Standard Aircraft Characteristics

B-47E IV

STRATOJET

Boeing

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

SIX J47-GE-25, 25A
GENERAL ELECTRIC

Aug 62 (AFG 2, Vol-1, Addn 30)
(1T of 242)
POWER PLANT

NR & Model ........ (6)47-GE-24, 25A
Type ................. General Electric
Engine Spec No ........ E-557A
Type ................. Axial Flow
Length ................ 144
Diameter ............. 39.5
Weight (dry) ........ 2707 lb
Tall Pipe ............ Fixed Area
Augmentation .......... Water/Air

ENGINE RATINGS

S. L. State  LB - RPM - MIN
Max 57200 - 7500 - 5
Mil 5070 - 7500 - 5
Norm 5320 - 7800 - 30
Cont 5660 - 7800 - 20

Wet Water flow of 690 lb/min
ATO

Thrust (lb) .......... 30,000
Duration (sec) ....... 16

Thrust (lb) .......... 19,000
Duration (sec) ....... 15

DIMENSIONS

Wing
Span ................ 116.0
Incidence ................ 29.45
Dihedral ............. 0.0
Sweepback (LE) ....... 36.57
Length ................ 107.4
Height ................ 28.0
Tread (outtrigger) ... 44.3

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Length ................ 107.4
Height ................ 28.0
Tread (outtrigger) ... 44.3

WEIGHTS

Loading Lb
Empty ........ 79,024 (E)
Basic ........... 81,044 (E)
Design ........... 125,000
Combat ........... 125,000
Max T.O. ........ 128,000
Max In-Flight ........ 128,000
Max Landing ....... 118,000

Fuel

Location No. Tanks  Gal
Fwd Main ........... 2130
Fwd Aux ............. 990
Center Main ........ 2810
Booth Bay ........... 1230
Aft Main ............ 1430
AFT Tank ........... 1220
Total ................ 7400

Guns

Type Size Rds on Loc.
2.44M41, 20mm, 350, Fus.tail

Cameras

Vertical Station

Type  Lens
K-37  12"
K-22A  12"
K-17C  24"
Camera station is located in the lower aft portion of the fuselage aft of the bomb bay.

Development

The B-47E-1V airplane differs from the Basic B-47E-II, by the strengthening of the landing gear to permit heavier take-off weights. Data is shown for the test article (862nd B-47E). The modification is effective on the 862nd and subsequent aircraft.

BOMBS

Nr  Class (lbs)
1  Special Weapon

GUNS

Nr  Type Size Rds on Loc.
2  M4A1, 20mm, 350, Fus.tail

Cameras

Vertical Station

Type  Lens
K-37  12"
K-22A  12"
K-17C  24"
Camera station is located in the lower aft portion of the fuselage aft of the bomb bay.

Electronics

UHF Command ........ AN/ARC-27

Omni-Dir RC ......... AN/ARN-14

Bombing-Nav, Radar .. AN/MR-7A

Fire Control System .. AN/AdP-74 or AN/AdP-10

Rendezvous Equip ... AN/APE-76 or AN/APE-60

Marko Beacon ........ AN/ARN-12

Emergency Keyser .. AN/ABT-26

Chaff Dispenser .... AN/ALE-1

Note: Continued on pg 6, (note c)
## Loading and Performance—Typical Mission

<table>
<thead>
<tr>
<th>CONDITIONS</th>
<th>BASIC</th>
<th>DESIGN</th>
<th>CRUISE</th>
<th>FERRY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MISSION</td>
<td>BOMB LOAD</td>
<td>CEILING</td>
<td>RANGE</td>
</tr>
<tr>
<td><strong>TAKE-OFF WEIGHT</strong></td>
<td>229,958</td>
<td>230,000</td>
<td>229,958</td>
<td>215,113</td>
</tr>
<tr>
<td>Fuel at 6,5 lb/gal (grade JP-4)</td>
<td>117,000</td>
<td>113,030</td>
<td>117,000</td>
<td>117,000</td>
</tr>
<tr>
<td>Payload (Bombs)</td>
<td>845</td>
<td>845</td>
<td>845</td>
<td>None</td>
</tr>
<tr>
<td>Payload (Chaff)</td>
<td>10,000</td>
<td>10,000</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Wing loading</td>
<td>149.6</td>
<td>132.4</td>
<td>149.6</td>
<td>124.5</td>
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<tr>
<td>Stall speed (power off)</td>
<td>166.1</td>
<td>167.6</td>
<td>166.1</td>
<td>162.1</td>
</tr>
<tr>
<td>Take-off ground run at SL</td>
<td>10,400</td>
<td>10,500</td>
<td>10,400</td>
<td>10,200</td>
</tr>
<tr>
<td>Take-off ground run with ATO</td>
<td>7350</td>
<td>7700</td>
<td>7350</td>
<td>6350</td>
</tr>
<tr>
<td>Take-off to clear 30 fts</td>
<td>12,000</td>
<td>12,550</td>
<td>12,000</td>
<td>10,750</td>
</tr>
<tr>
<td>Take-off to clear 50 fts with ATO</td>
<td>8800</td>
<td>9200</td>
<td>8800</td>
<td>7750</td>
</tr>
<tr>
<td>Rate of climb at SL</td>
<td>1850</td>
<td>1850</td>
<td>1850</td>
<td>1550</td>
</tr>
<tr>
<td>Rate of climb at SL (one engine out)</td>
<td>1670</td>
<td>1670</td>
<td>1670</td>
<td>1720</td>
</tr>
<tr>
<td>Time: SL to 20,000 fts</td>
<td>11.2</td>
<td>11.4</td>
<td>11.2</td>
<td>10.3</td>
</tr>
<tr>
<td>Time: SL to Cruise Alt</td>
<td>19.4</td>
<td>19.6</td>
<td>22.4</td>
<td>18.8</td>
</tr>
<tr>
<td>Service ceiling (100 fps)</td>
<td>29,500</td>
<td>29,900</td>
<td>29,500</td>
<td>30,400</td>
</tr>
<tr>
<td>Service ceiling (one engine out)</td>
<td>25,000</td>
<td>24,500</td>
<td>25,000</td>
<td>26,000</td>
</tr>
<tr>
<td><strong>COMBAT RANGE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n., mi.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cruise speed</td>
<td>435</td>
<td>436</td>
<td>475</td>
<td>475</td>
</tr>
<tr>
<td>Initial cruising altitude</td>
<td>27,000</td>
<td>28,700</td>
<td>29,000</td>
<td>28,350</td>
</tr>
<tr>
<td>Target speed</td>
<td>466</td>
<td>466</td>
<td>475</td>
<td>475</td>
</tr>
<tr>
<td>Target altitude</td>
<td>37,350</td>
<td>35,550</td>
<td>37,300</td>
<td></td>
</tr>
<tr>
<td>Final cruising altitude</td>
<td>43,500</td>
<td>43,550</td>
<td>46,750</td>
<td>43,500</td>
</tr>
<tr>
<td>Total mission time</td>
<td>9.42</td>
<td>8.94</td>
<td>7.49</td>
<td>10.02</td>
</tr>
</tbody>
</table>

| **COMBAT WEIGHT** | | | | |
| (lb) | 133,330 | 130,485 | 133,330 | 93,990 |
| Combat altitude | 37,350 | 35,550 | 37,300 | 43,500 |
| Combat speed | 483 | 488 | 483 | 486 |
| Combat climb | 850 | 1050 | 850 | 1000 |
| Combat ceiling (600 fps) | 39,300 | 39,600 | 39,250 | 46,500 |
| Service ceiling (100 fps) | 40,500 | 40,900 | 40,450 | 47,000 |
| Service ceiling (one engine out) | 38,500 | 39,100 | 38,250 | 46,000 |
| Max rate of climb at SL | 4350 | 4450 | 4350 | 6100 |
| Max speed at 16,300 fts | 528 | 528 | 528 | 528 |
| Basic speed at 35,000 fts | 494 | 494 | 494 | 494 |
| **LANDING WEIGHT** | | | | |
| (lb) | 93,990 | 93,785 | 93,990 | 93,990 |
| Ground roll at SL | 4600 | 4600 | 4600 | 4600 |
| Ground roll (auxiliary brake) | 5500 | 5500 | 5500 | 5500 |
| Total from 30 ft | 3500 | 3500 | 3500 | 3500 |

**NOTES:**
- Take-off power
- Maximum power
- Normal power
- Detailed descriptions of RADIUS and RANGE missions given on page 6.
- Volume limited, includes ATO and water-alcohol.
- Values quoted are for T.O. weight less 7190 lb ATO and 5300 lb water and alcohol.
- Brake chocks placed at touchdown.

**PERFORMANCE BASIS:**
- Data Source: Flight test
- Performance is based on powers shown on page 6.

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<table>
<thead>
<tr>
<th>B-47E IV</th>
<th>U N C L A S S I F I E D</th>
</tr>
</thead>
</table>
Take-Off

- **SEA LEVEL**
- **CLEAR 50 FT**
- **GROUND RUN**

Climb

- **MAX POWER**
- **NORMAL POWER**

- **133,030 LB CLEAN**
- **213,540 LB EXT. TANKS**

Speed

- **MAX POWER**
- **NORMAL POWER**
- **PLACARD SPEED**

- **133,030 LB CLEAN**
- **213,540 LB EXT. TANKS**
- **M * 0.86**

Radius

- **NO BOMB LOAD**
- **NO CHAFF**
- **T.O. GW 215,113 LB 117,000 LB FUEL**

- **10,000 LB BOMB**
- **845 LB CHAFF**
- **T.O. GW 225,958 LB 117,000 LB FUEL**

GROSS WEIGHT (1000 lb.)

- 140
- 160
- 180
- 200
- 220
- 240

DISTANCE (1000 ft.)

- 0
- 4
- 8
- 12
- 16

ALTITUDE (1000 ft.)

- 0
- 10
- 20
- 30
- 40
- 50

RATE OF CLimb FT/MIN

- 0
- 1000
- 2000
- 3000
- 4000
- 5000

ALTITUDE (1000 ft.)

- 10
- 20
- 30
- 40
- 50

KNOTS

- 420
- 440
- 460
- 480
- 500
- 520
- 540

UNCLASSIFIED
FORMULA: RADIUS MISSIONS I & II

Take-off and climb on course to initial cruising altitude. Cruise out at long range speeds and altitudes, dropping external tanks when empty. Climb to cruise ceiling and conduct a 15 minute level-flight bomb run at normal rated thrust. Drop bomb load and chaff and conduct 2 minutes evasive action and 8 minutes escape at normal rated thrust. Return to base at long range speeds and altitudes. Range-free allowances are fuel for 5 minutes at normal rated thrust at sea level for take-off allowance, 2 minutes at normal rated thrust at combat altitude for evasive action, and 30 minutes at maximum endurance airspeeds at sea level plus 5% of initial fuel load for landing reserve.

FORMULA: RADIUS MISSION III

Take-off and climb on course to initial cruising altitude. Cruise out at normal rated thrust at cruise ceiling, dropping external tanks when empty. Conduct a 15 minute level flight bomb run, drop bomb load and chaff, and conduct 2 minutes evasive action at normal rated thrust. Return to base at normal rated thrust at cruise ceiling. Range-free allowances are as specified for Radius Missions I and II.

FORMULA: RANGE MISSION IV

Take-off and climb on course to initial cruising altitude. Cruise out at long range speeds and altitudes, dropping external tanks when empty. Land at remote base with only reserve fuel remaining. Range-free allowances are fuel for 5 minutes at normal rated thrust at sea level for take-off allowance and 30 minutes at maximum endurance airspeeds at sea level plus 5% of initial fuel load for landing reserve.

GENERAL DATA

(a) Thrust values shown on page 3 are engine manufacturer’s guaranteed rating. Thrust values used in performance calculations are as follows:

<table>
<thead>
<tr>
<th></th>
<th>(d) 347-GE-25 &amp; -25A</th>
</tr>
</thead>
<tbody>
<tr>
<td>S, L, Static</td>
<td>LB RPM MIN</td>
</tr>
<tr>
<td>T, O:</td>
<td>7200 7950 5</td>
</tr>
<tr>
<td>Max:</td>
<td>5640 7800 30</td>
</tr>
<tr>
<td>Nor:</td>
<td>5270 7630 Cont</td>
</tr>
</tbody>
</table>

(b) For detail planning, refer to Technical Order 1B-47-E-1 and latest applicable technical orders.

(c) The following loadings reflect the capabilities of the B-47E-1V (Heavyweight) airplane utilizing general purpose bombs:

1. The Short Bomb Bay Hi-Density Kits are adaptable on all aircraft.
2. The Short Bomb Bay Lo-Density Kit can be utilized only in airplanes 617 thru 736; airplanes 1 thru 616 have provisions for this kit but must be modified to accept it.
3. The displacement rack must be utilized in carrying maximum complement of (1) 3500 lb or the (30) 1500 lb bottles ATO. (Manufactured by Phillips Petroleum).
4. Electronics continued on page 3:
   - HF Liaison AN/ARC-21, AN/ARC-65
   - Warning Radar AN/APS-34
   - DP Group AN/ARA-20
   - Gun Laying Radar AN/APS-42
   - ECM (2) Various combinations of AN/ALT-6, AN/ALT-6A, AN/ALT-7 and AN/ALT-8
   - TACAN AN/ARC-21

PERFORMANCE REFERENCE:


REVISION BASIS:

To reflect current characteristics and performance data.