Standard Aircraft Characteristics

B-47E
STRATOJET
Boeing

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

18 DEC 53

SIX J47-GE-25
GENERAL ELECTRIC

B-47E
(RANGE EXTENSION)

CONFIDENTIAL

53 tc 12001
POWER PLANT

No. & Model: (6) J47-GE-25  

diameter: 30.5"  
Weight (dry): 2707 lb  
Tail Pipe: Fixed Area Augmentation  
AT0: Water/Alcohol  

ENGINE RATINGS

S.L. Static  
Max: (net) 6970 - 7950  
Mil: 5670 - 7800  
Nor: 5320 - 7630  

AT0  
Thrust (lb) 33,000  
Duration (sec) 14  

BOMBS

No. 1  
Type: Special Weapon  
Class: 10,000  
Note: For additional bomb loadings see note (f) page 6.

GUNS

No. 2  
Type: M24A1  
Class: .20mm  
Loc: 350, 500, 760

CAMERAS

Vertical Station  
No. 1  
Type: K-38  
Lens: 36"  
for: On the following may be substituted:
1. K-38  
2. K-24  
3. K-24  
Camera station is located in the lower aft portion of the fuselage aft of the bomb bay.

MISSION AND DESCRIPTION

Navy Equivalent: None  
The principal mission of the B-47E is the destruction by bombs of land or naval materiel objectives.  
The normal crew consists of pilot, co-pilot and observer. The observer's duties are navigation, bombaging and operating of radar equipment.  
Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, pressurization, NESA glass-de-icing for the pilot's windsheild, de-frosting of windsheild, nose window and other transparent sections by recirculated cabin air, thermal anti-icing for wings and empennage and hydraulic boost on all control surfaces. Crew ejection seats are provided for in-flight escape. The pilot and co-pilot are ejected upward and the observer downward.  
The water/alcohol injection system utilizes a total tank capacity of 600 gallons which is divided into six individual bladder-type tanks, three each located in the inboard sections of the right and left wings. Solid propellant rockets are installed externally for assist take-off with a droppable rack.  
A two-gun turret incorporating a radar computer at the co-pilot's station is installed. A rotatable seat allows the co-pilot to face aft while functioning as the A-5 Fire Control System operator.  
Other features are single-point and air refueling, an approach chute to increase drag, drogue chute for decreasing landing roll distance and an anti-skid braking device.  
The B-47E (Range Extension) airplane differs from the Standard B-47E by the strengthening of the landing gear to permit heavier take-off weights.

DEVELOPMENT

Data is shown for the test article (713th B-47E); the Range Extension modification is effective on the 521st B-47E and subsequent.  
Estimated completion date for the first (B-47E) (Range Extension) .... Jun 54

WEIGHTS

Loading  
Empty  78,500  
Basic  80,000  
Design  125,000  
Combat  125,000  
Max T.O.  120,000  
Max In-Flight  120,000  
Max Land  118,000  

FUEL

Location No. Tanks Gal  
Fwd, Main* 1 2936  
Fwd, Aux* 1 1016  
Center Main* 1 2857  
Bomb Bay 1 3232  
Aft Main* 1 3426  
Wing, Drop 2 3316  
AT0 Tank 1 1248 Total 78,017  
Grade .5 .8 (to) 56.4  
Specification MIL-F-5624A  
Wing Panel .0 .5 (to) 1005  
Specification MIL-D-6081A  
Wg, inb 6 600  
Note: Large AT0 tank installed in forward main tank  
Self-Sealing except for 3 cells in forward main tank

ELECTRONICS

VHF Command  AN/ARC-27  
Omni-Direc. Recvr.  AN/ARN-14  
Bomber-Nav. Radar  K-4A  
Fire Control System  A-5  
Rendezvous Equip.  AN/APN-76  
Interphone  AN/AIC-10  
IFF  AN/APX-6  
Glide Path Recvr.  AN/ARN-18  
Radio Compass  AN/ARA-6A  
ECM  AN/APT-5A  
Marker Beacon  AN/ARN-12  
Emergency Keyer  AN/ARE-26  
Chaff Dispenser
### Loading and Performance—Typical Mission

<table>
<thead>
<tr>
<th>Conditions</th>
<th>BASIC MISSION</th>
<th>FERRY RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Take-off Weight</strong></td>
<td>6 (lb) 200,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Fuel at 6.5 lb/gal (grade JP-4)</td>
<td></td>
<td>106,400</td>
</tr>
<tr>
<td>Payload (Bombs)</td>
<td>(lb) 10,000</td>
<td>None</td>
</tr>
<tr>
<td>Payload (Chaff)</td>
<td>(lb) 720</td>
<td>None</td>
</tr>
<tr>
<td>Wing loading (lb/ft²)</td>
<td>133.2</td>
<td>133.2</td>
</tr>
<tr>
<td>Stall speed (power off)</td>
<td>(kn) 140</td>
<td>140</td>
</tr>
<tr>
<td>Take-off ground run at SL</td>
<td>(ft) 8050</td>
<td>8050</td>
</tr>
<tr>
<td>Take-off ground run with ATO</td>
<td>(ft) 5650</td>
<td>5650</td>
</tr>
<tr>
<td>Take-off to clear 50 ft</td>
<td>(ft) 9450</td>
<td>9450</td>
</tr>
<tr>
<td>Take-off to clear 50 ft with ATO</td>
<td>(ft) 7100</td>
<td>7100</td>
</tr>
<tr>
<td>Rate of climb at SL</td>
<td>(ft/min) 2110</td>
<td>2110</td>
</tr>
<tr>
<td>Rate of climb at SL (one eng. out)</td>
<td>(ft/min) 1660</td>
<td>1660</td>
</tr>
<tr>
<td>Time: SL to 20,000 ft</td>
<td>(min) 11.6</td>
<td>11.6</td>
</tr>
<tr>
<td>Time: SL to 30,000 ft</td>
<td>(min) 21.0</td>
<td>21.0</td>
</tr>
<tr>
<td>Service ceiling (100 fps)</td>
<td>(ft) 31,500</td>
<td>31,500</td>
</tr>
<tr>
<td>Service ceiling (one engine out)</td>
<td>(ft) 28,200</td>
<td>28,200</td>
</tr>
<tr>
<td><strong>Combat Range</strong></td>
<td>(n, mi) 4855</td>
<td></td>
</tr>
<tr>
<td><strong>Combat Radius</strong></td>
<td>(n, mi) 1780</td>
<td></td>
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<tr>
<td>Average cruise speed</td>
<td>(kn) 433</td>
<td>433</td>
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<tr>
<td>Initial cruising altitude</td>
<td>(ft) 30,100</td>
<td>30,100</td>
</tr>
<tr>
<td>Target speed</td>
<td>(kn) 466</td>
<td></td>
</tr>
<tr>
<td>Target altitude</td>
<td>(ft) 38,600</td>
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<tr>
<td>Final cruising altitude</td>
<td>(ft) 44,100</td>
<td>44,000</td>
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<tr>
<td>Total mission time</td>
<td>(hr) 8.30</td>
<td>9.33</td>
</tr>
</tbody>
</table>

#### Combat Weight

| (lb) 123,080 | 91,550 |
| (ft) 38,600 | 44,000 |
| (kn) 469 | 469 |
| (kn) 960 | 1050 |
| (ft) 42,800 | 47,200 |
| (ft) 39,300 | 45,400 |
| (kn) 474 | 6320 |
| (kn) 497 | 497 |
| (kn) 469 | 469 |

#### Landing Weight

| (lbs) 91,015 | 91,550 |
| (ft) 4450 | 4450 |
| (ft) 2550 | 2550 |
| (ft) 5350 | 5350 |
| (ft) 3450 | 3450 |

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**Notes:**

1. T.O. power
2. Max power
3. Normal power
4. Detailed descriptions of Radius & Range missions given on page 6
5. With braking parachute
6. Values quoted are for T.O. weight
7. Performance Basis: (a) Data source: Flight Test
   (b) Performance is based on powers shown on page 6.
NOTES

FORMULA: RADIUS MISSION I

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speeds increasing altitude with decreasing airplane weight, external tanks [if carried] are dropped when empty. Climb so as to reach cruise ceiling 15 minutes from target. Run into target at normal power, drop bombs and chaff, conduct 2 minutes evasive action and 5 minutes escape from target at normal power. Cruise back to home base at long range speeds increasing altitude with decreasing airplane weight. Range free allowances include 5 minutes normal power fuel consumption for starting engines and take-off, 2 minutes normal power fuel consumption at combat altitude for evasive action and 30 minutes of maximum endurance [four engines] 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 speeds increasing altitude with decreasing airplane weight until all usable fuel is consumed, external tanks are dropped when empty. Range free allowances include 5 minutes normal power fuel consumption for starting engines and take-off and 30 minutes of maximum endurance [four engines] fuel consumption at sea level plus 5% of initial fuel load for landing reserve.

GENERAL DATA:

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

(6)J47-GE-25

<table>
<thead>
<tr>
<th></th>
<th>S. L. Static</th>
<th>T. O:</th>
<th>Max:</th>
<th>Nor:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>LB</td>
<td>RPM</td>
<td></td>
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<tr>
<td></td>
<td>6770</td>
<td>7950</td>
<td>5460</td>
<td>5270</td>
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</tbody>
</table>

1. The Short Bomb Bay Hi-Density Kits and Long Bomb Bay Hi-Density Kits are adaptable and effective on the 617th (B-47E) and subsequent. (500 kits each were procured)

2. The Short Bomb Bay Lo-Density Kit can be utilized only in airplanes 617 thru 730, airplanes 1 thru 616 have provisions for this kit but must be modified to accept it.

PERFORMANCE REFERENCE:


REVISION BASIS: Initial Issue.