Standard Aircraft Characteristics

BY AUTHORITY OF
COMMANDING GENERAL
AIR MATERIEL COMMAND
U.S. AIR FORCE

SIX R4360-25
PRATT-WHITNEY

31 MAY 1949
**POWER PLANT**

- No. & Model: (6) R 4360-25
- Mfr.: Pratt & Whitney
- Superch.: G.E. BM Turbos
- Red. Gear: 0.381
- Prop Mfr.: Curtiss
- Prop Dia.: 19.0'
- Prop Type: Electric
- Model: C-6368P-A
- Blade Des.: 1129-1C6-24

**ENGINE RATINGS**

- BHP - RPM - ALT.
  - T.O.: 3000 - 2700 - S.L.
  - Mil: 3000 - 2700 - 40,000
  - Nor: 2500 - 2550 - 40,000

**CAPACITIES**

- INSIDE CLEARANCES
  - UPPER DECK
    - Length (overall): 120.0'
    - Width (floor level): 10.3'
    - Height (max.): 7.5'

  - LOWER DECK-FORWARD
    - Length (overall): 33.6'
    - Width (floor level): 8.5'
    - Height (max.): 9.58'

  - LOWER DECK-AFT
    - Length (overall): 40.0'
    - Width (floor level): 8.5'
    - Height (max.): 9.58'

- MAIN LOADING DOORS
  - FORWARD
    - Length (max.): 16.5'
    - Width (max.): 8.5'
  - AFT
    - Length (max.): 31.5'
    - Width (max.): 8.5'

**MISSION AND DESCRIPTION**

The basic mission of the XC-99 is to transport a maximum of personnel, cargo, and/or combat equipment to remote base and return without refueling.

Fittings provided for cargo tie-down include 3000 lb. engine fittings, and 1500 lbs. tie-down rings on a 20 in. or less grid throughout the cargo compartments. A cargo of 16,117 cu ft. with allowable unit floor loadings up to 150 lb. per sq. ft. can be accommodated.

A total of four electrically operated cargo hoists, operating on overhead tracks extending the entire length of each cargo area, are provided on the two decks to facilitate loading and unloading of cargo.

The crew of ten includes pilot, co-pilot, flight engineer, radio operator, and navigator, and a complete relief crew.

Heat anti-icing is provided for the wing, horizontal and vertical tail surfaces. Cabin heating is provided.

**DEVELOPMENT**

Design Initiated: June 1942
First Flight: Nov. 1947
First Acceptance: May 1949

**WEIGHTS**

- Loading: 135,314(A)
- Gross: 138,118(A)
- Design: 265,000
- Combat: *162,250
- Max. T.O.: 300,000
- Max. Land.: 300,000

*For basic mission
†Limited by performance
(A) Actual

**FUEL**

- Location
  - Tanks: 2
  - Gal.: 4524
  - 8168
  - 8424
  - Total: 21,116
- Spec: AN-F-48
- Grade: 100/130

**OIL**

- Capacity: 1200
- Spec.: AN-0-8

**ELECTRONICS**

- VHF Command: AN/ARC-3
- Liaison: AN/AAR-8
- HF Command: AN/ARC-9
- Auto. Radio Compass: AN/ARC-7
- Manual Radio Comp.: AN/RN-11
- Localizer: RC103 ( )
- Glide Path: AN/ARN-5A
- Marker Beacon: RC-193
- IFF: SCR-695
- Loran: AN/APN-9
- Interphone: AN/AIC-3
- Radio Altimeter: SCR-718
- Control Assy: AN/ARA-10
- Static Dischargers: AN/ASA-3

**DIMENSIONS**

- Span: 230.0'
- Length: 182.5'
- Height: 57.9'
- Tread: 46.0'
- Prop Grd. Clearance: 4.08'

**CARGO**

- 400 Combat Troops
- 305 Litters
- 35 Attendants
- 117,000 lb. Max. Cargo
## Loading and Performance - Typical Mission

<table>
<thead>
<tr>
<th>CONDITIONS</th>
<th>BASIC</th>
<th>RE-SUPPLY</th>
<th>SUPPLY</th>
<th>HIGH ALT. SUPPLY</th>
<th>FERRY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
<td>V</td>
</tr>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td>300,000</td>
<td>300,000</td>
<td>7,362</td>
<td>21,116</td>
<td>274,499</td>
</tr>
<tr>
<td>Oil</td>
<td>8,950</td>
<td>7,362</td>
<td>21,116</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cargo - Maximum</td>
<td>358.0</td>
<td>294.5</td>
<td>884.5</td>
<td>294.5</td>
<td>644.5</td>
</tr>
<tr>
<td>Cargo - Minimum</td>
<td>105,500</td>
<td>115,500</td>
<td>28,851</td>
<td>294.5</td>
<td>644.5</td>
</tr>
<tr>
<td>Wing Loading (lb/sq ft)</td>
<td>62.9</td>
<td>62.9</td>
<td>62.9</td>
<td>62.9</td>
<td>57.5</td>
</tr>
<tr>
<td>Take-off Power Loading (lb/bhp)</td>
<td>16.68</td>
<td>16.68</td>
<td>16.68</td>
<td>16.68</td>
<td>15.26</td>
</tr>
<tr>
<td>Stalling Speed (kts)</td>
<td>96.0</td>
<td>96.0</td>
<td>96.0</td>
<td>96.0</td>
<td>92.0</td>
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<tr>
<td>TAKE-OFF DISTANCE SL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Run (no wind)</td>
<td>4 (ft)</td>
<td>5480</td>
<td>5480</td>
<td>5480</td>
<td>4050</td>
</tr>
<tr>
<td>To Clear 50 Ft. Obst.</td>
<td>4 (ft)</td>
<td>7250</td>
<td>7250</td>
<td>7250</td>
<td>5420</td>
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<tr>
<td>CLIMB FROM S.L.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate of Climb (fpm)</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>645</td>
</tr>
<tr>
<td>Time To 10,000 Ft. (min)</td>
<td>21.64</td>
<td>21.64</td>
<td>21.64</td>
<td>21.64</td>
<td>16.20</td>
</tr>
<tr>
<td>Time To 20,000 Ft. (min)</td>
<td>49.44</td>
<td>49.44</td>
<td>49.44</td>
<td>49.44</td>
<td>49.44</td>
</tr>
<tr>
<td>RADIUS OF ACTION (n.mi)</td>
<td>1000</td>
<td>760</td>
<td>2805</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. Cruising Speed (kts)</td>
<td>160</td>
<td>160</td>
<td>165</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Mission Time (hr: min)</td>
<td>12:56</td>
<td>9:58</td>
<td>34:23</td>
<td>5:27</td>
<td>38:46</td>
</tr>
<tr>
<td>MAX. RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Speed for Range (kts)</td>
<td>1350</td>
<td>1080</td>
<td>5170</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cruising Altitude (ft)</td>
<td>178</td>
<td>170</td>
<td>205</td>
<td>194</td>
<td>164</td>
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<tr>
<td>PERFORMANCE WEIGHT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance Alt. (over target) (ft)</td>
<td>182,250</td>
<td>158,500</td>
<td>199,319</td>
<td>256,644</td>
<td>149,925</td>
</tr>
<tr>
<td>Max. Speed (over target) (kts)</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
<td>222</td>
</tr>
<tr>
<td>Rate of Climb (over target) (fpm)</td>
<td>2005</td>
<td>2070</td>
<td>1485</td>
<td>915</td>
<td>2235</td>
</tr>
<tr>
<td>Combat Ceiling (500 fpm) (ft)</td>
<td>39,100</td>
<td>39,300</td>
<td>36,000</td>
<td>27,000</td>
<td>39,750</td>
</tr>
<tr>
<td>Service Ceiling (100 fpm) (ft)</td>
<td>40,490</td>
<td>40,510</td>
<td>39,200</td>
<td>33,500</td>
<td>40,700</td>
</tr>
<tr>
<td>Max. Speed @ Opt. Alt. (kts)</td>
<td>297</td>
<td>298</td>
<td>290</td>
<td>274</td>
<td>300</td>
</tr>
<tr>
<td>Opt. Altitude (ft)</td>
<td>32,000</td>
<td>32,250</td>
<td>31,250</td>
<td>30,800</td>
<td>32,500</td>
</tr>
<tr>
<td>Max. Climb @ S.L. (fpm)</td>
<td>2060</td>
<td>2130</td>
<td>1540</td>
<td>1020</td>
<td>2265</td>
</tr>
<tr>
<td>LANDING WEIGHT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landing Ground Roll @ S.L. (ft)</td>
<td>1400</td>
<td>1390</td>
<td>1440</td>
<td>2480</td>
<td>1440</td>
</tr>
<tr>
<td>Total From 50 FT. to Stop (ft)</td>
<td>2510</td>
<td>2500</td>
<td>2570</td>
<td>4025</td>
<td>2570</td>
</tr>
</tbody>
</table>

**NOTES**

1. Take-off power planning add 25% to distances shown.
2. Max power
3. Normal power
4. Take-off and landing distances are obtainable at sea level using normal technique. For airport.

**CONDITIONS:**

(a) Performance Basis: NACA standard day, no wind, single airplane shown.
(b) Fuel consumption used in computing RADIUS & RANGE is increased 5% based on manufacturer's estimates.
(c) Performance is based on powers shown on page 6.

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**XC-99**

RESTRICTED

31 MAY 1949
NOTES

RADIUS: MISSION I

Take-off, climb on course to 10,000 feet cruising altitude with normal rated power, cruise out at long range speeds, land and unload cargo. Without refueling take-off, climb on course to 10,000 feet cruising altitude, and return at long range speeds. Range free allowances are: 20 minutes normal power fuel consumption for warm-ups and take-offs, plus 5% of initial fuel load for landing and endurance reserve. Distance covered in climb is included in the radius.

RADIUS: MISSION II

Same flight plan as for basic mission, except that maximum and minimum cargo loads are considered for the maximum take-off gross weight.

RANGE: MISSION III, IV, V

Take-off, climb on course to specified altitude with normal rated power, cruise out at long range speeds (one way flight only) at the specified cruising altitude. Aircraft is flown to a point where 90% of fuel has been used, then landed and unloaded.

Range free allowances: 10 minutes normal power fuel consumption for warm-up and take-off, plus 10% of initial fuel load for landing reserve.

GENERAL DATA:

(a) For detailed planning refer to the Handbook of Flight Operating Instructions, XC-99 Airplane, dated 31 March 1949.

(b) Engine ratings shown on page 3 are manufacturer's guaranteed ratings. Power values used for performance calculations are as follows:

<table>
<thead>
<tr>
<th></th>
<th>BHP</th>
<th>RPM</th>
<th>ALT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T.O.</td>
<td>3000</td>
<td>2700</td>
<td>S.L.</td>
</tr>
<tr>
<td>Mil.</td>
<td>3000</td>
<td>2700</td>
<td>34,000</td>
</tr>
<tr>
<td>Nor.</td>
<td>2500</td>
<td>2550</td>
<td>37,000</td>
</tr>
</tbody>
</table>