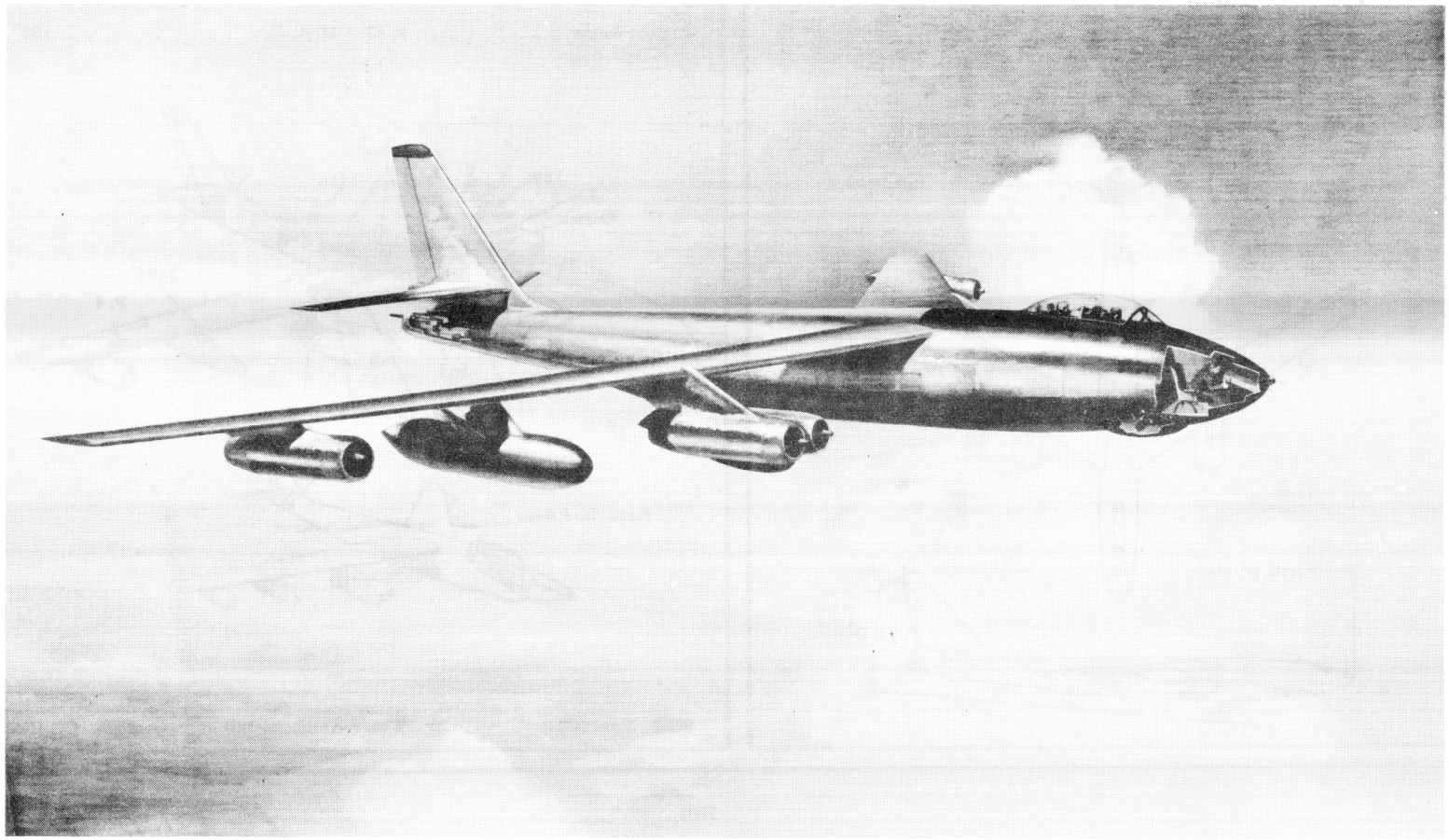
SERVICE



Standard Aircraft Characteristics

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

RB-47K

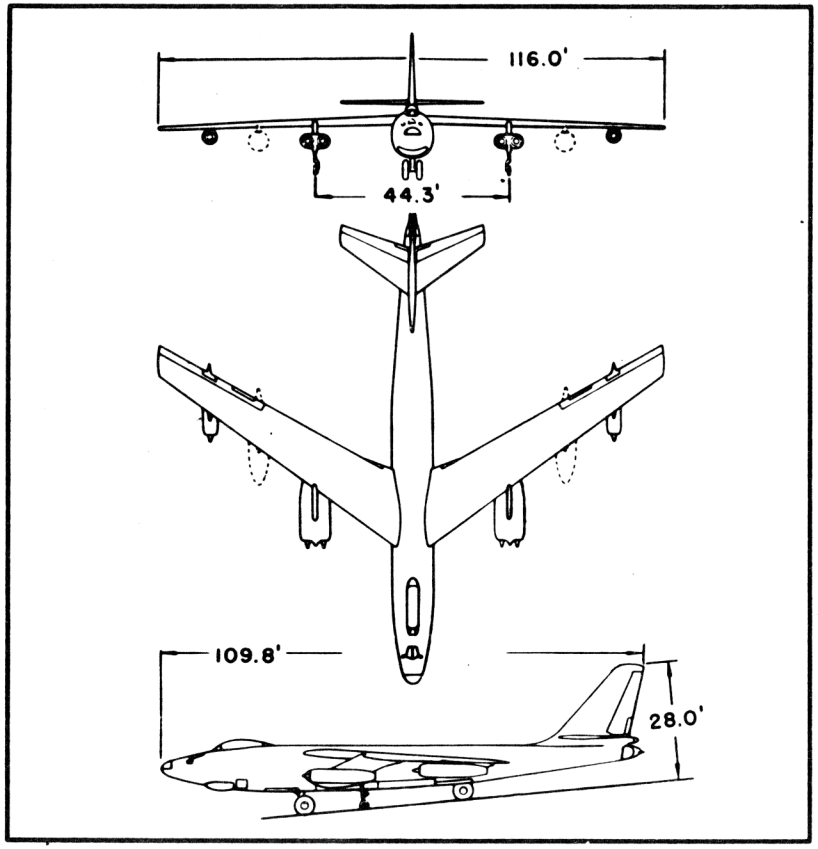
STRATOJET

Boeing

SIX J47-GE-25

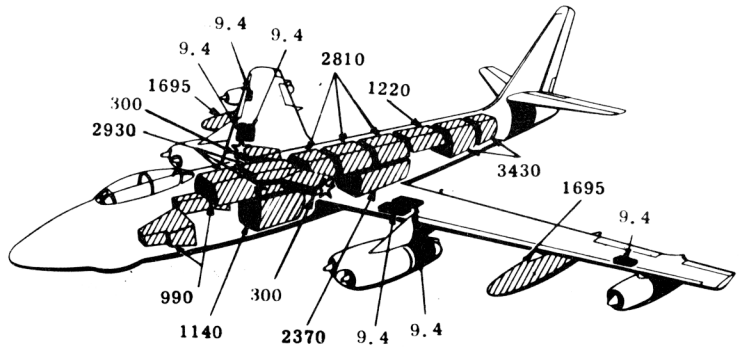
GENERAL ELECTRIC

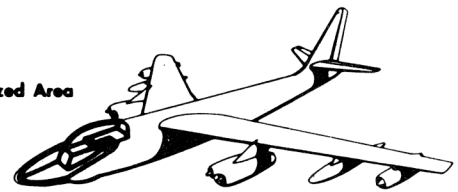
Copy 533



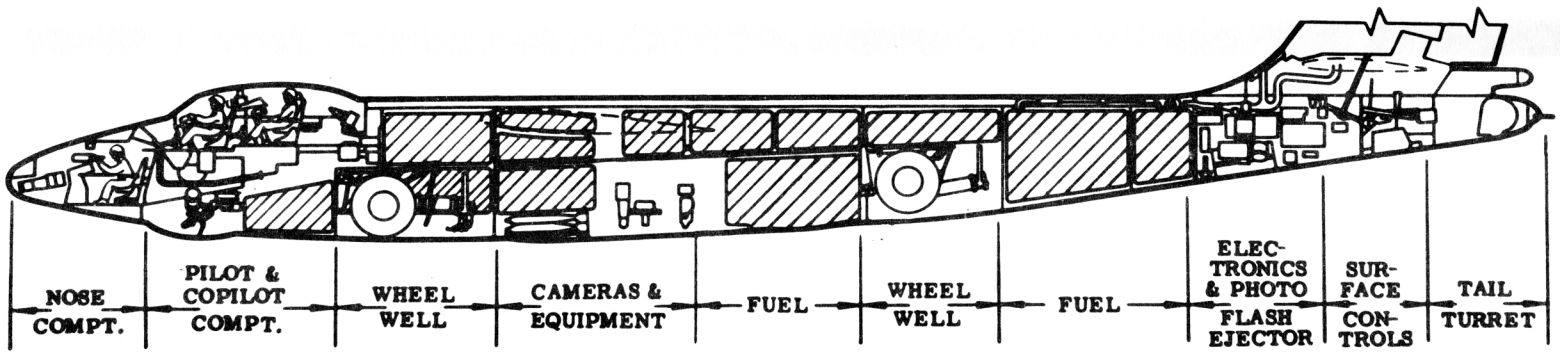
Wing Area . . . . . 1428 sq ft Wing Section . . . . . Boeing 145

Aspect Ratio . . . . . 9.43 M.A.C. . . . . 156"





▨ Fuel (Gal) ☆ Water Alcohol (Gal) ■ Oil (Gal)



POWER PLANT

Nr & Model . . . . . (6)J47-GE-25
Mfr . . . . . General Electric
Engine Spec Nr E-597
Type . . . . . Axial Flow
Length . . . . . 148"
Diameter . . . . . .39.5"
Weight(dry) . . . . . 2707 lb
Tail 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

ENGINE RATINGS

S.L.Static LB	- RPM	- MIN
Max: *7200	- 7950	- 5
5970	- 7950	- 5
Mil: 5670	- 7800	- 30
Nor: 5320	- 7630	- Cont

*wet
water flow of 650 lb/min
ATO
Thrust (lb) 33,000
Duration (sec) 14
or
Thrust (lb) 19,000
Duration (sec) 15

DIMENSIONS

Wing
Span . . . . . 116.0'
Incidence . . . . . 2°45'
Dihedral . . . . . 0°
Sweepback (LE) . . . . . 36°37'
Length . . . . . 109.8'
Height . . . . . 28.0'
Tread (outrigger) . . . . . 44.3'

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.

Development

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

WEIGHTS

Loading	Lb	L.F.
Empty	81,100(E)	
Basic	83,190(E)	
Design	125,000	3.0
Combat	*130,800	
Max T.O. . .	† 200,000	2.0
Max In-Flight	‡ 202,000	2.0
Max Land . .	† 180,000	

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

F U E L

Location	Nr Tanks	Gal
Fwd, Main* . .	1	2930
Fwd, Aux* . .	1	990
Center, Main* .	1	2810
Fwd, Bomb Bay	1	1140
Aft, Bomb Bay	1	2370
Aft, Main* . .	1	3430
Wg, Drop . .	2	3390
ATO Tank . .	1	1220
*Self-sealing	Total	18,280

Grade JP-4
Specification . . . MIL-F-5624A
See note (f) page 6

OIL

Wing . . . . . 6 . . . . (tot) 56.4
Grade 1005
Specification MIL-L-6081A
WATER/ALCOHOL
Wg, inbd 6 600

B O M B S

Nr	Class (lb)
10 Flash Bombs (M-120)	.154
200 Photo Flash Cart(M-112) . . .	1

G U N S

Nr	Type	Size	Rds ea	Loc.
2	M24A1	20mm	350	Fus, Tail

CAMERAS

Nr	Type	Lens
Tri-Metrogon Station		
3	KA-3	6"
Vertical Station		
1	K-38 . .	24" or 36"
or		
1	T-11	6"
or		
1	K-37	12"
Split Vertical Station		
2	K-38 . . .	24" or 36"
or		
2	K-37	12"

See Note (g) page 6

ELECTRONICS

VHF Command	AN/ARC-27
Liaison	AN/ARC-21
Interphone	AN/AIC-10
Radio Compass	AN/ARN-6
Marker Beacon	AN/ARN-12
Glide Path	AN/ARN-18
Fire Control	A-5
Omni-Direct. Recv'r . .	AN/ARN-14
Rendezvous Radar . . .	AN/APN-76
*ECM(2)	AN/APT-5A
IFF	AN/APX-6
Bombing Nav. Radar.	AN/APQ-31A
Chaff Dispenser	AN/ALE-1
Warning Radar	AN/APS-54

*See Notes (h & i) page 6

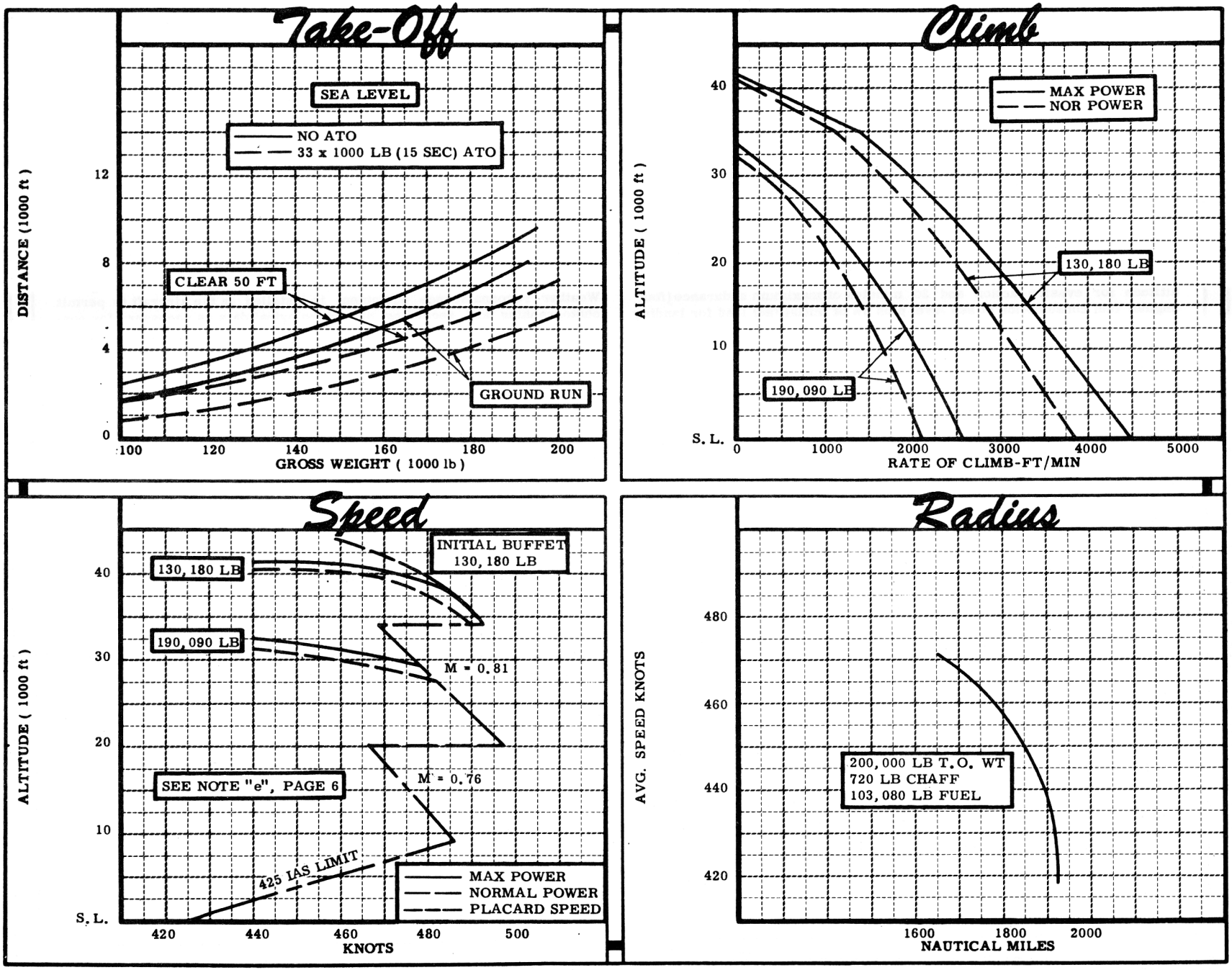
Loading and Performance—Typical Mission

CONDITIONS			BASIC MISSION	FERRY RANGE
			I	II
TAKE-OFF WEIGHT	⑥	(lb)	200,000	200,000
Fuel at 6.5 lb/gal (grade JP-4)		(lb)	103,080	103,800
Payload (Chaff)		(lb)	720	None
Wing loading		(lb/sq ft)	133.2	133.2
Stall speed (power off)	⑧	(kn)	157	157
Take-off ground run at SL	①	(ft)	8050	8050
Take-off ground run with ATO	⑤ ①	(ft)	5650	5650
Take-off to clear 50 ft	①	(ft)	9450	9450
Take-off to clear 50 ft with ATO	⑤ ①	(ft)	7100	7100
Rate of climb at SL	⑧ ③	(fpm)	2110	2110
Rate of climb at SL(one eng out)	⑧ ②	(fpm)	1680	1680
Time: SL to 20,000 ft	③	(min)	11.6	11.6
Time: SL to 30,000 ft	③	(min)	21.0	21.0
Service ceiling (100 fpm)	⑧ ③	(ft)	31,500	31,500
Service ceiling (one eng out)	⑧ ②	(ft)	28,200	28,200
COMBAT RANGE	④	(n mi)	—	3935
COMBAT RADIUS	④	(n mi)	1915	—
Average cruise speed		(kn)	433	433
Initial cruising altitude		(ft)	30,100	30,100
Target speed	③	(kn)	465	—
Target altitude		(ft)	39,200	—
Final cruising altitude		(ft)	43,500	43,500
Total mission time		(hr)	8.92	9.15
COMBAT WEIGHT		(lb)	130,180	94,020
Combat altitude		(ft)	39,200	43,500
Combat speed	②	(kn)	478 ⑨	487 ⑨
Combat climb	②	(fpm)	600	1050
Combat ceiling (500 fpm)	②	(ft)	39,800	46,400
Service ceiling (100 fpm)	③	(ft)	41,100	47,800
Service ceiling (one eng out)	③	(ft)	38,500	44,700
Max rate of climb at SL	②	(fpm)	4470	6160
Max speed at 20,000 ft	⑨	(kn)	497 ⑨	497 ⑨
Basic speed at 35,000 ft	②	(kn)	490 ⑨	495 ⑨
LANDING WEIGHT		(lb)	93,984	94,020
Ground roll at SL		(ft)	4600	4600
Ground roll (auxiliary brake)	⑦	(ft)	2650	2650
Total from 50 ft		(ft)	5500	5500
Total from 50 ft (auxiliary brake)	⑦	(ft)	3550	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 out 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 engine) 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:

(6) J47-GE-25			
S.L. STATIC	LB	RPM	MIN
T.O.	6980	7950	5
Max:	5640	7800	30
Nor:	5270	7630	Cont

(b) For detailed planning refer to Technical Order Nr 1B-47(R)E-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-52-719 utilize 510 gal ATO tank. Aircraft with Serial No. AF-52-720 and subsequent utilize 1220 gal aft 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 meterological 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 a AN/AMT-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) 15KS1000.

PERFORMANCE REFERENCES:

Boeing Report D-13194 "B-47 Performance Substantiation. Models B-47B(-23 engines), B-47E" dated 3 June 1953.

REVISION BASIS:

Initial Issue