Standard Aircraft Characteristics

RB-47H
STRATOJET
Boeing

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

SIX J47-GE-25
GENERAL ELECTRIC

CONFIDENTIAL

25 SEP 56
Classification, cancelled
or changed to
AUTH: [Signature]

57WC-4984
Mission and Description

The tactical mission of this airplane is the detection and location of land and naval surface radar stations. These ECM crew stations shall be housed in a separate pressurized compartment located in the area formerly occupied by the short bomb bay. The airplane shall be designed to attain range, high speed, and tactical operating altitude in that order of preference.

The normal RB-47H crew consists of pilot, co-pilot, observer, and three ECM operators; one operator each for the high, medium, and low frequencies.

Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, and pressurization; new glass de-icing for the pilot’s windshield; defrosting 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, the observer and three ECM operators downward.

The AP-31A navigational system equipped with a 3-inch scope is used. 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, drag chute for decreasing landing roll distance, and an anti-skid braking device.

Development

Design Initiated: Aug 53
Mockup Inspection: Jan 54
CTCL: Mar 55
First Flight: Jun 55
First A/P Delivered: Jul 55

Electronics

VHF Command: AN/ARC-27
Interphone: AN/AIC-10
Omni-Direc. Recvr: AN/APU-31A
Nav Radar: AN/APN-9C
Fire Control System: A-5
Rendezvous Equip: AN/APN-9C
Radar Set: AN/APR-14
Radar Set: AN/APR-9B
Radar Set: AN/APR-8B
Radar Set: AN/ALA-6
Radar Set: AN/ADA-4
Analyzer: AN/ALA-5
Analyzer: AN/APA-74
Analyzer: AN/ARC-21X
Wire Recorder: AN/ANH-2
Static Discharger: AN/ASA-3
ECM: AN/ALT-7
ECM: AN/APT-9
ECM: AN/APT-16A
IFF: AN/APX-4A & 725
Radio Compass: AN/ARN-6
Glide Path Recvr: AN/ARN-18
Marker Beacon: AN/ARA-26
Emergency Keyer: AN/ARA-26
Warning Equip: AN/APS-54
Liaison Radio: AN/ARC-21X

Weights

Loading: L.B.
LB. F.
Empty: 83,642(E)
Basic: 94,565(E)
Design: 125,000
Combat: 136,955
Max T.O.: 125,900
Max Inflight: 121,000
Max Inflight: 198,000
Design Land: 125,000

Fuel

Location: Nr. Tanks: Gal
Fwd Main: 5
Fwd Aux: 2
Ctr Main: 3
Bomb Bay: 1
Aft Main: 2
Wing Drop: 2
Aft Aux: 1
Total: 18,370

Grade: JP-4
Specification: MIL-F-5624A
Self-sealing: Yes
Self-sealing except for three wing cells of forward main tank

Oil

Wing Panel: 6
Total 54.6
Grade: 1005
Specification: MIL-L-6081A

WATER/ALCOHOL

Wing Inboard: 6
600
## 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>(lb)</td>
<td>(lb)</td>
</tr>
<tr>
<td>Fuel at 6.5 lb/gal (Grade JP-3)</td>
<td>220,600</td>
<td>220,600</td>
</tr>
<tr>
<td>Payload</td>
<td>119,405</td>
<td>119,405</td>
</tr>
<tr>
<td>Payload</td>
<td>845</td>
<td>845</td>
</tr>
<tr>
<td>Wing Loading</td>
<td>151</td>
<td>151</td>
</tr>
<tr>
<td>Stall Speed (Power off)</td>
<td>162</td>
<td>162</td>
</tr>
<tr>
<td>Take-off Ground Run at Sea Level</td>
<td>10,100</td>
<td>10,100</td>
</tr>
<tr>
<td>Take-off Ground Run with ATO</td>
<td>6900</td>
<td>6900</td>
</tr>
<tr>
<td>Take-off to clear 50 feet</td>
<td>11,700</td>
<td>11,700</td>
</tr>
<tr>
<td>Take-off to clear 500 feet</td>
<td>8350</td>
<td>8350</td>
</tr>
<tr>
<td>Rate of Climb at Sea Level</td>
<td>1839</td>
<td>1839</td>
</tr>
<tr>
<td>Rate of Climb at Sea Level (one engine out)</td>
<td>1432</td>
<td>1432</td>
</tr>
<tr>
<td>Time - Sea level to 20,000 ft</td>
<td>15.5</td>
<td>15.5</td>
</tr>
<tr>
<td>Time - Sea level to 27,600 ft (service ceiling)</td>
<td>3.28</td>
<td>3.28</td>
</tr>
<tr>
<td>Service Ceiling (100 ft/min)</td>
<td>27,600</td>
<td>27,600</td>
</tr>
<tr>
<td>Service Ceiling (one engine out)</td>
<td>21,100</td>
<td>21,100</td>
</tr>
<tr>
<td><strong>COMBAT RANGE</strong></td>
<td>(n m)</td>
<td>(n m)</td>
</tr>
<tr>
<td>Average Speed</td>
<td>425</td>
<td>-</td>
</tr>
<tr>
<td>Initial Cruising Altitude</td>
<td>27,000</td>
<td>27,000</td>
</tr>
<tr>
<td>Target Speed</td>
<td>459</td>
<td>-</td>
</tr>
<tr>
<td>Final Cruising Altitude</td>
<td>42,000</td>
<td>41,750</td>
</tr>
<tr>
<td>Total Mission Time</td>
<td>9.43</td>
<td>9.39</td>
</tr>
<tr>
<td><strong>COMBAT WEIGHT</strong></td>
<td>(lb)</td>
<td>(lb)</td>
</tr>
<tr>
<td>Combat Altitude</td>
<td>37,350</td>
<td>41,800</td>
</tr>
<tr>
<td>Combat Speed</td>
<td>479</td>
<td>486</td>
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<tr>
<td>Combat Climb</td>
<td>533</td>
<td>1222</td>
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<tr>
<td>Combat Ceiling (500 fpm)</td>
<td>37,900</td>
<td>44,950</td>
</tr>
<tr>
<td>Service Ceiling (100 fpm)</td>
<td>38,950</td>
<td>46,000</td>
</tr>
<tr>
<td>Service Ceiling (one engine out)</td>
<td>36,000</td>
<td>43,150</td>
</tr>
<tr>
<td>Maximum Rate of Climb at Sea Level</td>
<td>3960</td>
<td>5670</td>
</tr>
<tr>
<td>Maximum Speed at Optimum Altitude</td>
<td>523/15,000</td>
<td>523/15,600</td>
</tr>
<tr>
<td>Basic Speed at 35,000 ft</td>
<td>(kn/ft)</td>
<td>(kn/ft)</td>
</tr>
<tr>
<td>LANDING WEIGHT</td>
<td>96,968</td>
<td>97,813</td>
</tr>
<tr>
<td>Ground Roll at Sea Level</td>
<td>4700</td>
<td>4750</td>
</tr>
<tr>
<td>Ground Roll (with auxiliary brake)</td>
<td>2750</td>
<td>2750</td>
</tr>
<tr>
<td>Total from 50 ft</td>
<td>5810</td>
<td>5860</td>
</tr>
<tr>
<td>Total from 50 ft (with auxiliary brake)</td>
<td>3860</td>
<td>3860</td>
</tr>
</tbody>
</table>

### Notes:
- **Take-off power with medium flow water augmentation**
- **Military power**
- **Normal power**
- **With 33 x 1000 pound external ATO**
- **Includes 2706 pound ATO propellant and 5300 lb water-alcohol. Includes ATO rack and bottles.**
- **Chaff - Dropped in target area**
- **Detailed descriptions of missions are given on page 6**
- **With 32-foot brake chute**
- **Based on take-off weight minus water-alcohol and ATO propellant**
- **Based on take-off weight minus water-alcohol and ATO propellant, rack, and bottles**
- **Based on take-off weight minus 5000 lb**

### PERFORMANCE BASIS:
(a) Data Source: Calculated data based on flight tests of RB-47H AF 53-4280 per WFT-824D, June 1956, and RB-47H AF 53-4280 per report AFJWTN-55-22, dated October 1955, "RB-47H Limited Phase IV Performance Evaluation."
NOTES

FORMULA: RADIUS MISSION I

Take-off, climb on course to optimum cruise altitude at normal rated power, and cruise out at long range speeds and altitudes. Release drop tanks when empty. Climb so as to reach cruise ceiling 15 minutes before reaching the target area. Run into the target area at normal rated power, release chaff, and take photos during run. Conduct 2-minute normal rated power evasive action and 6-minute normal rated power escape. Attain optimum cruise altitude during escape. Cruise to home base at optimum speeds and altitudes. Range free allowances are 5 minutes at normal rated power for starting engines and take-off, 2 minutes normal rated power evasive action, and a reserve of 5% of initial fuel plus 30 minutes endurance fuel at sea level.

FORMULA: FERRY RANGE MISSION II

Take-off, climb on course to optimum cruise altitude at normal rated power, and cruise out at long range speeds and altitudes. Release drop tanks when empty. Arrive over destination with 5% of initial fuel plus fuel for 30 minutes endurance at sea level, Range free allowances are 5 minutes at normal rated power for starting engines and take-off and reserve fuel. (Ferry range mission is computed for "combat ready" configuration and the gross weight includes 845 pounds chaff and 700 rounds of ammunition, neither of which is used in flight).

GENERAL NOTES

a. Performance is based on RB-47H flight test data per WFT 824B (June 1956) and AFFTC-TN-55-22, "RB-47H Limited Phase IV Performance Evaluation."

b. For detailed mission planning, refer to T.O. 1B-47(R)H-1.

c. Normal ATO techniques is for ATO rockets of 15-second duration, fired 10 seconds before take-off.

d. Displacement rack must be used in carrying (19) 15KS1000 ATO bottles. Airplane may also carry (30) 16NS1000 ATO bottles manufactured by Philips Petroleum.

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

<table>
<thead>
<tr>
<th></th>
<th>S, L, Static</th>
<th>Thrust (lb)</th>
<th>Rpm</th>
<th>Minutes Allowable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take-off</td>
<td>6770</td>
<td>7950</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Military</td>
<td>5640</td>
<td>7800</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>5270</td>
<td>7630</td>
<td>Cont</td>
<td></td>
</tr>
</tbody>
</table>

REVISION BASIS:

Initial issue

PERFORMANCE REFERENCE

(1) AFFTC-TN-55-22 "RB-47H Limited Phase IV Performance Evaluation."

(2) Boeing Document WD-14204 "RB-47H Drag Determination and Airspeed Calibration."