Standard Aircraft Characteristics

RB-47 K
STRATOJET
Boeing

SIX J47-GE-25
GENERAL ELECTRIC

1 APR 59

GREEN BOOK
APR 15 1959
**POWER PLANT**

- **Nr & Model**: 6(J)47-GE-25
- **Mfr**: General Electric
- **Engine Spec Nr**: E-597
- **Type**: Axial Flow
- **Length**: 148
- **Diameter**: 39.5
- **Weight (dry)**: 2707 lb
- **Tall Pipe**: Fixed Area Augmentation, Water/Alcohol ATO
- **Nr & Model**: *(33)* 14AS1000
- **Mfr**: Aerojet
- **Weight (loaded)**: 200 lb ea or
- **Nr & Model**: *(19)* 15KS1000
- **Mfr**: Aerojet
- **Weight (loaded)**: 131 lb ea

*See note h, page 6*

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**ENGINE RATINGS**

- **S.L. Static LB - RPM - MIN**
  - **Max**: *7980 - 7950 - 5
  - **5970 - 7950 - 5
  - **Mil**: 5670 - 7800 - 30
  - **Nor**: 5320 - 7630 - Cont

*Note: Wet water flow of 650 lb/m

**THRUST (lb)**

- **At Thrust (lb)**: 33,000
- **Duration (sec)**: 14

**THRUST (lb)**

- **Or**: 19,000
- **Duration (sec)**: 15

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**DIMENSIONS**

- **Wing Span**: 116.0
- **Incidence**: 2.245
- **Dihedral**: 0.0
- **Sweptback (LE)**: 38.97
- **Length**: 109.8
- **Height**: 28.0
- **Tread (outrigger)**: 44.3

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**MISSION AND DESCRIPTION**

**Navy Equivalent**: None

**Mfr's Model**: The principal mission of the RB-47K airplane is the weather reconnaissance of actively defended enemy territory. The airplane is designed to attain long range, high speed and high tactical operating altitudes.

The normal crew consists of pilot, co-pilot and observer. The observer's duties are navigation and operation of photo and electronic equipment.

Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation and pressurization, NESA glass de-icing for the pilot's windshield, de-frosting of windshield, 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 section of the right and left wing. Solid propellant rockets are installed externally, for assist take-off, with droppable rack.

A two-gun tail 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, a drag chute for decreasing landing roll distance and an anti-skid braking device.

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**DEVELOPMENT**

The RB-47K differs from the RB-47E only by the equipment installed to accomplish the respective reconnaissance mission.

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**WEIGHTS**

- **Loading**: Lb
- **L.F.**:
  - **Empty**: 81,100(E)
  - **Basic**: 83,190(E)
  - **Max**: 130,900
  - **Max T.O.**: 190,000
  - **Max In-Flight**: 202,000
  - **Max Land**: 180,000

  *(E) Estimated
  * For Basic Mission
  † Limited by strength
  ‡ With external tanks

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**FUEL**

- **Location Nr Tanks**: Gas
- **Fwd*. Main**: 1
- **Fwd. Aux**: 1
- **Center. Main**: 1
- **Fwd. Bomb Bay**: 1
- **Art. Bomb Bay**: 1
- **Art. Main**: 1
- **Wg. Drop**: 2
- **ATO Tank**: 1

*Self-sealing Total 16,180

**Grade**: JP-4
**Specification**: MIL-L-5624A

*See note (f) page 6

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**OIL**

- **Wing**: 6 (tot) 56.4
- **Grd**: 1005
**Specification**: MIL-L-5681A
**WATER/ALCOHOL

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**ELECTRONICS**

- **VHF Command**: AN/ARC-27
- **Liaison**: AN/ARC-21
- **Interphone**: AN/AIC-10
- **Radio Compass**: AN/ARM-6
- **Marker Beacon**: AN/ARM-12
- **Glide Path**: AN/ARM-18
- **Fire Control**: A-5
- **Omni-Direct, Recvr**: AN/ARM-14
- **Rendezvous Radar**: AN/APN-76
- **ECM(2)**: AN/AEM-5A
- **IFF**: AN/AEM-8
- **Bombing Nav. Radar**: AN/AQ-31A
- **Chaff Dispenser**: AN/ALE-1
- **Warning Radar**: AN/APS-54

*See Notes (h & i) page 6
# 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>6 lb</td>
<td>200,000 lb</td>
</tr>
<tr>
<td>Fuel at 6.5 lb/gal (grade JP-4)</td>
<td>(lb)</td>
<td>103,080</td>
</tr>
<tr>
<td>Payload (Chaff)</td>
<td>(lb)</td>
<td>720</td>
</tr>
<tr>
<td>Wing loading (lb/sq ft)</td>
<td>133,2</td>
<td></td>
</tr>
<tr>
<td>Stall speed (power off) (kn)</td>
<td>157</td>
<td></td>
</tr>
<tr>
<td>Take-off ground run at SL (ft)</td>
<td>8050</td>
<td></td>
</tr>
<tr>
<td>Take-off ground run with ATO (ft)</td>
<td>5650</td>
<td></td>
</tr>
<tr>
<td>Take-off to clear 50 ft (ft)</td>
<td>9450</td>
<td></td>
</tr>
<tr>
<td>Take-off to clear 50 ft with ATO (ft)</td>
<td>7100</td>
<td></td>
</tr>
<tr>
<td>Rate of climb at SL (ft/min)</td>
<td>2110</td>
<td></td>
</tr>
<tr>
<td>Rate of climb at SL (one eng out) (ft/min)</td>
<td>1680</td>
<td></td>
</tr>
<tr>
<td>Time: SL to 20,000 ft (min)</td>
<td>11,6</td>
<td></td>
</tr>
<tr>
<td>Service ceiling (100 fpm) (ft)</td>
<td>31,500</td>
<td></td>
</tr>
<tr>
<td>Service ceiling (one eng out) (ft)</td>
<td>28,200</td>
<td></td>
</tr>
<tr>
<td>COMBAT RANGE (n mi)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>COMBAT RADIUS (n mi)</td>
<td>3935</td>
<td></td>
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<tr>
<td>Average cruise speed (kn)</td>
<td>433</td>
<td></td>
</tr>
<tr>
<td>Initial cruising altitude (ft)</td>
<td>30,100</td>
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</tr>
<tr>
<td>Target speed (kn)</td>
<td>465</td>
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</tr>
<tr>
<td>Target altitude (ft)</td>
<td>39,200</td>
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</tr>
<tr>
<td>Final cruising altitude (ft)</td>
<td>43,500</td>
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<tr>
<td>Total mission time (hr)</td>
<td>8.92</td>
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<thead>
<tr>
<th>CONDITIONS</th>
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<tbody>
<tr>
<td>COMBAT WEIGHT</td>
<td>6 lb</td>
<td>130,180 lb</td>
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<tr>
<td>Combat altitude (ft)</td>
<td>39,200</td>
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<tr>
<td>Combat speed (kn)</td>
<td>478</td>
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<tr>
<td>Combat climb (fpm)</td>
<td>600</td>
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<tr>
<td>Combat ceiling (500 fpm) (ft)</td>
<td>39,800</td>
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<tr>
<td>Service ceiling (100 fpm) (ft)</td>
<td>41,100</td>
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<tr>
<td>Service ceiling (one eng out) (ft)</td>
<td>38,500</td>
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</tr>
<tr>
<td>Max rate of climb at SL (ft/min)</td>
<td>4470</td>
<td></td>
</tr>
<tr>
<td>Max speed at 20,000 ft (kn)</td>
<td>497</td>
<td></td>
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<tr>
<td>Basic speed at 35,000 ft (kn)</td>
<td>405</td>
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</tbody>
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| LANDING WEIGHT | (lb) | 93,984 |
| Ground roll at SL (ft) | 4600 |
| Ground roll (auxiliary brake) (ft) | 2850 |
| Total from 50 ft (ft) | 5500 |
| Total from 50 ft (auxiliary brake) (ft) | 3550 |

### NOTES

1. T.O. power
2. Max power
3. Normal power
4. Detailed descriptions of Radius and Range missions are given on page 6
5. With 33,000 lb (ATO) thrust, (See note (h), page 6)
6. Includes 4610 lb ATO and 5300 lb water and alcohol
7. With braking parachute
8. Values quoted are for T.O. weight less ATO, water & alcohol
9. Placard Speed

**Performance Basis:**
- (a) Data source: Flight Test
- (b) Performance is based on power shown on page 6.
NOTES

FORMULA: RADIUS MISSION I

Take-off and climb on course to optimum cruise altitude at normal power. Cruise at long range speeds increasing altitude with decreasing airplane weight, external tanks are dropped when empty. Climb so as to reach cruise ceiling 15 minutes from target. Run into target at normal power, drop chaff, conduct 2 minutes evasive action and 8 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 20 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 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:

<table>
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<tr>
<th>J47-GE-25</th>
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<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>S, L, STATIC</td>
</tr>
<tr>
<td>T, O</td>
</tr>
<tr>
<td>Max</td>
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<tr>
<td>Nor</td>
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</tbody>
</table>

(b) For detailed planning refer to Technical Order Nr 1B-47(RE)-1 and latest applicable technical orders.

(c) Maximum landing weight 180,000 lb based on approximately 8 ft/sec ultimate rate of descent with 1G wing lift.

(d) All approved weight reduction items incorporated.

(e) Placards shown are for airplanes No. AF51-5258 thru 52-728. Higher placards applying to the remainder of the airplanes are as shown for B-47E Heavyweight.

(f) Aircraft with Serial No. AF-51-5258 thru AF-52-728 utilize 510 gal ATO tank. Aircraft with Serial No. AF-52-720 and subsequent utilize 1220 gal Aux Tank.

(g) A forward oblique camera station is not included in the RB-47K airplane. Two DR-2A cameras to record weather are mounted in the airplane, one is located in the nose and the other forward of the navigator. Weather reconnaissance equipment is installed in the aircraft to permit photographing and recording of meteorological data as necessary for conducting complete weather studies of areas through which the airplane operates.

(h) Weather equipment installed in the RB-47K. This equipment consists of an ANJ/FM-6 radiosonde dispenser, AN/AMR-1 radiosonde receptor, SCR-718-E radio altimeter, a cloud formation camera and a weather data monitoring camera which records the indications of various instruments located in the navigator's station. The radiosonde equipment is located in the aft radar compartment. All other equipment is located in the navigator's compartment and the nose of the airplane.

(i) Any combination of (2ea) of ALT-7, APT-8, APT-16A, ALT-6 or ALT-8.

(j) (33) 14AS1000 ATO bottles can be utilized with or without the displacement racks however the displacement rack must be utilized in carrying the max compliment of (19) 18KS1000.

PERFORMANCE REFERENCES:


REVISION BASIS:

Initial Issue