

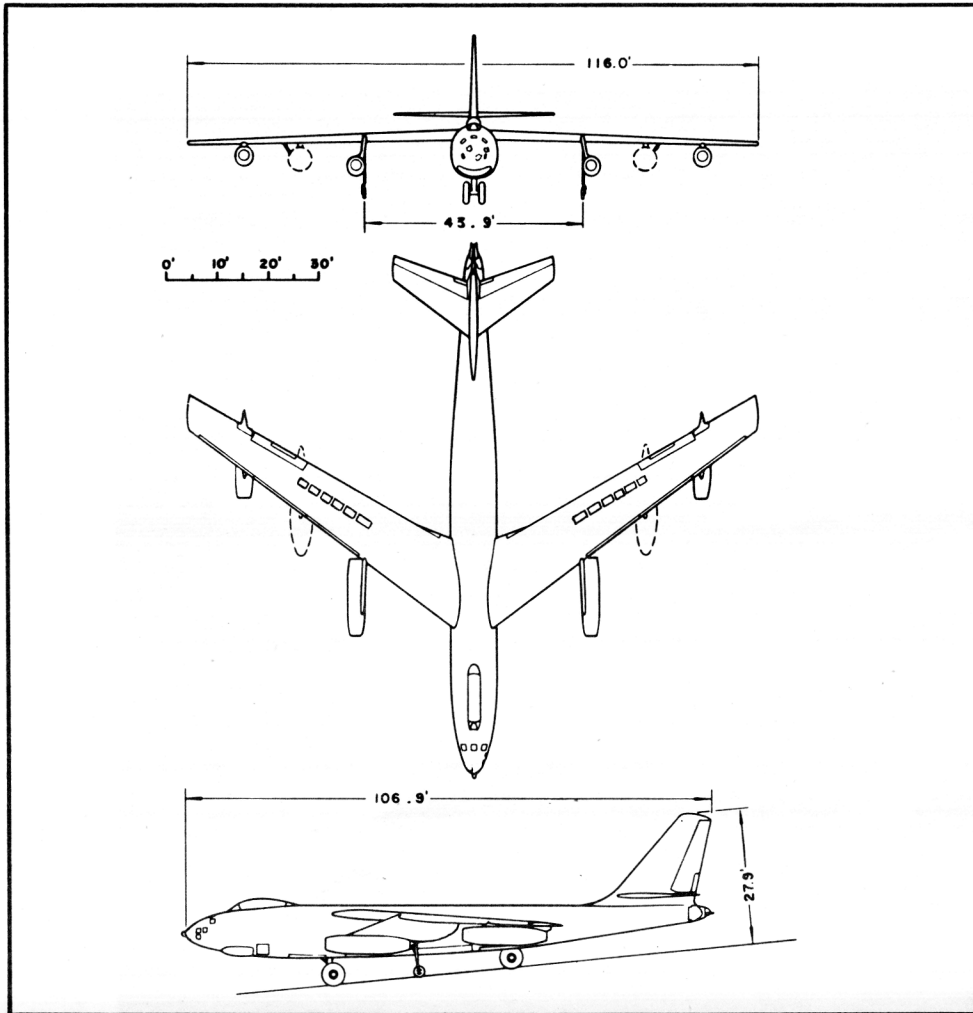
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 AUTH: AFSG-AT-RC Doc Class Under 19064  
 By: A. R. Jomolovin ~~10/2/64~~ Doc Dir 5200.10  
 Signature and Date 16 Dec 1966

# Standard Aircraft Characteristics

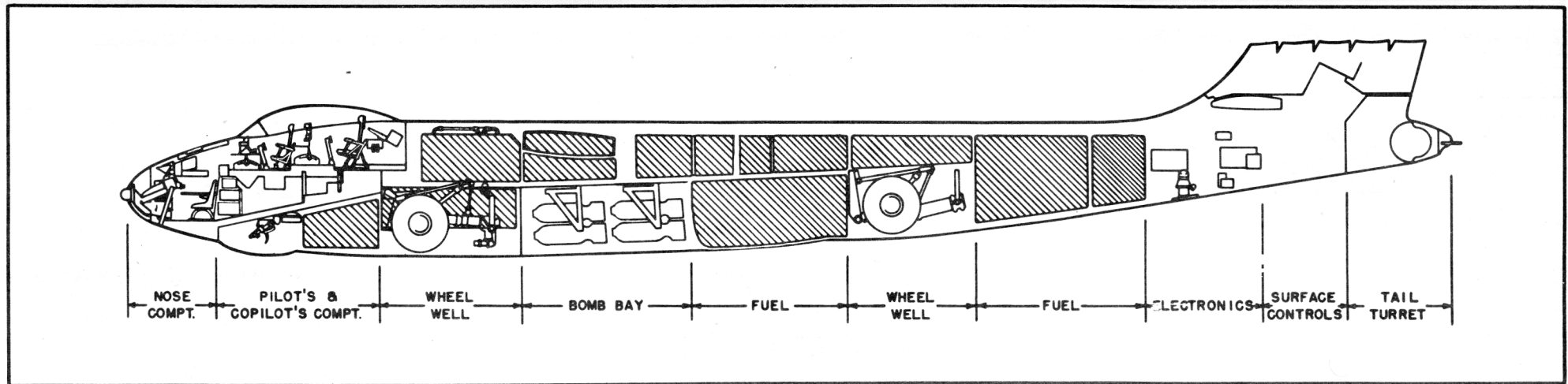
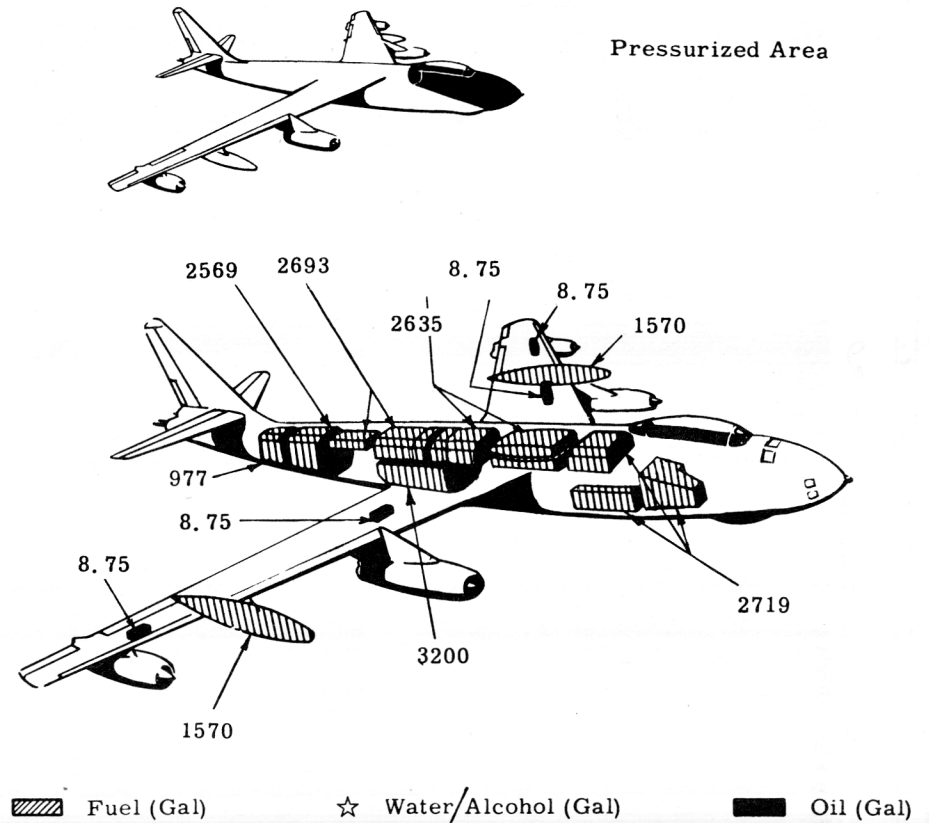
BY AUTHORITY OF  
 COMMANDING GENERAL  
 AIR MATERIEL COMMAND  
 U. S. AIR FORCE

**B-47C**  
**STRATOJET**  
**Boeing**

FOUR J35-A-23  
 ALLISON



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



**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) ..... 20,000  
 Duration (sec) ..... 60  
 (Propellant is white fuming nitric acid and gasoline)

*Mission and Description*

The B-47C airplane is high speed, medium range, jet bomber whose tactical mission is the destruction by bombs of land and naval materiel objectives.

The normal crew consists of a pilot, co-pilot-weaponier-gunner and bombardier-navigator. Seat ejection is provided for all crew members (tentative, pending approval of Hq, USAF).

Features incorporated for improved crew comfort and efficiency include heating, ventilation, pressurization, NESA glass de-icing for 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. The wing and empennage utilize anti-icing. The engine incorporates anti-icing features. Single point ground fueling and in-flight refueling is provided as is continuous internal and external fuel tank purging. A two guntail turret, with radar sight at the co-pilot's station, is provided. 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 difference from B-47B is change from six to four turbojet type engines.

*Development*

Modification of B-47B with (4) J35 engines in lieu of (6) J47's.  
 Design initiated: ..... Jan 50  
 First flight (YB-47C prototype): ..... Oct 51 (est)  
 First acceptance: ..... May 53 (est)  
 One B-47B bailed to Boeing for engine and related changes and tests.  
 Formerly designated B-56A  
 Navy Designation: ..... None  
 Manufacturer's Model: ..... 450-19-10

**WEIGHTS**

Loading	Lb	L. F.
Empty	79,877(E)	
Basic	82,607(E)	
Design	125,000	3.0
Combat	*122,000	
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 "a"  
 \*\* With external tanks  
 Max T. O. does not include ATO fuel

**F U E L**

Location	No. Tanks	Gal
Fuselage	5	11,593
Wg, drop	2	3140
Bom bay	1	3200
(Approx 72% of Total permanent tanks s. s.)		17,933
Grade		JP-3

**OIL**

Capacity (gal) ..... 35  
 Grade ..... 1005

**B O M B S**

No.	Size	Type
1	10,000	Special

Or one of the following loadings which require kits and allow for bomb bay fuel

1	4000	G. P.
3	2000	G. P.
8	1000	G. P.

Or one of the following loadings which require long bomb bay doors, kits and allow for no bomb bay fuel:

1	22,000	G. P.
1	12,000	G. P.
2	4000	G. P.
6	2000	G. P.
12	1000	G. P.

**DIMENSIONS**

Wing  
 Area ..... 1428 sq ft  
 Span ..... 116'  
 Incidence ..... 2°45'  
 Dihedral ..... 0°  
 Sweepback(LE) ..... 36°37'  
 Length ..... 106.9'  
 Height ..... 27.9'  
 Tread(outrigger) ..... 43.9'

**G U N S**

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

**C A M E R A S**

Vertical station for one of the following:  
 K-17C, 6", 12" or 24" lens  
 K-22A, 6", 12" or 24" lens  
 K-48, 24" or 36" lens  
 K-36, 24" lens. Night Camera and accessories

**ELECTRONICS**

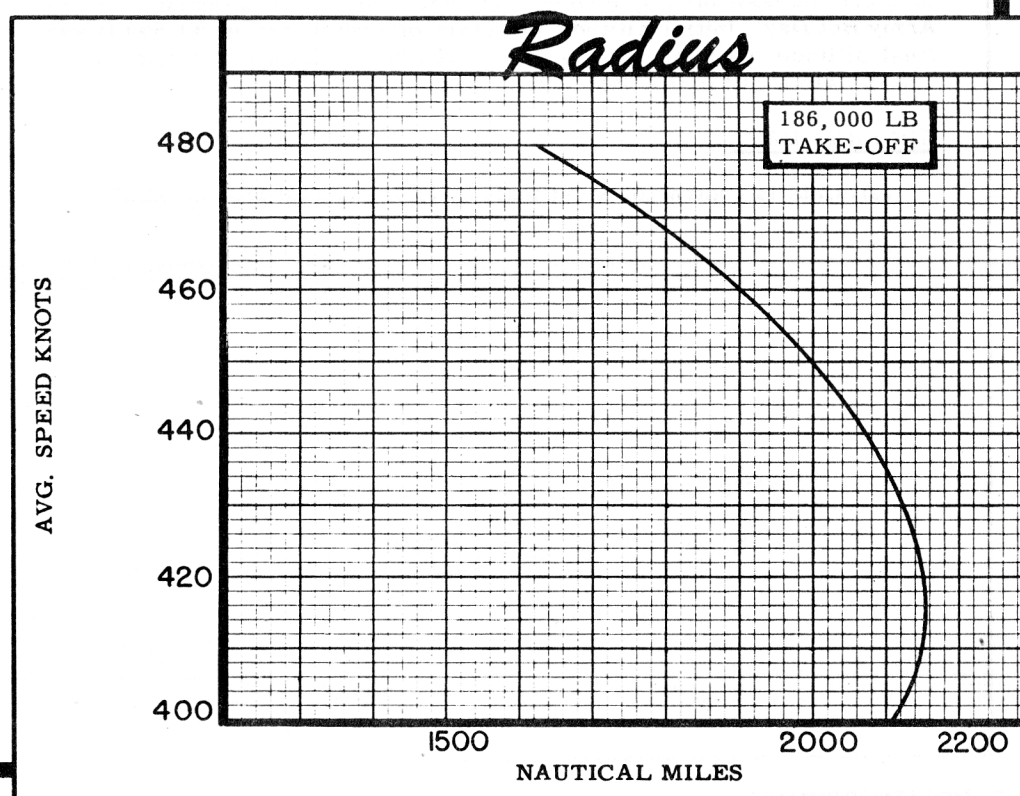
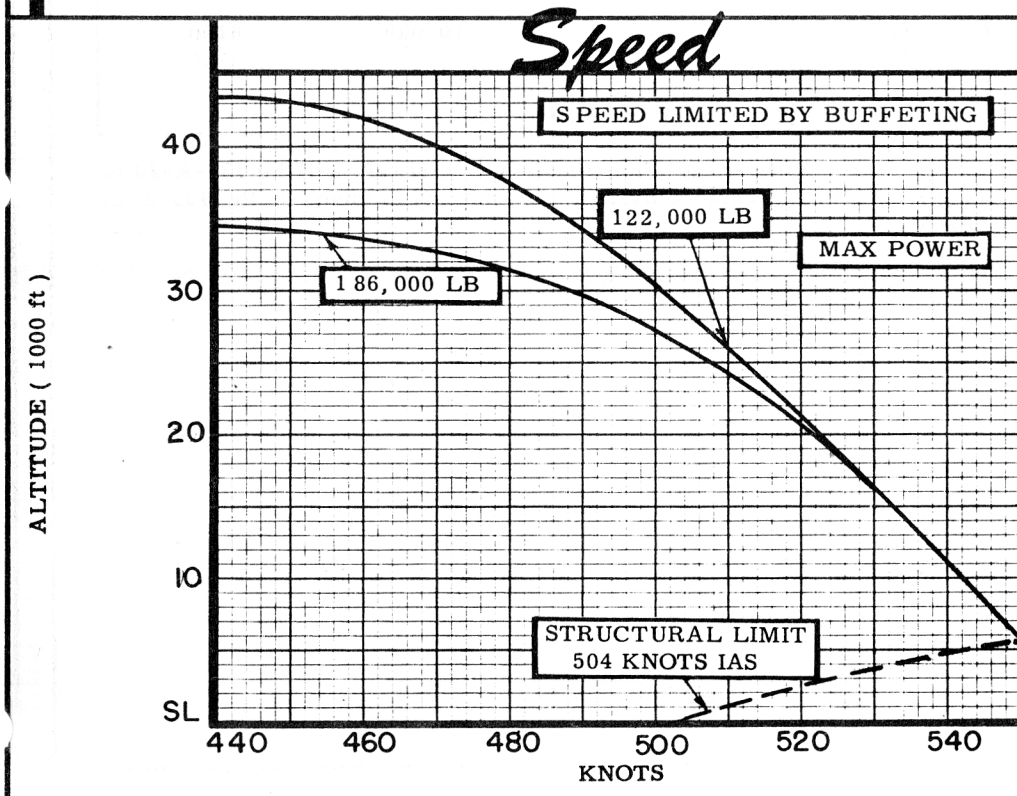
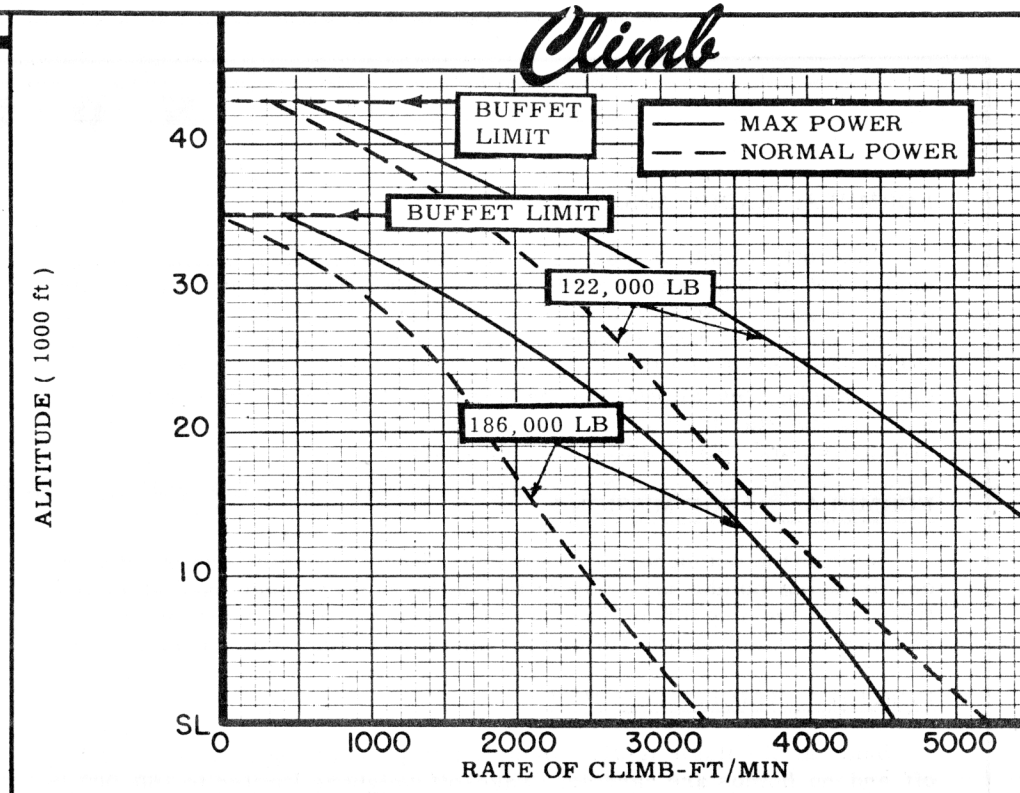
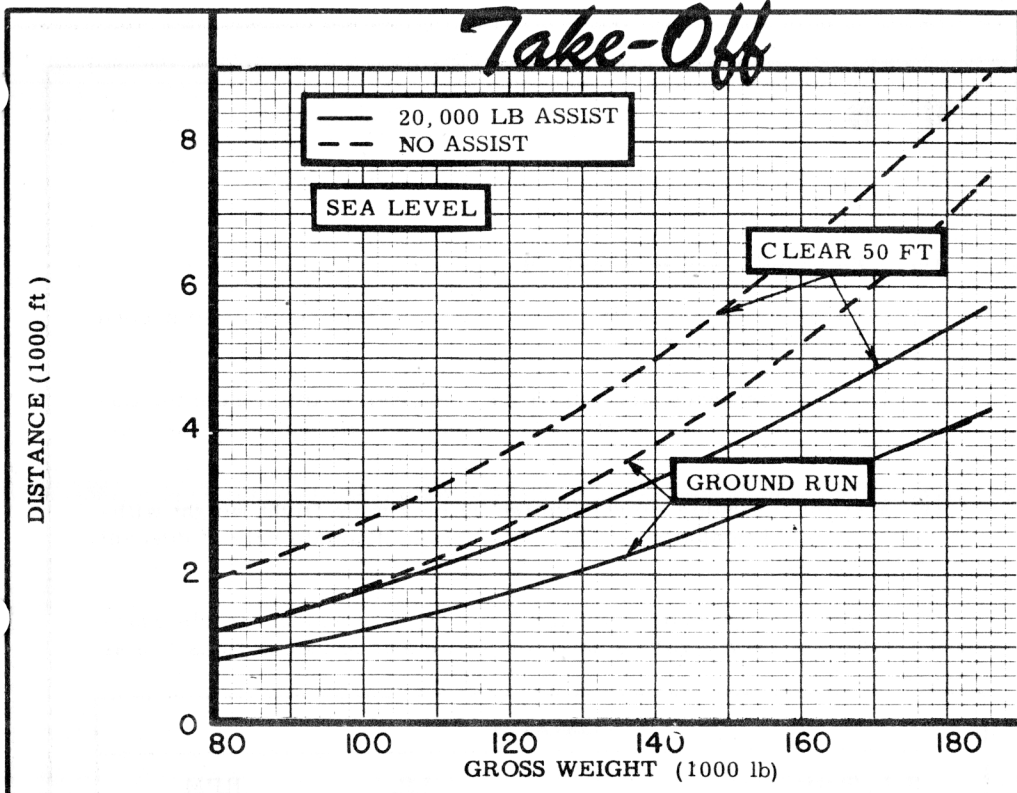
VHF Command ..... AN/ARC-27  
 Liaison ..... \*AN/ARC-21  
 Interphone ..... USAF Combat  
 Radio Compass ..... AN/ARN-6  
 Marker Beacon ..... AN/ARN-12  
 Glide Path ..... AN/ARN-18  
 Fire Control ..... A-2 System  
 IFF ..... AN/APX-6  
 Loran ..... AN/APN-9A  
 Omni-Direct. Recv'r .. AN/ARN-14  
 Rendezvous Radar .... AN/APN-76  
 Bombing System ..... Type K-4A  
 ECM ..... AN/APT-5A  
 ECM ..... \*\*AN/APT-16  
 Emergency Keyer .... AN/ARA-36  
 \*Space and structural provisions  
 \*\*Alternate installation

# Loading and Performance - Typical Mission

C O N D I T I O N S	B A S I C M I S S I O N	T R A I N E R M I S S I O N
TAKE-OFF WEIGHT <sup>①</sup> (lb)	180,000	160,000
Fuel at 6.5 lb/gal(grade JP-3) (lb)	87,387	77,323
Military load (bombs) (lb)	10,000	None
Wing loading (lb/sq ft)	130.0	112.0
Stall speed (power off, landing configuration) (kn)	138	129
Take-off ground run at SL <sup>①</sup> (ft)	7200	5100
Take-off ground run with ATO <sup>①</sup> <sup>⑤</sup> (ft)	4220	—
Take-off to clear 50 ft <sup>①</sup> (ft)	8600	6310
Take-off to clear 50 ft with ATO <sup>①</sup> <sup>⑤</sup> (ft)	5460	—
Rate of climb at SL <sup>②</sup> (fpm)	3250	3870
Time: SL to 25,000 ft <sup>②</sup> (min)	9.6	8.9
Time: SL to 30,700 ft <sup>②</sup> (min)	13.1	13.9 <sup>⑧</sup>
Service ceiling (100 fpm) <sup>②</sup> (ft)	35,000	38,000
Service ceiling (one engine out) <sup>①</sup> (ft)	33,800	36,100
COMBAT RANGE <sup>③</sup> (n. mi.)	4140	4075
Average speed (kn)	426	426
Initial cruising altitude (ft)	30,700	33,500
Final cruising altitude (ft)	46,600	44,300
Total mission time (hr)	10.0	9.8
COMBAT RADIUS <sup>③</sup> (n. mi.)	2130	2003
Average speed (kn)	426	426
Initial cruising altitude (ft)	30,700	33,500
Bombing altitude (ft)	41,000	43,600
Bomb run speed <sup>②</sup> (kn)	445	445
Final cruising altitude (ft)	44,100	44,600
Total mission time (hr)	10.3	9.6
COMBAT WEIGHT <sup>④</sup> (lb)	122,000	117,200
Combat altitude (ft)	35,000	43,600
Combat speed <sup>①</sup> <sup>⑨</sup> (kn)	485	445
Combat climb <sup>①</sup> (fpm)	2300	750
Combat ceiling (500 fpm) <sup>①</sup> (ft)	43,600	44,700
Service ceiling (100 fpm) <sup>②</sup> (ft)	43,900	45,000
Service ceiling (one engine out) <sup>②</sup> (ft)	38,000	48,600
Max rate of climb at SL <sup>①</sup> (fpm)	7050	7300
Max speed at 5800 ft <sup>①</sup> <sup>⑩</sup> (kn)	550	550
LANDING WEIGHT (lb)	91,346	90,410
Ground roll at SL (ft)	⑥	⑥
Ground roll (auxiliary brake) <sup>⑦</sup> (ft)	5400	⑥
Total from 50 ft (ft)	⑥	⑥
Total from 50 ft (auxiliary brake) <sup>⑦</sup> (ft)	6520	⑥

<b>N O T E S</b>	① Max power	④ For Radius Mission if radius is shown.	⑨ Limited by buffeting
	② Normal power	⑤ With 20,000 lb thrust ATO (60 seconds)	⑩ Limited by strength
	③ Detailed descriptions of RADIUS and RANGE missions are given on page 6.	⑥ Not available	⑪ 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.
		⑦ With 32 ft ribbon braking parachute	PERFORMANCE BASIS: Contractor's estimates (See page 6).
	⑧ Climb to 33,500 ft		





**N O T E S**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 bomb run to target, drop bombs, conduct normal power evasive action for 6 minutes, start cruise to homebase at 42,000 ft altitude arriving over home base at 44,100 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% of initial fuel for reserve.

FORMULA: RANGE MISSION I

Same as the outbound leg of the Basic Radius formula continued without dropping bombs 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 bombs are carried. Take-off weight is limited to 160,000 lb to meet the take-off requirements of 7500 ft over a 50 ft obstacle on any Army Hot Day. Initial altitude for start of cruise out is 33,500 ft and final altitude over the home base is 44,600 ft. Range free allowances are the same as for the Basic Radius formula.

GENERAL DATA

(a) Data is contractor's estimates. (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 (computed 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 values from Allison Spec No. 286C		

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

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