

Standard Aircraft Characteristics OF RB-47B SIX JA WELDBIRDS

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

STRATOJET

Boeing

SIX J47-GE-II

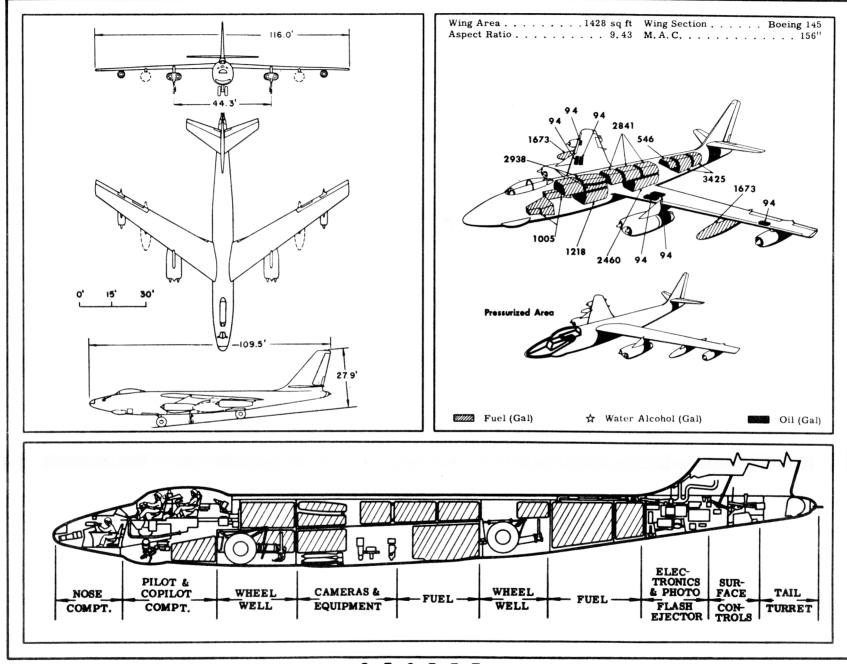
GENERAL ELECTRIC

4 JANUARY 1952

SECRET
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RB-47B



POWER PLANT

No. & Model (6)XJ47-GE-25
Mfr General Electric
Engine Spec No E-597
Type Axial Flow
Length 148"
Diameter 39.5"
Weight(dry) 2707 lb
Tail Pipe Fixed Area
· · · · · · · · · · · · · · · · · · ·

ATO

No. & Model.		(18)	15KS-1000
$Mfr \; . \; . \; . \; . \; . \; .$			Aerojet
Weight(loaded)			.136 lb ea

ENGINE RATINGS

S. L. Static	LB - RPM - MIN
Max:	*7000 - 7950 - 5
Mil:	6 000 - 7 950 - 5
Nor:	5700 - 7800 - 30
*Wet	
	ATO
Thrust(lb)	18x1000
Duration(sec)	15

DIMENSIONS

Wing
Span 116.0'
Incidence 2045'
Dihedral 0 ^O
Sweepback(LE) 36 ^o 37'
Length 109.5'
Height 27.9'
Tread(outrigger) 44.3

U G N

No.	Cal 20mm	Rds ea	Location Fus. tail
4	20mm	350	Fus, tail

M B

Flash bombs: and	. 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 materiel 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 windshield, rain repellant 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 as is 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 oper-

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:	r 51
First flight:	est.)
First delivery:	est.)

WEIGHTS

Loading	Lb L.F.
Empty	82, 946(E)
Operating	87,722(E) 92,200
Design	. 125,000 3.00
Combat	
Max T.O · ·	+180,000 2.00
	. *180,000 1.70
Max IFR	*.* 202,000 2.00
(E) Estimat	ed
* For Bas	sic Mission
+ Limited	by strength

Limited by strength See page 6, note (d)

** With external tanks

Max T.O. weight does not include ATO fuel or water/alcohol.

U E L

Location	No. Tanks	Gal
Wg, drop	2	3346
Fuselage*	5	10,755
Bomb bay, o	lrop 2	3678
	Total	17,779
Grade		. JP-3
Specification	nsMIL-	F-5624

OIL

Wings*6	56.4
Grade	100
Specification	
WATER/ALCOHOL	

600

A M A C \mathbf{E} R S

FORWARD OBLIQUE STATION

(1)	K-17C,	6" or 12" lens	6
		12" or 24" ler	

or(1) K-38, 24"lens

or(1) 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, 6" lens

VERTICAL STATION

(1) K-17C, 6", 12" or 24" lens

or(1) K-22A, 12", or 24" lens

or(1) K-37, 12" or 36" lens or(1) T-11, 6" lens

or(1) K-38, 24" or 36" lens

SPLIT VERTICAL STATION

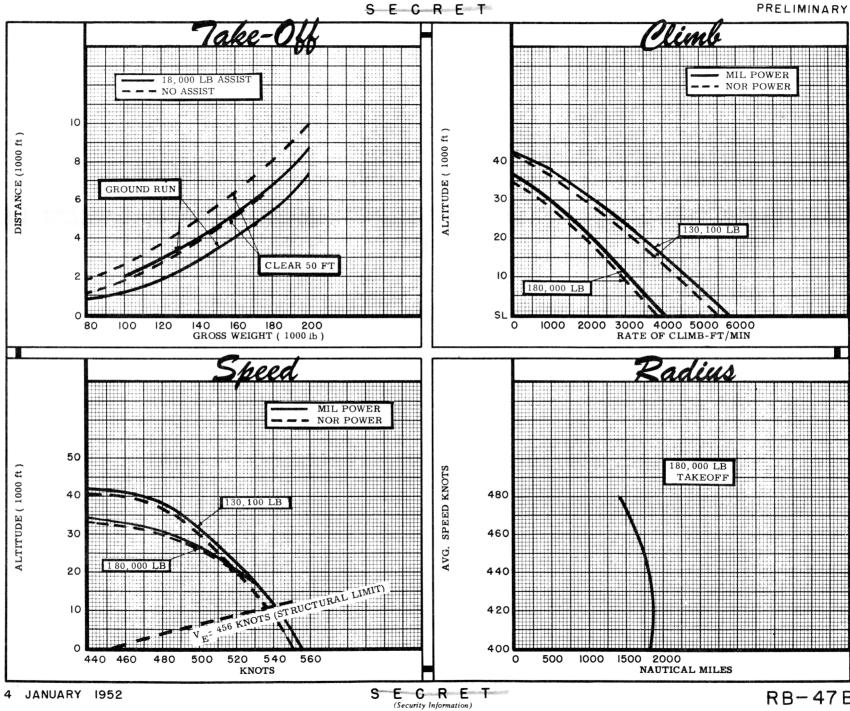
(2) K-38, 24" or 36" lens

ELECTRONICS

VHF Command AN/ARC-27 Liaison *AN/ARC-21 Interphone USAF Combat
Radio CompassAN/ARN-6
Marker Beacon AN/ARN-12
Glide Path AN/ARN-18
Fire Control
Loran AN/APN-9A
Omni-Direct. Recv'r AN/ARN-14
Rendezvous Radar AN/APN-76
ECM(2) AN/APT-5A
IFF AN/APX-6
Bombing Nav. RadarAN/APQ-31A
*Space and structure provisions only

C O N D I T I	O N	S	BASIC MISSION	TRAINER RADIUS			
TAKE-OFF WEIGHT		(lb)	180,000	163,000			
Fuel at 6.5 lb/gal (grade JP-3)		(lb)	92,800	72,500			
Military load		(lb)	None	None			
Wing loading		(lb/sq ft)	126.1	114.1			
Stall speed (power off, landing cor	nfigurat		142	133			
Take-off ground run at SL	(1)	(ft)	6820	5200			
Take-off ground run with ATO	(Ī)	(ft)	5620				
Take-off to clear 50 ft	(Ī)	(ft)	8000	6400			
Take-off to clear 50 ft with ATO	1	(ft)	6840				
Rate of climb at SL	2	(fpm)	3800	4340			
Time: SL to 25,000 ft	<u>@</u>	(min)	9.6	8. 2			
Time: SL to 31,900 ft	② ② ②	(min)	16.0	16.4			
Service ceiling (100 fpm)	(a)	` '		37,000			
Service ceiling (100 ipm) Service ceiling (one engine out)	(2)	(ft)	34, 100	N. A.			
3 (<u></u>	(ft)	N. A.	N.A.			
COMBAT RANGE	3	(n. mi.)	3725				
Average speed		(kn)	428				
Initial cruising altitude		(ft)	31,900				
Final cruising altitude		(ft)	43,700				
Total mission time		(hr)	8.7	4500			
COMBAT RADIUS	3	(n. mi.)	1835	1500			
Average speed		(kn)	428	428			
Initial cruising altitude		(ft)	31,900	35,000			
Bombing altitude		(ft)	39,900	41,600			
Bomb run speed	2	(kn)	464	465			
Final cruising altitude	,	(ft)	43,700	44,300			
Total mission time		(hr)	8.7	7. 1			
COMBAT WEIGHT	4	(lb)	130,100	120,400			
Combat altitude	_	(ft)	35,000	41,600			
Combat speed	1	(kn)	490	464			
Combat climb	① ①	(fpm)	1350	500			
Combat ceiling (500 fpm)	1	(ft)	39,900	41,600			
Service ceiling (100 fpm)	1	(ft)	42,400	44,000			
Service ceiling (one engine out)		(ft)	N.A.	N.A.			
Max rate of climb at SL	1	(fpm)	5750	6180			
Max speed at 11,000 ft	1 6	(kn)	539	539			
LANDING WEIGHT		(lb)	96,950				
Ground roll at SL		(ft)	N.A.				
Ground roll (auxiliary brake)	(5)	(ft)	5080				
Total from 50 ft		(ft)	N.A.				
Total from 50 ft (auxiliary brake)	(5)	(ft)	6380				
						DEDUCATION AND THE	
N (1) Max power O (2) Normal power	(4)	For Radius M	lission if radi	us is 6 Lin	nited by structure	PERFORMANCE BASIS	
T 3 Detailed descriptions of RAI	DIUS (S)	With 32 foot ri	bbon braking n	ara-		(a) Data source: Mar	st of B-47B (Data not
O 2 Normal power shown. T 3 Detailed descriptions of RADIUS 5 With 32 foot ribbon braking para- and RANGE missions are given on chute effective at touchdown, brakes						substantiated by V	

S E C R E T
(Security Information)



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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: RANGE MISSION I

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 II

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) Normaltechnique 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;

J47-GE-23							
S. L. Static	LB	RPM	MIN				
Max:	5910	7950	5				
Mil:	5620	7800	30				
Nor:	5270	7630	Cont				

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
- 1 K-17C camera with 6 in. lens and an A-9A or A-28 magazine
- 1 K-17C camera with 12 in. lens and an A-9A or A-28 magazine
- 1 K-17C camera with 24 in. lens and an A-9A or A-28 magazine
- 1 K-22A camera with 12 in. lens and an A-9A or A-28 magazine
- 1 K-22A camera with 24 in. lens and an A-9A or A-28 magazine
- 1 K-37 camera with 12 in. lens and an A-9A or A-28 magazine
- 1 T-11 camera with 6 in. lens
- 1 K-37 camera with 12 in, lens
- 1 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:

- 3 S-14 cameras with 90mm stereo lens
- 3 S-14 cameras with 6 inch single lens
- 3 K-46 cameras with 7 inch lens
- 3 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
- 1 K-17C camera with 12 inch lens and an A-9A magazine
- 1-K-22A camera with 12 inch lens and an A-9A magazine
- 1 K-22A camera with 24 inch lens and an A-9A magazine
- 1 K-38 camera with 24 inch lens and an A-9A magazine
- 1 A-10 motion picture camera with 25mm, 50mm or 250mm lens cones and 1000 ft film magazine.

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