Standard Aircraft Characteristics

RB-36H III

Consolidated-Vultee

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

SIX R-4360-53
PRATT & WHITNEY
AND
FOUR J47-GE-19
GENERAL ELECTRIC

21 MAR 55

SECRET

RB-36H (III)
**Power Plant**

- No. & Model: (6) R-4360-53
- Mfr: Pratt & Whitney
- Engine Spec No.: A-7076-F

**Mission and Description**

- Navy Equivalent: None
- Mfr's Model: 36

The principal missions of the RB-36H(III) are all purpose strategic reconnaissance, day and night mapping, charting, and bomb damage assessment.

- The normal crew consists of aircraft commander, pilot, co-pilot, (2) flight engineers, primary navigator, photo-navigator, radar observer, weather observer, (2) radio operators, photographer technician, (4) ECM operators, and (3) gunners.

- Crew and camera compartments are pressurized, heated and ventilated. Compartment heating, enclosure defrosting, wing and tail anti-icing are accomplished by heated air obtained from heat exchangers in stalled in the reciprocating engine cooling system.

- The defensive armament consists of a 20mm gun tail turret, controlled by AN/APG-41A radar.

- The airplane has a single-point refueling, manifold type fuel system.

**Development**

- The major differences of the RB-36H(III) from the standard configuration are removal of (1) all turrets except the tail turret; (2) self-sealing pads; (3) fuel purging system; (4) crew comfort items; (5) gun sighting blisters; and (6) oxygen provisions from deleted crew stations.

**Weights**

- Loading: 162,019
- Empty (A): 155,556
- Basic (A): 370,000
- Design: 20
- Combat: 254,000
- Max T.O.: 700,000
- Max Land: 357,500

**Fuel**

- Location: No. Tanks: Gal
- Wg Outboard: 2
- Wg Ctr: 2
- Wg Lnd: 2
- Center Sec: 2
- Bomb Bay: 2
- Total: 33,636
- Grade: 115/145
- Specification: MIL-F-5572

**Oil**

- Outboard (Jet): 4
- Wing (Recip): 6
- Grade (Recip): 1100
- Specification (Recip): J-I-L-6082A

**Water/Alcohol**

- Engine Nacelle: 6

**Electronics**

- UHF Command: AN/ARC-27
- VHF Command: AN/ARC-3
- AN/ARC-21X
- Liaison: AN/ARC-6
- Radio Compass: AN/ARC-14
- High Latitude Compass: AN/ARC-18
- Marker Beacon: AN/ARC-7
- L.F.: AN/ARC-6
- Glide Path: AN/ARC-14
- Omni-Range: AN/ARC-18
- GLON: AN/ARC-7
- Gun Laying Radar: AN/ARC-41
- Interphone: USAF Combat
- Defensive & Ferret ECM

**Dimensions**

- Wing Span: 230'0"
- Incidence (Root): 3'
- Dihedral: 2'
- Sweepback (LE): 15°30'
- Length: 162.1'
- Height: 46.8'
- Tread: 46.0'
- Prop. Grd. Clearance: 54"
## Loading and Performance—Typical Mission

<table>
<thead>
<tr>
<th>CONDITIONS</th>
<th>BASIC MISSION</th>
<th>MAX BOMBS</th>
<th>MAX ATTAIN, ALT.</th>
<th>HIGH ZONE ALT.</th>
<th>HIGH SPEED</th>
<th>FERRY RANGE</th>
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<tbody>
<tr>
<td>I</td>
<td></td>
<td>II</td>
<td>III</td>
<td>IV</td>
<td>V</td>
<td>VI</td>
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<tr>
<td><strong>TAKE-OFF WEIGHT</strong></td>
<td>(lb)</td>
<td>370,000</td>
<td>370,000</td>
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<tr>
<td>Fuel at 6 lb/gal (Grade 115/145)</td>
<td>(lb)</td>
<td>198,640</td>
<td>175,030</td>
<td>188,640</td>
<td>188,640</td>
<td>192,160</td>
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<td>Payload (Flash bombs)</td>
<td>(lb)</td>
<td>2256</td>
<td>15,040</td>
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<td>None</td>
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<tr>
<td>Payload (Chaff)</td>
<td>(lb)</td>
<td>1400</td>
<td>1400</td>
<td>1408</td>
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<td>None</td>
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<tr>
<td>Wing Loading</td>
<td>(lb/sec ft)</td>
<td>77.5</td>
<td>77.5</td>
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<td>Stall speed (power off)</td>
<td>(kn)</td>
<td>107</td>
<td>107</td>
<td>107</td>
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<tr>
<td>Take-off ground run at SL</td>
<td>(ft)</td>
<td>3990</td>
<td>3990</td>
<td>3990</td>
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<tr>
<td>Take-off to clear 50 ft</td>
<td>(ft)</td>
<td>5110</td>
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<tr>
<td>Rate of climb at SL</td>
<td>(fpm)</td>
<td>940</td>
<td>940</td>
<td>940</td>
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<td>940</td>
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<tr>
<td>Rate of climb at SL (one eng. out)</td>
<td>(fpm)</td>
<td>955</td>
<td>955</td>
<td>955</td>
<td>955</td>
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<td>Time: SL to 10,000 ft</td>
<td>(min)</td>
<td>11</td>
<td>11</td>
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<tr>
<td>Time: SL to 20,000 ft</td>
<td>(min)</td>
<td>26</td>
<td>26</td>
<td>26</td>
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<td>26</td>
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<tr>
<td>Service ceiling (100 fpm)</td>
<td>(ft)</td>
<td>33,300</td>
<td>33,300</td>
<td>33,300</td>
<td>33,300</td>
<td>33,300</td>
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<tr>
<td>Service ceiling (one eng. out)</td>
<td>(ft)</td>
<td>30,200</td>
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<tr>
<td><strong>COMBAT RANGE</strong></td>
<td><strong>(n.mi)</strong></td>
<td>3145</td>
<td>2875</td>
<td>2910</td>
<td>2965</td>
<td>1420</td>
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<td><strong>COMBAT RADIUS</strong></td>
<td><strong>(n.mi)</strong></td>
<td>208</td>
<td>209</td>
<td>211</td>
<td>209</td>
<td>346</td>
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<td>Average cruise speed</td>
<td>(kn)</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>32,000</td>
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<tr>
<td>Initial cruising altitude</td>
<td>(ft)</td>
<td>322</td>
<td>322</td>
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<tr>
<td>Target speed</td>
<td>(kn)</td>
<td>40,000</td>
<td>39,500</td>
<td>44,500</td>
<td>43,000</td>
<td>37,800</td>
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<tr>
<td>Target altitude</td>
<td>(ft)</td>
<td>34,100</td>
<td>34,200</td>
<td>34,100</td>
<td>34,100</td>
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<tr>
<td>Final cruising altitude</td>
<td>(hr)</td>
<td>29.9</td>
<td>27.2</td>
<td>27.1</td>
<td>27.8</td>
<td>8.6</td>
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<tr>
<td>Total mission time</td>
<td>(hr)</td>
<td>254,600</td>
<td>247,500</td>
<td>252,700</td>
<td>251,600</td>
<td>232,300</td>
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<tr>
<td><strong>COMBAT WEIGHT</strong></td>
<td>(lb)</td>
<td>40,000</td>
<td>39,500</td>
<td>44,500</td>
<td>43,000</td>
<td>37,800</td>
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<tr>
<td>Combat altitude</td>
<td>(kn)</td>
<td>360</td>
<td>362</td>
<td>332</td>
<td>344</td>
<td>359</td>
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<tr>
<td>Combat climb</td>
<td>(fpm)</td>
<td>530</td>
<td>625</td>
<td>125</td>
<td>250</td>
<td>385</td>
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<tr>
<td>Combat ceiling (500 fpm)</td>
<td>(ft)</td>
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<td>40,900</td>
<td>40,500</td>
<td>40,600</td>
<td>39,400</td>
</tr>
<tr>
<td>Service ceiling (100 fpm)</td>
<td>(ft)</td>
<td>43,900</td>
<td>44,300</td>
<td>44,000</td>
<td>44,100</td>
<td>43,300</td>
</tr>
<tr>
<td>Service ceiling (one eng. out)</td>
<td>(ft)</td>
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<td>41,800</td>
<td>41,500</td>
<td>41,600</td>
<td>41,000</td>
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<tr>
<td>Max rate of climb at SL</td>
<td>(fpm)</td>
<td>2090</td>
<td>2130</td>
<td>2070</td>
<td>2080</td>
<td>2950</td>
</tr>
<tr>
<td>Max speed at optimum altitude</td>
<td>(kn)</td>
<td>364/38,000</td>
<td>364/38,100</td>
<td>364/38,100</td>
<td>364/38,100</td>
<td>359/36,000</td>
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<tr>
<td>Basic speed at 25,000/35,000 ft</td>
<td>(kn/kn)</td>
<td>341/360</td>
<td>342/362</td>
<td>342/361</td>
<td>342/361</td>
<td>340/358</td>
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<tr>
<td><strong>LANDING WEIGHT</strong></td>
<td>(lb)</td>
<td>188,410</td>
<td>188,260</td>
<td>188,410</td>
<td>188,410</td>
<td>188,410</td>
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<tr>
<td>Ground roll at SL</td>
<td>(ft)</td>
<td>1840</td>
<td>1840</td>
<td>1840</td>
<td>1840</td>
<td>1840</td>
</tr>
<tr>
<td>Ground roll (auxiliary brake)</td>
<td>(ft)</td>
<td>1820</td>
<td>1820</td>
<td>1820</td>
<td>1820</td>
<td>1820</td>
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<tr>
<td>Total from 50 ft</td>
<td>(ft)</td>
<td>3290</td>
<td>3290</td>
<td>3290</td>
<td>3290</td>
<td>3290</td>
</tr>
<tr>
<td>Total from 50 ft (auxiliary brake)</td>
<td>(ft)</td>
<td>3040</td>
<td>3040</td>
<td>3040</td>
<td>3040</td>
<td>3040</td>
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</tbody>
</table>

**PERFORMANCE BASIS:**

(a) Data source: Calculated data based on flight test of B-36F and H Aircraft with configuration adjustments

(b) Performance is based on powers shown on page 6

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RB-36H (III)
NOTES

Formula: Radius Missions I & II

Warm-up, take-off and climb on course to 5000 feet at normal power, cruise out at long range speeds and altitudes. Conduct a long range climb so as to arrive at cruise ceiling 500 nautical miles from target. Cruise at combat altitude with long range speeds until 15 minutes from target; conduct 10 engine normal power photographic run, drop flash bombs and chaff, conduct 2 minutes evasive action and 8 minutes escape from target at normal power. After leaving target area, cruise 500 nautical miles toward base using long range speeds at combat altitude. Descend to optimum cruise altitude and cruise-climb to base. Range free allowances include 10 minutes normal power fuel consumption for reciprocating engines and 5 minutes normal power fuel consumption for jet engines for starting and take-off, 2 minutes normal power fuel consumption at combat altitude for evasive action, 30 minutes fuel consumption at sea level for long range speeds (reciprocating engines only) plus 5% of initial fuel load for landing and endurance reserve.

Formula: Radius Mission III

Warm-up, take-off and climb on course to 5000 feet at normal power, cruise out at long range, speeds and altitudes. Conduct a long range climb to arrive at maximum attainable altitude 500 nautical miles from target. Cruise on maximum attainable altitude flight path; 15 minutes from target conduct 10 engine normal power photographic run at altitude attained at start of run, drop flash bombs and chaff, conduct 2 minutes evasive action and 8 minutes escape from target at normal power. After leaving target area, cruise 500 nautical miles toward base using long range speeds at combat altitude. Descend to optimum cruise altitude and cruise-climb to base. Range free allowances are the same as for Radius Mission I.

Formula: Radius Mission IV

Warm-up, take-off and climb on course to 5000 feet at normal power, cruise out at long range speeds and altitudes. Conduct a long range climb to arrive at maximum attainable altitude 500 nautical miles from target. Cruise at that altitude; 15 minutes from target conduct 10 engine normal power photographic run, drop flash bombs and chaff, conduct 2 minutes evasive action and 8 minutes escape from target at normal power. After leaving target area, cruise 500 nautical miles toward base using long range speeds at combat altitude. Descend to optimum cruise altitude and cruise-climb to base. Range free allowances are the same as for Radius Mission I.

Formula: Radius Mission V

Entire mission is conducted at normal power. Warm-up, take-off and climb on course to optimum altitude for high speed. Cruise at optimum altitude for high speed to point where climb is made so as to arrive at cruise ceiling 500 nautical miles from target. Cruise to target at combat altitude, conduct photographic run, drop flash bombs and chaff, conduct 2 minutes evasive action and 8 minutes escape from the target. After leaving target area, cruise 500 nautical miles toward base; descend to optimum altitude for high speed and cruise-climb to base. If after bomb drop, optimum altitude for high speed is above combat altitude, climb is begun after 2 minutes evasive action. Range free allowances are the same as for Radius Mission I.

Formula: Ferry Range Mission VI

Warm-up, take-off and climb on course to 5000 feet at normal power, cruise-climb at long range speeds until all usable fuel is consumed. Range free allowances are the same as for Radius Mission I except for omission of 2 minutes evasive action.

General Data:

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

(6) H360-53         (4) J47-GE-19

<table>
<thead>
<tr>
<th>BHP</th>
<th>RPM</th>
<th>ALT.</th>
<th>MIN.</th>
<th>S.L.S.</th>
<th>LB.</th>
<th>RPM</th>
<th>MIN.</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>2800</td>
<td>SL</td>
<td>5</td>
<td>1000</td>
<td>2800</td>
<td>SL</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>3500</td>
<td>2800</td>
<td>30</td>
<td>5010</td>
<td>7950</td>
<td>5</td>
<td>5010</td>
</tr>
<tr>
<td>2800</td>
<td>2800</td>
<td>35,000</td>
<td>Cont</td>
<td>4000</td>
<td>7630</td>
<td>Cont</td>
<td>Cont</td>
</tr>
</tbody>
</table>

* Wet

† Turbosupercharger limitation

(b) For detailed planning refer to Technical Order 1B-36(H)(III)-1 and other applicable technical orders.

(c) AN/AIC-10 Interphone effective on aircraft serial No. 326 and subs. USAF Combat effective on aircraft serial numbers prior to No. 326.

Performance Reference:


Revision Basis: To reflect Featherweight performance,