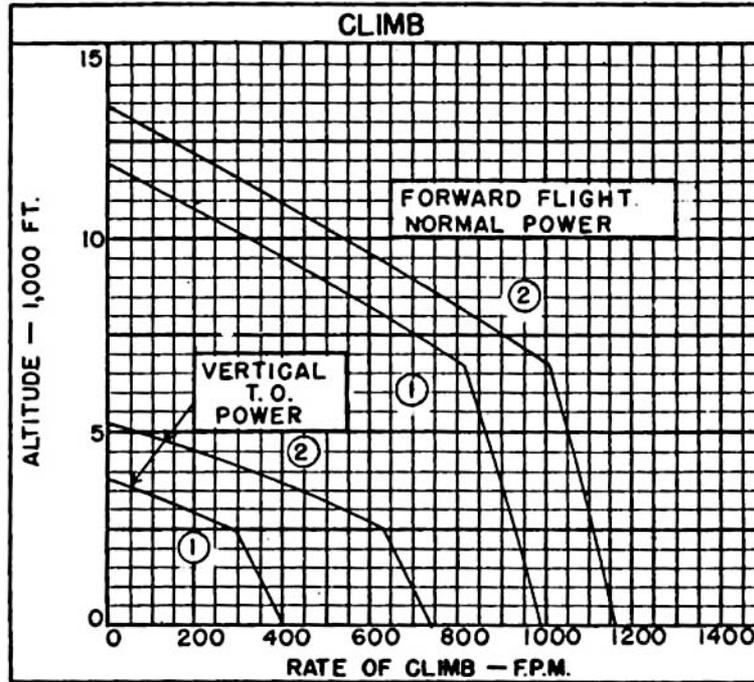
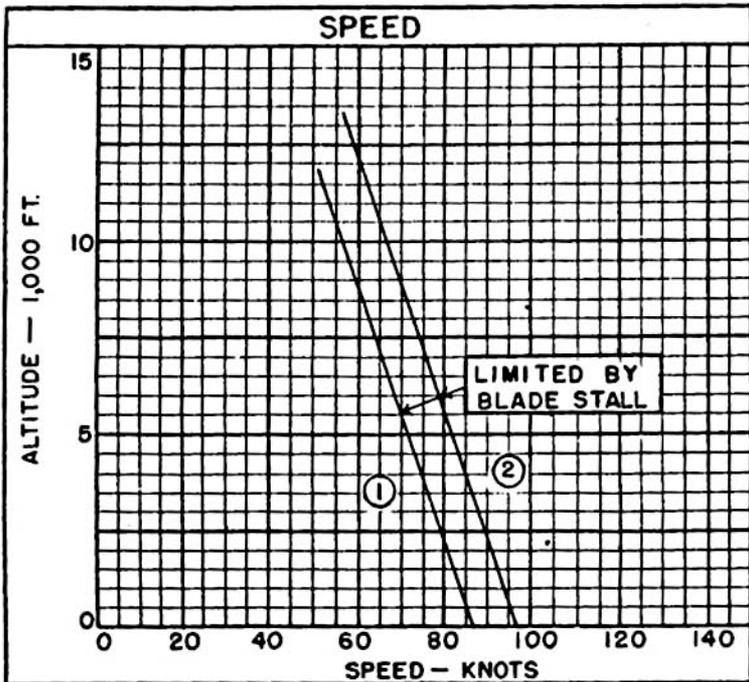
Sea level data do not include ground effect.

All performance items at NRP are quoted at 2,500 RPM.

Combat range and endurance are quoted at optimum RPM. Fuel consumption for range and endurance is based on engine specification fuel consumption data increased 5% and allowing fuel for warm-up and take-off and a 10% fuel reserve.

This helicopter, at present, is limited to a maximum gross weight of 5,900 pounds; however, this restriction is expected to be raised, following additional flight tests, to 6,100 pounds which is quoted herein as the maximum gross weight.

Standard Aircraft Characteristics NAVAL 1335E (REV. 2-60)



○ LOADING CONDITION COLUMN NUMBER

NOTES

AN/AQS-4A Sonar equipment included for ASW Search is removed for the Search and Rescue configuration.

Performance as quoted is for twisted wooden blades. Prewitt metal blades are expected to be installed in the future. The change in performance should be negligible.

ASW SEARCH ENDURANCE PROBLEM

WARM-UP AND TAKE-OFF: 5 minutes at normal power.

CRUISE: At speed for long range 40% of time at sea level.

HOVER: Out of ground effect 60% of time at sea level.

RESERVE: 10% of initial fuel load.

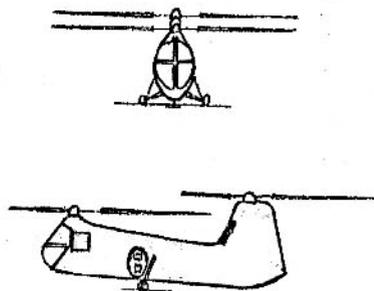
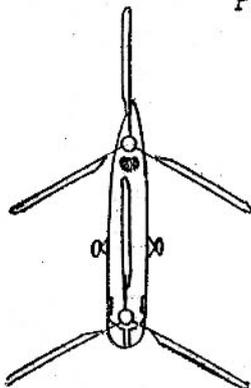
SEARCH ENDURANCE = CRUISE TIME + HOVER TIME

CHARACTERISTICS SUMMARY

UTILITY

HUP-2

PIASECKI "RETRIEVER"



DISC AREA 1,670 sq. ft.

ROTOR DIA. 35' - 0"

* LENGTH 31' - 10"

HEIGHT 13' - 2.3"

* Blades folded

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

STATUS

First flight - - - - - November 1951

Service use - - - - - February 1952

ENGINES

1 Continental R-975-46

| | BHP | RPM | ALT. |
|-------|-----|------|-------|
| T.O. | 550 | 2400 | S.L. |
| NORM. | 525 | 2500 | 6800' |

FEATURES

48" x 26" rescue hatch
1 - 400# capacity hoist
Folding rotor blades

150 gal. fuel
Max. capacity

ACCOMMODATIONS

Search & Rescue:

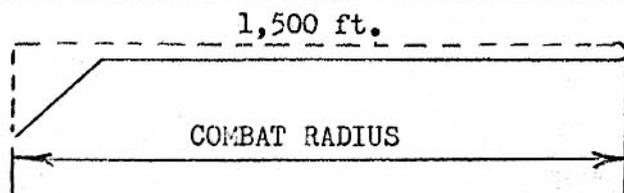
Pilot & Hoist
Operator - 2
Passengers - 4

Pilot & Hoist
Operator - 2
Litters - 2
Attendant - 1

CHARACTERISTICS SUMMARY

BASIC MISSION

HUP-2



PERFORMANCE

| COMBAT RADIUS | COMBAT RANGE | SPEED |
|---|--|--|
| 160 naut. mi. 75 knots avg. | 340 naut. mi. 81 knots avg. | 102 knots at 1,500 ft. knots at ft. |
| MAXIMUM ENDURANCE | 4.2 hours | knots at ft. |
| 4.8 hours 58 knots avg. Sea level | 1,500 ft. alt. | Take-Off Weight Maximum Power |
| CLIMB | CEILING | TAKE OFF |
| 1210 ft./min. (forward flight) Sea Level, T. O. wt. Normal Power | 12,160 ft. 100 ft./min., T. O. wt. Normal Power | Vertical |
| 600 ft./min. vertical Sea Level, T.O. wt. T.O. power | 5,950 ft. Absolute Hover Ceiling T.O. WT. Normal Power | |
| LOAD | WEIGHTS | |
| Fuel 146 gal. fixed 146 drop 0 | Empty 4,300 lbs. Combat lbs. Take-off 5,750 lbs. | |

NOTES

Performance is based upon NATC flight test evaluation of HUP-2 helicopter. Combat range and endurance are quoted at optimum RPM. Fuel consumption for range & endurance is based on engine specification fuel consumption increased 5% and allowing fuel for warm-up & take-off and a 10% fuel reserve. All Performance is out of ground effect. Reason for reissue: Recent flight test data.