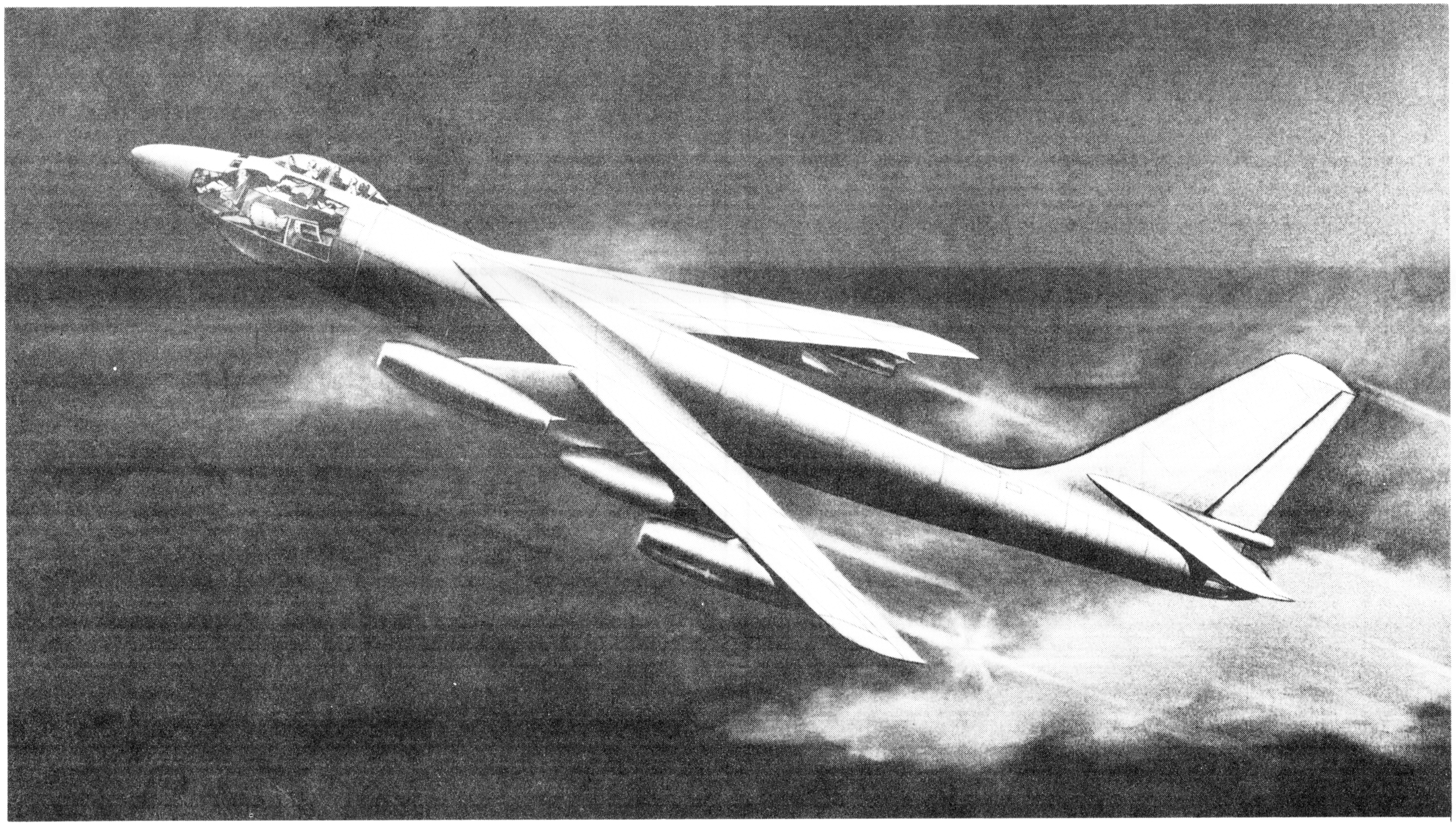


Classification cancelled or changed to Unclassified
AUTH: AFSC AF LC- Sec class. Guide 1 Jan 64 DOD Dir 5200.10
By A.R. Sonneborn Lapoky 16 Dec 1966
Signature and Grade

Standard Aircraft Characteristics

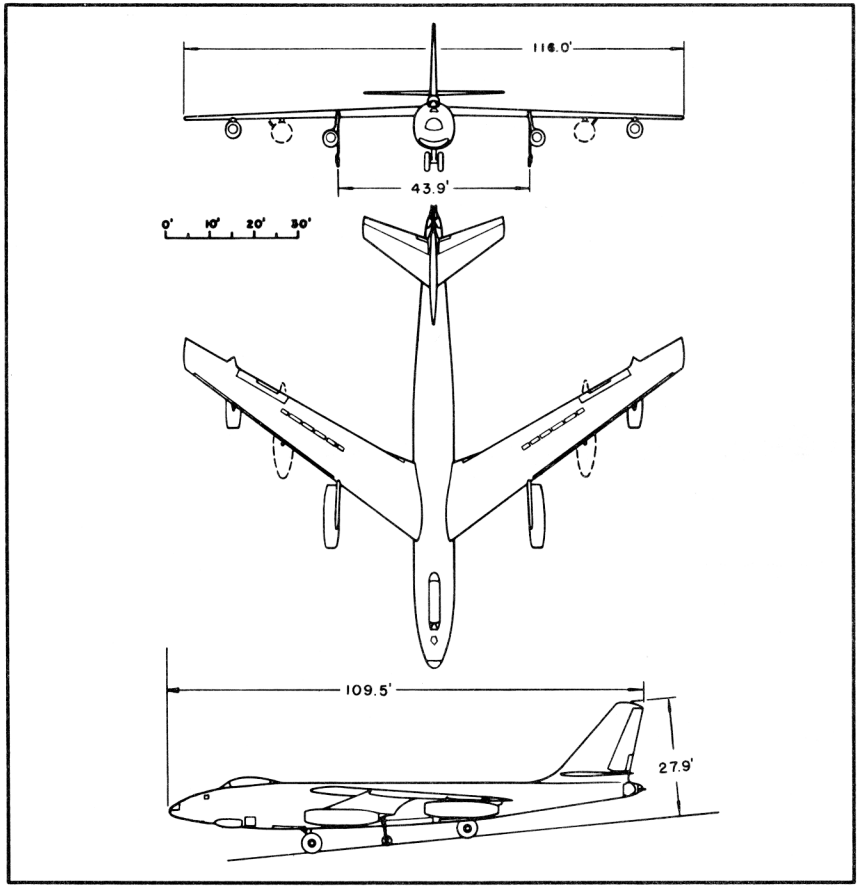
RB-47C

STRATOJET

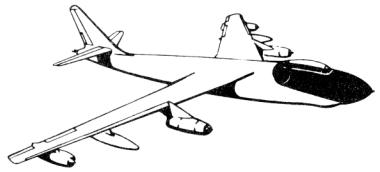
Boeing

BY AUTHORITY OF
COMMANDING GENERAL
AIR MATERIEL COMMAND
U. S. AIR FORCE

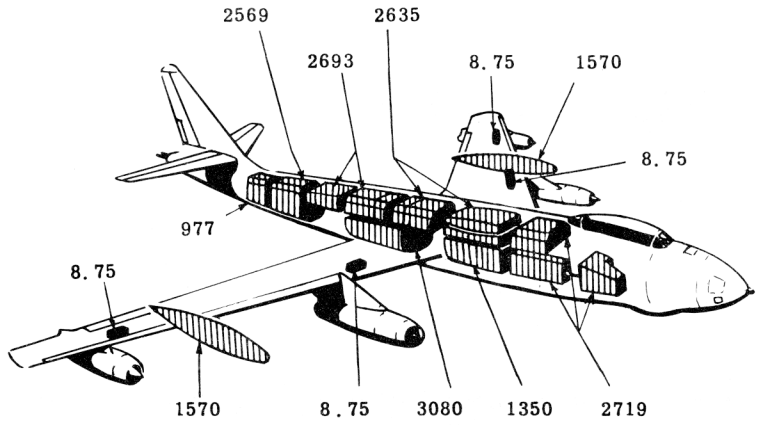
FOUR J35-A-23
ALLISON



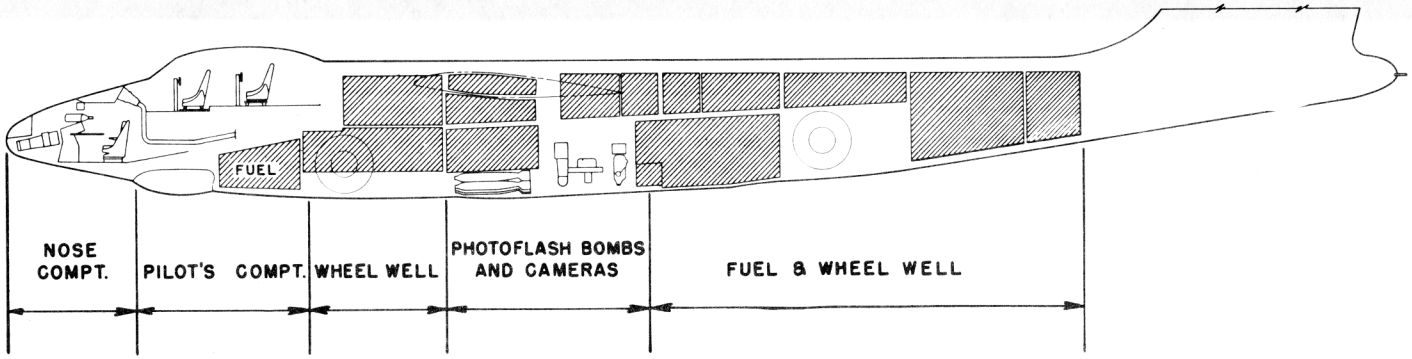
Wing Area ..... 1428 sq ft
Aspect Ratio 9.43
Wing Section ..... Boeing 145
M.A.C. ..... 155.9"



Pressurized Area



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



POWER PLANT

No. & Model ..... *(4) J35-A-23
Mfr ..... Allison
Engine Spec No. 286C
Type ..... Axial
Length ..... 179.0"
Diameter ..... 39.5"
Weight(dry) ..... 3650 lb
*See page 6, note "g"

ATO

No. & Model ..... (1) YLR-45-AJ-1
Mfr ..... Aerojet
System Weight (loaded) ..... 7300 lb

or

No. & Model ..... (1) YLR-47-K-1
Mfr ..... Kellogg
System, Weight(loaded) ..... 7300 lb

ENGINE RATINGS

S. L. Static	LB - RPM
Max:	9700 - 6100
Mil:	9700 - 6100
Nor:	8200 - 6100

ATO

4 Chambers (5000 lb thrust ea)
Total Thrust (lb)..... 20000
Duration(sec) 60
(Propellant is white fuming nitric acid and gasoline)

DIMENSIONS

Wing
Area ..... 1428 sq ft
Span ..... 116'
Incidence ..... 2°45'
Dihedral ..... 0°
Sweepback (LE) ..... 36°37'
Length ..... 109.5'
Height ..... 27.9'
Tread(outrigger) ..... 43.9'

GUNS

No.	Cal	Rds ea	Location
2	.50	600	Fus, tail

BOMBS

No.	Type
10	T-9E8, Flash

Mission and Description

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

The normal crew consists of a pilot, copilot and photo-navigator. Features incorporated for improved crew comfort and efficiency include heating, ventilation, pressurization, NESA glass de-icing on the pilot's windshield and hydraulic boost on all control surfaces. Spoiler type ailerons for improved lateral control at low altitude and high speed are provided. Seat ejection is provided for all crew members (tentative, pending approval of Hq, USAF).

The engines, wing and empennage incorporate anti-icing features. Single point ground fueling and in-flight refueling is provided as is continuous internal and external fuel purging.

A two gun tail turret, with radar sight at the copilot's station, is installed. A rotatable seat allows the copilot to face aft while functioning as fire-control operator.

Liquid fuel rockets for assisted take-off, a braking parachute for decreasing landing roll distance and anti-skid device for braking are provided. The bicycle type landing gear is electrically operated while the outrigger gear is hydraulically operated.

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

Development

Design initiated: ..... Aug 50
Reconnaissance version of B-47C
Prototype first flight: ..... Dec 51 (est)
Production article acceptance: ..... Sep 52 (est)
Formerly designated RB-56A
Navy Designation: None
Manufacturer's Model: 450-24-26

CAMERAS

FORWARD OBLIQUE STATION
(1) K17C, 6" or 12" lens
or (1) K-22, 12" or 24" lens
or (1) K-48, 24" or 36" lens
or (1) A-10, Motion Picture

TRI-METROGON STATION
(3) S-11, 88mm Strip
or (3) S-11, 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-22, 12" or 24" lens
or (1) K-36, 24" lens
or (1) K-48, 24" or 36" lens
or (1) T-11, 6" lens

SPLIT VERTICAL STATION
(2) K-48, 24" or 36" lens

WEIGHTS

Loading	Lb	L. F.
Empty	80,811(E)	
Basic	83,953(E)	
Design	125,000	3.0
Combat	*128,400	
Max T. O.	†180,000	2.0
Max Land	‡180,000	1.7
Max IFR	202,000	**2.0

(E) Estimated
* For Basic Mission
† Limited by strength
‡ See page 6, note "d"
**With external tanks
Max T. O. weight does not include ATO fuel

FUEL

Location	No. Tanks	Gal
Fus, main	5	11,593
Fus, aux	1	1350
Bomb bay	1	3080
Wg, drop*	2	3140
(Approx. 64% of permanent tanks s. s.)	Total	19,163

Grade JP-3
*Weight limit - 20,400 lb

OIL

Capacity (gal) 35
Grade 1005

ELECTRONICS

Command	AN/ARC-27
Radar Beacon	AN/APN-76
Liaison	*AN/ARC-21
Glide Path	AN/ARN-18
Omni-Direct. Recvr	AN/ARN-14
Fire Control	A-2 System
Intercom.	AN/AIC-10
Radio Compass	AN/ARN-6
IFF	AN/APX-6
Loran	AN/APN-70
Marker Beacon	AN/ARN-12
Bombing-Nav. Radar	AN/APQ-31A
ECM	AN/APT-5A
ECM	**AN/APT-16

* Space and structural provisions
**Alternate installation
Emergency Keyer AN/ARA-36

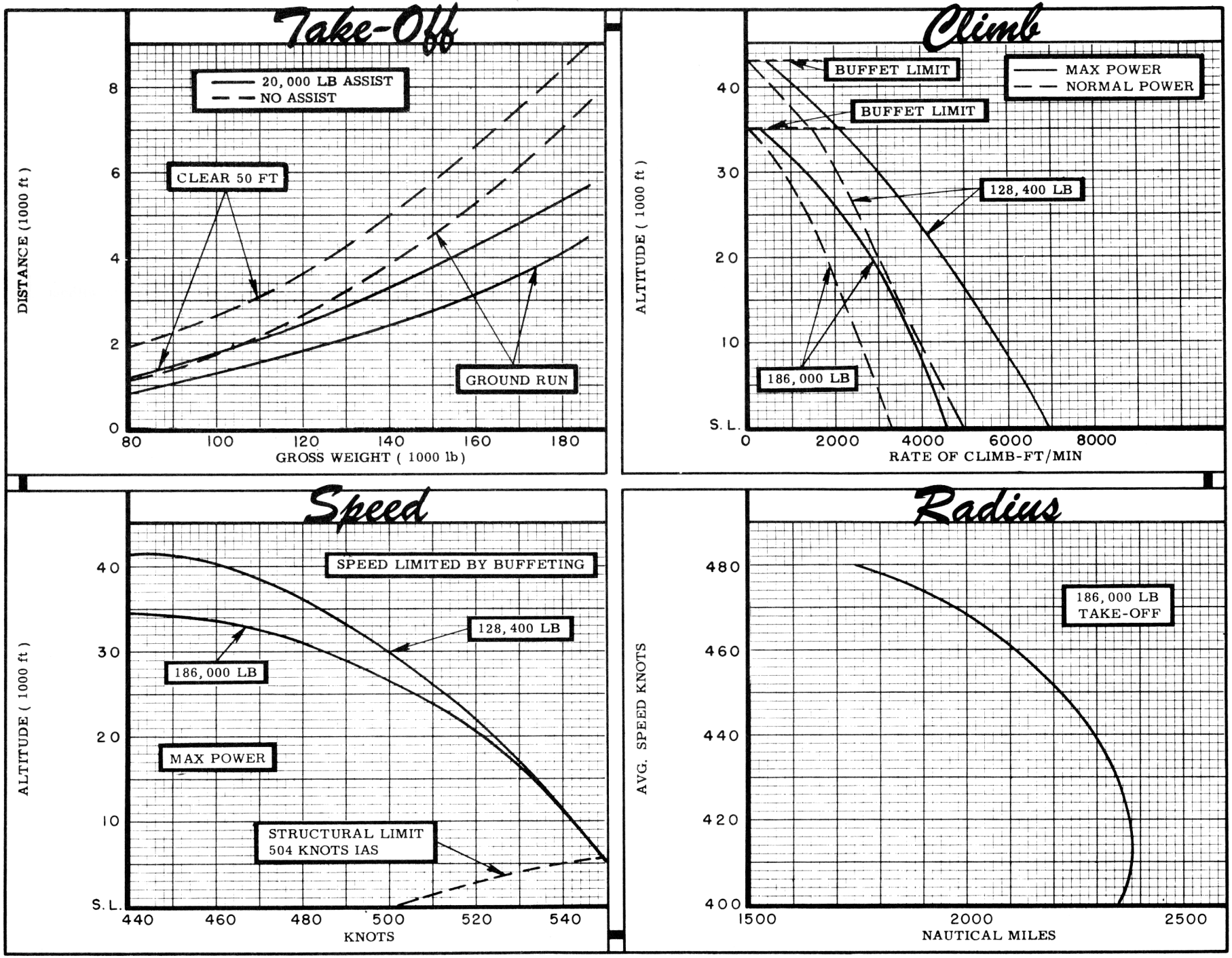
Loading and Performance—Typical Mission

CONDITIONS				BASIC MISSION	NIGHT MISSION
TAKE-OFF WEIGHT	(10)		(lb)	180,000 I	180,000 II
Fuel at 6.5 lb/gal(grade JP-3)			(lb)	96,043	94,785
Military load (flash bombs)			(lb)	None	1570
Military load			(lb)	———	———
Wing loading			(lb/sq ft)	130.3	130.3
Stall speed(power off, landing configuration)			(kn)	138	138
Take-off ground run at SL	(1)		(ft)	7200	7200
Take-off ground run with JATO	(1)	(5)	(ft)	4220	4220
Take-off to clear 50 ft	(1)		(ft)	8600	8600
Take-off to clear 50 ft with JATO	(1)	(5)	(ft)	5460	5460
Rate of climb at SL	(2)		(fpm)	3250	3250
Time: SL to 25,000 ft	(2)		(min)	9.6	9.6
Time: SL to 30,700 ft	(2)		(min)	13.1	13.1
Service ceiling (100 fpm)	(2)		(ft)	35,000	35,000
Service ceiling (one engine out)			(ft)	(6)	(6)
COMBAT RANGE	(3)		(n. mi.)	4730	(6)
Average speed			(kn)	426	(6)
Initial cruising altitude			(ft)	30,700	(6)
Final cruising altitude			(ft)	48,200	(6)
Total mission time			(hr)	11.4	(6)
COMBAT RADIUS	(3)		(n. mi.)	2350	2310
Average speed			(kn)	426	426
Initial cruising altitude			(ft)	30,700	30,700
Bombing altitude			(ft)	41,700	41,500
Bomb run speed			(kn)	(6)	(6)
Final cruising altitude			(ft)	43,600	43,700
Total mission time			(hr)	11.3	11.1
COMBAT WEIGHT	(4)		(lb)	128,400	127,330
Combat altitude			(ft)	35,000	41,800
Combat speed	(1)	(8)	(kn)	484	445
Combat climb	(1)		(fpm)	2100	750
Combat ceiling (500 fpm)	(1)		**(ft)**	**42,600**	**42,700**
Service ceiling (100 fpm)	(2)		**(ft)**	**43,000**	**43,100**
Service ceiling (one engine out)			(ft)	(6)	(6)
Max rate of climb at SL	(1)		(fpm)	6700	6800
Max speed at 5800 ft	(1)	(9)	(kn)	550	550
LANDING WEIGHT			(lb)	93,560	93,124
Ground roll at SL			(ft)	(6)	(6)
Ground roll (auxiliary brake)	(7)		(ft)	5500	5500
Total from 50 ft			(ft)	(6)	(6)
Total from 50 ft (auxiliary brake)	(7)		(ft)	6630	6630

NOTES

(1) Max power
(2) Normal power
(3) Detailed descriptions of RADIUS and RANGE missions are given on page 6.
(4) For Radius Mission is radius is shown
(5) With 20,000 lb thrust ATO(60 seconds)
(6) Not available
(7) With 32 ft ribbon braking parachute
(8) Limited by buffeting
(9) Limited by strength
(10) Does not include ATO fuel. Addition of ATO fuel gives initial gross weight of 186,000 lb. Data is presented for breakground weight of 180,000 lb.

PERFORMANCE BASIS: (a) Data source: Contractor's estimates
(b) Performance is based on powers shown on page 6.


Take-Off
20,000 LB ASSIST
NO ASSIST
CLEAR 50 FT
GROUND RUN
DISTANCE (1000 ft)
GROSS WEIGHT (1000 lb)
Climb
BUFFET LIMIT
BUFFET LIMIT
MAX POWER
NORMAL POWER
128,400 LB
186,000 LB
ALTITUDE (1000 ft)
RATE OF CLIMB-FT/MIN
Speed
SPEED LIMITED BY BUFFETING
128,400 LB
186,000 LB
MAX POWER
STRUCTURAL LIMIT
504 KNOTS IAS
ALTITUDE (1000 ft)
KNOTS
Radius
186,000 LB
TAKE-OFF
AVG. SPEED KNOTS
NAUTICAL MILES

NOTES

FORMULA: RADIUS MISSION I

Take-off, climb on course to 30,700 ft altitude at normal power, cruise out at long range speeds increasing altitude with decreasing airplane weight, conduct 6 minute normal power photo run to target, conduct normal power evasive action for 6 minutes, start cruise to home base at 41,700 ft altitude arriving over home base at 43,600 ft altitude. Range free allowances include 5 minutes normal power fuel consumption for starting engines and take-off, 6 minutes normal power evasive action and 10% initial fuel for reserve.

FORMULA: RANGE MISSION I

Same as the outbound leg of the Basic Radius formula continued without making normal power photo run until 90% of initial fuel has been used at 48,200 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 10 flares are carried and dropped during photo run. Initial altitude for start of cruise out is 30,700 ft altitude and final altitude over home base is 43,700 ft. Range free allowances are the same as for the Basic Radius formula.

GENERAL DATA

(a) Data is contractor estimated. (Not substantiated by AMC)

(b) Fuel density: 6.5 lb/gal (JP-3)

(c) Normal technique is for take-off with ATO rockets of 60 second duration fired at start of roll.

(d) Landing distances are based on 4 engines at idling rpm for approach and 2 inboard engines at idling rpm for ground roll. Brakes applied at 40 knots.

(e) Maximum landing weight limited by maximum flight weight without external fuel. (Compiled on basis of 8 ft/sec ultimate rate of descent with 1G wing lift).

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

J35-A-23		
S. L. Static	LB	RPM
Max:	10,090	6100
Nor:	8525	6100
Note: Above ratings are from Allison Spec No. 286C.		

(g) The engine installation for RB-47C aircraft will be the J35-A-23 or J47-GE-21. Performance data in the analysis is based on the J35-A-23.