Standard Aircraft Characteristics

XB-47D

Boeing

TWO YT49-W-1
WRIGHT
AND
TWO J47-GE-23
GENERAL ELECTRIC

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

1 JUL 55

SECRET
**POWER PLANT**

No & Model: (2) YT49-W-1
Mfr: Wright
Engine Spec No: .875-E
Type: Axial
Prop Mfr: Curtiss
Prop Type: Reversible
No. Blades: 4
Prop Diameter: .1570

No. & Model: (2) J47-GE-23
Mfr: General Electric
Type: Axial
Length: .1456
Diameter: .395
Weight (dry): 2912 lb

**ENGINE RATINGS**

(2) YT49-W-1
S.L.S. ESHP - SHP - LB - RPM - MIN
T.O. 9710 - 8500 - 3025 - 8000 - 5
Mil: 9710 - 8500 - 3025 - 8000 - 30
Nor: 8770 - 7700 - 2600 - 7700 - Cont

(2) J47-GE-23
S.L. Static LB - RPM - MIN
Max: .5810 - 7950 - 5
Mil: .6520 - 7800 - 30
Nor: .6270 - 7630 - Cont

* No Inlet Screens

**DIMENSIONS**

Wing Span: 116.0
Incidence (root): 2.40
(Tip): 2.45
Dihedral: 0
Sweepback (LE): 36°38
Length: 106.8
Height: 27.9
Tread (outrigger): 44.3
Prop Gnd Clearance: 17.0

**MISSION AND DESCRIPTION**

Navy Equivalent: None
Mfr's Model: 450-162-28

The XB-47D is a high speed, long range composite turbo-prop, turbojet bomber whose mission is to serve as a test bed for determining feasibility of turbo-prop utilization.

The normal crew consists of pilot, co-pilot-gunner, and bombardier-navigator.

Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, and pressurization; hydraulic boost on all control surfaces.

Reversible propellers as well as an emergency braking parachute are used to decrease landing roll distance.

Single-point ground refueling is provided.

**WEIGHTS**

<table>
<thead>
<tr>
<th>Loading</th>
<th>Lb/LF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty</td>
<td>79,800(E)</td>
</tr>
<tr>
<td>Basic</td>
<td>82,409(E)</td>
</tr>
<tr>
<td>Design</td>
<td>.125,000</td>
</tr>
<tr>
<td>Combat</td>
<td>*121,850</td>
</tr>
<tr>
<td>Max T.O.</td>
<td>*184,428</td>
</tr>
<tr>
<td>Max Land</td>
<td>*180,000</td>
</tr>
<tr>
<td>(E) Estimated</td>
<td></td>
</tr>
</tbody>
</table>
  * For Basic Mission
  † Limited by Space
  ‡ Limited by Structure
  See note (b) page 6

**FUEL**

Location No. Tanks Gal
Fwd, Main\* 1 2938
Fwd, Main Aux\* 1 1005
Ctr, Main\* 1 2841
Aft, Main\* 1 3425
Aft, Aux\* 1 346
Bomb Bay\* 1 3224
See note (d) page 6. Total 13,979

Grade... JP-4
Specification... MIL-F-5624A
Oil (YT49-W-1)
Nacelle 2 42
Grade... Synthetic: WS-2443
Specification... MIL-L-7808A
(J47-GE-23)
Wing 2 18.8
Grade... 1005
Specification... MIL-L-6081A

Self-Sealing

**ELECTRONICS**

UHF Command... AN/ARC-27
Omni-Dir. Rec'd'r... AN/ARN-14
Radio Compass... AN/ARN-6
Interphone... USAF Combat
Marker Beacon... AN/ARN-12
Identification... AN/APX-6
Liaison... AN/ARC-21
ECM... AN/ARP-5A
Radar Beacon... AN/APN-76
Emergency Keyer... AN/ARA-26
Glide Path... AN/ARN-18

**BOMBS**

See note (c) page 6

**GUNS**

See note (c) page 6

**DEVELOPMENT**

Design Initiated... Feb 51
Contract Approval... Apr 51
Mock-up... Jan 52
First Flight... Jul 55 (est)
First Acceptance... Feb 56 (est)
Phase II contract for one prototype only
XB-47D developed from B-47B
## Loading and Performance—Typical Mission

<table>
<thead>
<tr>
<th>CONDITIONS</th>
<th>BASIC MISSION</th>
<th>FERRY RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td>(lb) 184,428</td>
<td>(lb) 174,428</td>
</tr>
<tr>
<td>Fuel at 6.5 lb/gal (grade JP-4)</td>
<td>(lb) 90,865</td>
<td>(lb) 90,865</td>
</tr>
<tr>
<td>Payload (bombs)</td>
<td>(lb) 10,000</td>
<td>NONE</td>
</tr>
<tr>
<td>Wing loading (lb/sq ft)</td>
<td>129.2</td>
<td>122.1</td>
</tr>
<tr>
<td>Stall speed (power off)</td>
<td>(kn) 154</td>
<td>150</td>
</tr>
<tr>
<td>Take-off ground run at SL</td>
<td>(ft) 4850</td>
<td>4830</td>
</tr>
<tr>
<td>Take-off to clear 50 ft</td>
<td>(ft) 7320</td>
<td>6500</td>
</tr>
<tr>
<td>Rate of climb at SL</td>
<td>(fpm) 2910</td>
<td>3200</td>
</tr>
<tr>
<td>Rate of climb at SL (one engine out)</td>
<td>(fpm) 1490</td>
<td>1840</td>
</tr>
<tr>
<td>Time: SL to 30,000 ft</td>
<td>(min) 9.6</td>
<td>8.9</td>
</tr>
<tr>
<td>Time: SL to 30,000 ft</td>
<td>(min) 19.7</td>
<td>17.7</td>
</tr>
<tr>
<td>Service ceiling (100 fpm)</td>
<td>(ft) 33,750</td>
<td>35,000</td>
</tr>
<tr>
<td>Service ceiling (one engine out)</td>
<td>(ft) 19,750</td>
<td>21,800</td>
</tr>
<tr>
<td>COMBAT RANGE</td>
<td>(n.m.l.)</td>
<td>5750</td>
</tr>
<tr>
<td>COMBAT RADIUS</td>
<td>(n.m.l.)</td>
<td>2717</td>
</tr>
<tr>
<td>Average cruise speed</td>
<td>(kn) 402</td>
<td>402</td>
</tr>
<tr>
<td>Initial cruising altitude</td>
<td>(ft) 24,250</td>
<td>26,100</td>
</tr>
<tr>
<td>Target speed</td>
<td>(kn) 437</td>
<td></td>
</tr>
<tr>
<td>Target altitude</td>
<td>(ft) 40,000</td>
<td></td>
</tr>
<tr>
<td>Final cruising altitude</td>
<td>(ft) 42,400</td>
<td>42,400</td>
</tr>
<tr>
<td>Total mission time</td>
<td>(hr) 13.7</td>
<td>14.5</td>
</tr>
<tr>
<td>COMBAT WEIGHT</td>
<td>(lb) 121,850</td>
<td>90,670</td>
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<tr>
<td>Combat altitude</td>
<td>(ft) 40,000</td>
<td>42,400</td>
</tr>
<tr>
<td>Combat speed</td>
<td>(kn) 461</td>
<td>476</td>
</tr>
<tr>
<td>Combat climb</td>
<td>(fpm) 720</td>
<td>1400</td>
</tr>
<tr>
<td>Combat ceiling (500 fpm)</td>
<td>(ft) 41,500</td>
<td>47,300</td>
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<tr>
<td>Service ceiling (100 fpm)</td>
<td>(ft) 42,500</td>
<td>48,100</td>
</tr>
<tr>
<td>Service ceiling (one engine out)</td>
<td>(ft) 34,800</td>
<td>41,600</td>
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<tr>
<td>Max rate of climb at SL</td>
<td>(fpm) 5140</td>
<td>7460</td>
</tr>
<tr>
<td>Max speed at 13,500 ft</td>
<td>(kn) 519</td>
<td>519</td>
</tr>
<tr>
<td>Basic speed at 35,000 ft</td>
<td>(kn/ft) 479</td>
<td>487</td>
</tr>
<tr>
<td>LANDING WEIGHT</td>
<td>(lb) 90,670</td>
<td>90,670</td>
</tr>
<tr>
<td>Ground roll at SL</td>
<td>(ft) 2750</td>
<td>2750</td>
</tr>
<tr>
<td>Ground roll (auxiliary brake)</td>
<td>(ft) 1330</td>
<td>1330</td>
</tr>
<tr>
<td>Total from 50 ft</td>
<td>(ft) 3750</td>
<td>3750</td>
</tr>
<tr>
<td>Total from 50 ft (auxiliary brake)</td>
<td>(ft) 2330</td>
<td>2330</td>
</tr>
</tbody>
</table>

### Notes
1. T.O. Power
2. MAX Power
3. Normal Power

### Performance Basis
- (a) Data source: Estimated data plus B-47B Flight Test.
- (b) Performance is based on powers shown on page 5.
NOTES

FORMULA: RADIUS MISSION I

Take-off and climb on course to optimum cruise altitude with turbo-props and turbo-jets at normal power. Cruise out at long range speeds increasing altitude with decreasing airplane weight (turbo-jets windmilling). Climb so as to reach cruise ceiling fifteen (15) minutes from target and run into target at normal power, drop bombs, conduct two (2) minutes evasive action and eight (8) minutes escape from target at normal power. Cruise back to home base at long range speeds increasing altitude with decreasing airplane weight (turbo-jets windmilling). Range free allowances include five (5) minutes normal power fuel consumption for starting engines and take-off, two (2) minutes normal power fuel consumption at combat altitude for evasive action and thirty (30) minutes of maximum endurance (turbo-jets windmilling) fuel consumption at sea level plus 5% of initial fuel load for landing reserve.

FORMULA: RANGE MISSION II

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed increasing altitude with decreasing airplane weight until all usable fuel is consumed. Range free allowances include five (5) minutes normal power fuel consumption for starting engines and take-off and thirty (30) minutes of maximum endurance (turbo-jets windmilling) fuel consumption at sea level plus 5% of initial fuel load for landing reserve.

GENERAL NOTES

(a) All cruise is performed with turbo-jets windmilling.

(b) Take-off weight as per Detail Specification D-12250 dated 1 February 1952 but as yet not substantiated by WADC.

(c) The XB-47D is to be delivered as a test bed with no tactical equipment. However, for comparative purposes, performance shown herein is based on the airplane with the tactical equipment installed.

(d) Provisions are incorporated to permit installation of 2 wing drop tanks (3390 gal tot).