Standard Aircraft Characteristics

NAVY MODEL
QH-50C
AIRCRAFT

THIS PUBLICATION SUPERSEDES NAVAIR 00-110A-1 DATED
1 MAY 1955 IN PART AND ALL ADDENDA THERETO

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COMMANDER OF THE NAVAL AIR SYSTEMS COMMAND

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STANDARD AIRCRAFT CHARACTERISTICS
QH-50C
**ROTOR DATA**

- DISC AREA: 342.92 FT²
- BLADE AREA: 32.8 SQ FT
- BLADE SECTION: NASA 007 TO 002
- ROTOR GEAR RATIO: 85:36 TO 1

**SCALE**

- 5.30 FT

**NON SELF-SEALING TANKS**

- 356 GALS (FUEL)
- 15 GALS (IDL)

**SCALE**

- 5

**DESCRIPTIVE ARRANGEMENT**

- 20 FT DIA

**ARMAMENT & TANKAGE**

- 2-MK 44 TORPEDOES
POWER PLANT

ENGINE .......... (1) T50-BO-8A
MFR. .......... Boeing Airplane Co.
TYPE .......... Turboshaft

RATINGS

BHP RPM ALT.
MILITARY 300 5950 SSL
NORMAL 270 6000 SSL

Model Spec. No. D4-1700-A
Dated: 1 December 1961
Revised: 15 August 1962

MISSION AND DESCRIPTION

The Model QH-50C Drone is a remotely controlled rotary-wing ASW weapon carrier designed to deliver alternate weapon loads of 750 lb or 850 lb. Combat radius of the drone is about 30 nautical miles, depending on loading condition, at a cruising speed of 80 knots. The combat mission includes a 12 minute hovering capability at the target prior to release of weapon(s).

The drone incorporates two two-bladed counter-rotating coaxial rotors of the semi-rigid (see-saw) type. The blades are of laminated wood construction, incorporating taper in planform and thickness and 12° negative twist. The machine is completely controllable through the rotors. Rotor controls are operated by the automatic stabilization and remote control equipment.

Control in pitch and roll is obtained through conventional cyclic pitch control. Control in yaw is achieved by means of rotor blade tip air (drag) brakes, which provide positive directional control in all flight regimes.

Directional stability in forward flight is provided by means of two vertical tail surfaces.

The power plant is the 300 hp T50-BO-8A gas turbine engine built by the Industrial Products Division of the Boeing Airplane Co.

DEVELOPMENT

The QH-50C is in production and initial Fleet deliveries were inaugurated in November 1963. Concurrently development work is continuing.

ORDNANCE

Weapons:
Mk 44 Torpedo .......... 2
or
750 lb. ............... 1

DIMENSIONS

DISC AREA .......... 314.2 sq. ft.
BLADE AREA .......... 32.5 sq. ft.
ROTOR DIAMETER .... 20 ft. 0 in.
LENGTH ............ 20 ft. 0 in.
HEIGHT ........... 9 ft. 8.5 in.
TREAD ............ 5 ft. 3 in.

FUEL AND OIL

NO. TANKS GAL. LOCATION
'1 33.6 Aft of transmission
GRADE ............. JP-5

CAPACITY .......... 3.0 gal.
SPEC ............... MIL-L-7808C

ELECTRONICS

1 (One) Each
AN/ARW-78 Radio Receiving Set
AN/ASW-20 Automatic Flight Control Set

WEIGHTS

LOADINGS LB.
EMPTY ............. 1172
NORMAL GROSS I ..... 2303
NORMAL GROSS II ...... 181

30 MAY 1963
QH-50C
## PERFORMANCE SUMMARY

<table>
<thead>
<tr>
<th>TAKE-OFF LOADING CONDITION</th>
<th>(1) ASW ATTACK 2-MK 44 TORPEDOES</th>
<th>(2) ASW ATTACK 2-MK 44 TORPEDOES</th>
<th>(3) ASW ATTACK 750 LB WEAPON</th>
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<td>TAKE-OFF WEIGHT</td>
<td>2303</td>
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<td>230</td>
<td>115</td>
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<td>866</td>
<td>866</td>
<td>750</td>
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<tr>
<td>DISC LOADING</td>
<td>7.33</td>
<td>6.96</td>
<td>6.96</td>
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<td>1355</td>
<td>1690</td>
<td>1710</td>
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<tr>
<td>ABSOLUTE MOVING CEILING</td>
<td>11,120</td>
<td>13,320</td>
<td>13,515</td>
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<tr>
<td>MAX. RATE OF CLimb AT S.L. (A)</td>
<td>1845</td>
<td>2060</td>
<td>2075</td>
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<td>16,200</td>
<td>17,400</td>
<td>17,470</td>
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<tr>
<td>SPEED AT S.L.</td>
<td>80</td>
<td>80</td>
<td>80</td>
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<tr>
<td>MAX. SPEED/ALTITUDE (B)</td>
<td>80/S.L.</td>
<td>80/S.L.</td>
<td>80/S.L.</td>
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<td>COMBAT RANGE</td>
<td>70.65</td>
<td>35.14</td>
<td>71.88</td>
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<td>AVERAGE CRUISING SPEED</td>
<td>80</td>
<td>80</td>
<td>80</td>
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<tr>
<td>COMBAT RADIUS</td>
<td>27.75</td>
<td>9.40</td>
<td>28.45</td>
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<tr>
<td>AVERAGE CRUISING SPEED</td>
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</tbody>
</table>

### NOTES:

PERFORMANCE: Determined from calculation based on test data obtained during Contractor's Flight Demonstration Program at NATC.

All performance is out of ground effect.

(A) Military Power

(B) Vmax is restricted to 80 knots pending incorporation of a longitudinal cyclic limiter.
NOTES

COMBAT RADIUS MISSION

WARM-UP AND TAKE-OFF: 1/2 minute at Normal Rated Power.
CRUISE OUT: At $V_{\text{max}}$ at sea level.
HOVER: 12 minutes out of ground effect at sea level at objective.
DROP WEAPON: No fuel used, no distance gained.
CRUISE BACK: At $V_{\text{max}}$ at sea level.
RESERVE: 10 percent of initial fuel load.

MISSION TIME: Excludes warm-up, take-off and reserve fuel
CYCLE TIME: Exclude warm-up and take-off fuel

COMBAT RANGE MISSION

WARM-UP AND TAKE-OFF: 1/2 minute at Normal Rated Power
CRUISE: At sea level at average cruising speed (speed for maximum range.)
RESERVE: 10 percent of initial fuel load.