Standard Aircraft Characteristics

RB-47B
STRATOJET
Boeing

SIX J47-GE-11
GENERAL ELECTRIC

BY AUTHORITY OF
COMMANDING GENERAL
WRIGHT AIR DEVELOPMENT CENTER
U.S. AIR FORCE

4 JANUARY 1952
POWER PLANT
No. & Model ........ (6)XJ47-GE-25
Mfr............... General Electric
Engine Spec No. ....... F-597
Type................ Axial Flow
Length ................ 148'
Diameter ............. 40, 5'
Weight(dry) ............ 2707 lb
Tail Pipe ................ Fixed Area
ATO
No. & Model ........... (18) J5S-1000
Mfr .................. Aerojet
Weight(loaded) .......... 136 lb ea

ENGINE RATINGS
S.L. Static LB - RPM - MIN ........ 25
Max: *7000 - 7500 - 5
Mfl: 8000 - 7500 - 5
Norr: 5700 - 7800 - 30
Wet
ATO
Thrust(lb) ........... 18x1000
Duration(sec) ........... 15

DIMENSIONS
Wing
Span ................... 116, 0'
Incidence ................ 2°45'
Dihedral ................. 0°
Sweepback(LE) .......... 36°37'
Length ................... 109, 5'
Height .................... 27, 9'
Tread(outrigger) ....... 44, 3'

GUNS
No. Cal Rds ea Location
2 20mm 350 Fus, tail

BOMBS
Flash bombs: .......... 10xT-9E8
and
Photoflash cartridges ... 200xM112

Mission and Description
Navy Equivalent: None
Mfr's Model: 450-126-29

The RB-47B is a high speed, medium range, jet reconnaissance aircraft whose principal mission is the photographic reconnaissance of land and naval material objectives.

The normal crew consists of a pilot, co-pilot and photo-navigator. Features incorporated for improved crew comfort and efficiency include automatic heating, ventilation, pressurization, NESA glass de-icing for the pilot's windscreen, rain repellent for windshields in lieu of windshield wipers and hydraulic boost on all control surfaces. Crew ejection seats are provided to facilitate in-flight escape.

The wing and empennage utilize thermal anti-icing. Single point ground fueling and air-to-air refueling is provided via CO2 purging for fuel tanks.

A two gun tail turret, controlled by radar sight at the co-pilot's station, is installed. An A-5 Fire Control System is utilized. A rotatable seat allows the co-pilot to face aft while functioning as fire control operator.

Solid fuel rockets for assisted take-off, a braking parachute for decreasing landing roll distance and an anti-skid device for braking are provided. The bicycle type landing gear is electrically operated. There are provisions for a periscopic sextant.

Major differences from B-47B are deletion of bomb carrying provisions and the incorporation of four camera stations.

Development
Design initiated: ........ Mar 51
First flight: ................ 1 Jan 51(est.)
First delivery: .... Mar 51(est.)

CAMERAS
FORWARD OBLIQUE STATION
(1) K-17C, 6" or 12" lens
or(1) K-22A, 12" or 24" lens
or(1) K-38, 24" lens
(2) A-10, Motion Picture

TRI-METROGON STATION
(3) S-14, 90mm stereo strip
or(3) S-14, 6" lens
or(3) K-46, 7" lens
or(3) T-11, 8" lens

VERTICAL STATION
(1) K-17C, 6", 12" or 24" lens
or(1) K-22A, 12", 24" or 24" lens
or(1) K-38, 24" lens
(1) T-11, 6" lens
or(1) K-38, 24" or 36" lens

SPLIT VERTICAL STATION
(2) K-38, 24" or 36" lens

ELECTRONICS
VHF Command ........ AN/ARC-27
Liaison ................ AN/ARC-31
Interphone .............. USAF Combat
Radio Compass .......... AN/ARC-6
Marker Beacon ........ AN/ARC-12
Glode Path ............ AN/ARC-18
Fire Control .......... A-5
Loran .................. AN/APN-9A
Omni-Direct, Recv'r ... AN/ARC-14
Rendezvous Radar ...... AN/APN-76
ECM(3) ................. AN/APT-3A
IFF ..................... AN/APX-6
Bombing Nav, Radar ... AN/APQ-31A
*Space and structure provisions only
## Loading and Performance—Typical Mission

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Basic Mission</th>
<th>Trainer Radius</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Take-off Weight</strong></td>
<td>180,000</td>
<td>163,000</td>
</tr>
<tr>
<td>Fuel at 6.5 lb/gal (grade JP-3)</td>
<td>92,800</td>
<td>72,500</td>
</tr>
<tr>
<td>Military load</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Wing loading</td>
<td>126.1</td>
<td>114.1</td>
</tr>
<tr>
<td>Stall speed (power off, landing config.)</td>
<td>142</td>
<td>133</td>
</tr>
<tr>
<td>Take-off ground run at SL</td>
<td>6820</td>
<td>5200</td>
</tr>
<tr>
<td>Take-off ground run with ATO</td>
<td>5620</td>
<td></td>
</tr>
<tr>
<td>Take-off to clear 50 ft</td>
<td>8000</td>
<td>6400</td>
</tr>
<tr>
<td>Take-off to clear 50 ft with ATO</td>
<td>6840</td>
<td></td>
</tr>
<tr>
<td>Rate of climb at SL</td>
<td>3800</td>
<td>4340</td>
</tr>
<tr>
<td>Time: SL to 25,000 ft</td>
<td>9.6</td>
<td>8.2</td>
</tr>
<tr>
<td>Time: SL to 31,900 ft</td>
<td>16.0</td>
<td>16.4</td>
</tr>
<tr>
<td>Service ceiling (100 fpm)</td>
<td>34,100</td>
<td>37,000</td>
</tr>
<tr>
<td>Service ceiling (one engine out)</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td><strong>Combat Range</strong></td>
<td>3725</td>
<td></td>
</tr>
<tr>
<td>Average speed</td>
<td>428</td>
<td></td>
</tr>
<tr>
<td>Initial cruising altitude</td>
<td>31,900</td>
<td></td>
</tr>
<tr>
<td>Final cruising altitude</td>
<td>43,700</td>
<td></td>
</tr>
<tr>
<td>Total mission time</td>
<td>8.7</td>
<td></td>
</tr>
<tr>
<td><strong>Combat Radius</strong></td>
<td>1835</td>
<td>1500</td>
</tr>
<tr>
<td>Average speed</td>
<td>428</td>
<td>428</td>
</tr>
<tr>
<td>Initial cruising altitude</td>
<td>31,900</td>
<td>35,000</td>
</tr>
<tr>
<td>Bombing altitude</td>
<td>39,900</td>
<td>41,600</td>
</tr>
<tr>
<td>Bomb run speed</td>
<td>464</td>
<td>465</td>
</tr>
<tr>
<td>Final cruising altitude</td>
<td>43,700</td>
<td>44,300</td>
</tr>
<tr>
<td>Total mission time</td>
<td>8.7</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>Combat Weight</strong></td>
<td>130,100</td>
<td>120,400</td>
</tr>
<tr>
<td>Combat altitude</td>
<td>35,000</td>
<td>41,600</td>
</tr>
<tr>
<td>Combat speed</td>
<td>490</td>
<td>464</td>
</tr>
<tr>
<td>Combat climb (500 fpm)</td>
<td>1350</td>
<td>500</td>
</tr>
<tr>
<td>Service ceiling (100 fpm)</td>
<td>39,900</td>
<td>41,600</td>
</tr>
<tr>
<td>Service ceiling (one engine out)</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>Max rate of climb at SL</td>
<td>5750</td>
<td>6180</td>
</tr>
<tr>
<td>Max speed at 11,000 ft</td>
<td>539</td>
<td>539</td>
</tr>
<tr>
<td><strong>Landing Weight</strong></td>
<td>96,950</td>
<td></td>
</tr>
<tr>
<td>Ground roll at SL</td>
<td>N.A.</td>
<td></td>
</tr>
<tr>
<td>Ground roll (auxiliary brake)</td>
<td>5080</td>
<td></td>
</tr>
<tr>
<td>Total from 50 ft</td>
<td>N.A.</td>
<td></td>
</tr>
<tr>
<td>Total from 50 ft (auxiliary brake)</td>
<td>6380</td>
<td></td>
</tr>
</tbody>
</table>

### Notes
1. For Radius Mission if radius is shown.
2. Limited by structure.
3. With 32 foot ribbon braking parachute effective at touchdown, brakes applied at 40 knots.
4. Detailed descriptions of Radius and Range missions are given on page 6.
5. Based on flight test of B-47B (Data not substantiated by WADC).
NOTES

FORMULA: RADIUS MISSION I

Take-off, climb on course to 31,900 ft altitude at normal power and maximum rate of climb, cruise out at long range speeds increasing altitude with decreasing airplane weight, climb to target altitude at normal power, make normal power photographic run to target, take photographs, conduct normal power evasive action for 6 minutes, start cruise to home base arriving at 43,700 ft altitude. Range free allowances include 5 minutes normal power fuel consumption for starting engines and take-off, plus 6 minutes normal power evasive action and 10% of initial fuel for reserve.

FORMULA: RADIUS MISSION II

Same as the outbound leg of the basic radius formula continued without taking photographs until 90% of the initial fuel has been used at 46,000 ft altitude, leaving 10% fuel reserve for combat, evasive action, landing reserve, or other considerations for which no distance credit is allowed.

FORMULA: RADIUS MISSION III

Same as the basic radius formula except no assist is used for take-off and no ammunition is carried. Take-off weight is limited to 163,000 lb to take-off in 6400 ft ground roll on an Air Force hot day. Initial altitude at start of cruise out is 35,000 ft and final altitude over the home base is 44,300 ft. Range free allowances are the same as for the basic radius formula.

GENERAL DATA:

(a) Drag data from flight tests of March 1950 (ref. Boeing Document D-10704).

(b) Normal technique for take-off with ATO - 15 second duration rockets fired 10 seconds before take-off. Take-off distances based upon estimated water injection augmentation of 17%.

(c) Landing distances are based on 6 engines at 50% RPM with 4 outboards cut at touchdown. Braking parachute effective at touchdown - brakes applied at 40 knots.

(d) Design landing weight 125,000 lb computed on basis of 12 ft/sec. ultimate rate of descent with 1 G wing lift. Maximum landing weight 180,000 lb based on approximately 8 ft/sec. ultimate rate of descent with 1 G wing lift.

(e) Performance shown herein is based on the J47-GE-23 engine ratings as shown below:

<table>
<thead>
<tr>
<th>J47-GE-23</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. L. Static LB</td>
</tr>
<tr>
<td>Max: 5910</td>
</tr>
<tr>
<td>Mil: 5620</td>
</tr>
<tr>
<td>Nor: 5270</td>
</tr>
</tbody>
</table>

CAMERAS

SPLIT VERTICAL CAMERA STATION: The split vertical camera station shall be made to accommodate two Type K-38 cameras with 24 inch or 36 inch lens with Type A-8B magazines. This station shall also be used for the oblique cameras of the multi-camera station comprised for three fixed K-38 cameras with 24 inch or 36 inch lens. The vertical station shall accommodate the third camera of the multiple arrangement.

VERTICAL STATION: The vertical camera station shall be made to accommodate optionally the following cameras:

1. K-37 camera with 36 in, lens and an A-8B magazine
2. K-17C camera with 6 in, lens and an A-9A or A-28 magazine
3. K-17C camera with 12 in, lens and an A-9A or A-28 magazine
4. K-17C camera with 24 in, lens and an A-9A or A-28 magazine
5. K-22A camera with 12 in, lens and an A-9A or A-28 magazine
6. K-22A camera with 24 in, lens and an A-9A or A-28 magazine
7. K-37 camera with 12 in, lens and an A-9A or A-28 magazine
8. T-11 camera with 6 in, lens
9. K-37 camera with 12 in, lens
10. K-38 camera with 24 in, lens or 36 in. lens

TRI-CAMERA STATION: The tri-camera station shall be made to accommodate optionally the following cameras:

1. S-14 cameras with 99mm stereo lens
2. S-14 cameras with 6 inch single lens
3. K-46 cameras with 7 inch lens
4. T-11 cameras with 6 inch lens

FORWARD OBLIQUE STATION: The forward oblique camera station shall be made to accommodate optionally the following cameras:

1. K-17C camera with 6 inch lens and an A-9A magazine
2. K-17C camera with 12 inch lens and an A-9A magazine
3. K-22A camera with 12 inch lens and an A-9A magazine
4. K-22A camera with 24 inch lens and an A-9A magazine
5. K-38 camera with 24 inch lens and an A-9A magazine
6. A-10 motion picture camera with 29mm, 50mm or 250mm lens cones and 1000 ft film magazine.

AIR FORCE DATA:

Ontario 45-433

4 JANUARY 1952