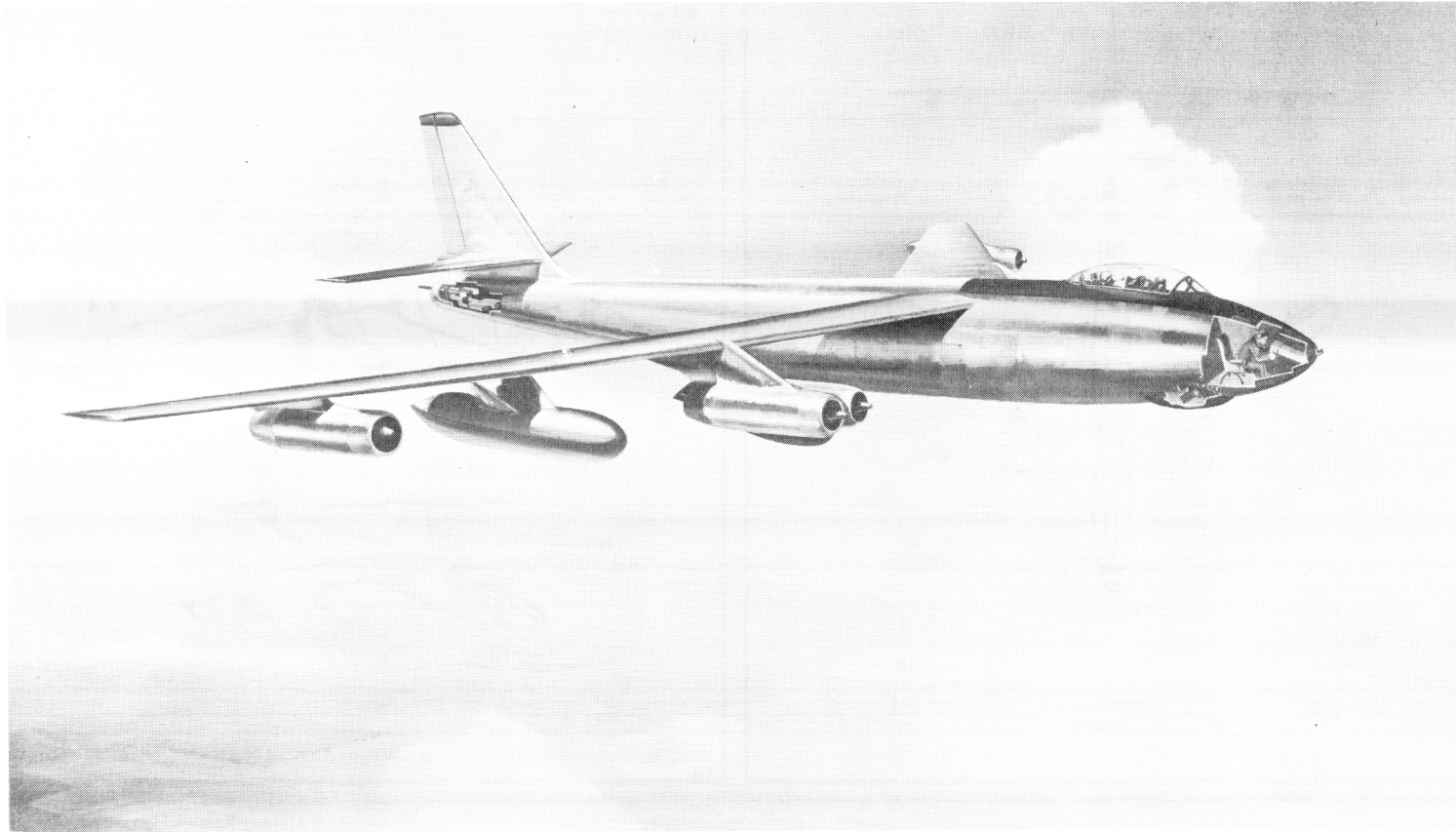


A-1  
B-47E / CAA

UNCLASSIFIED

SERVICE

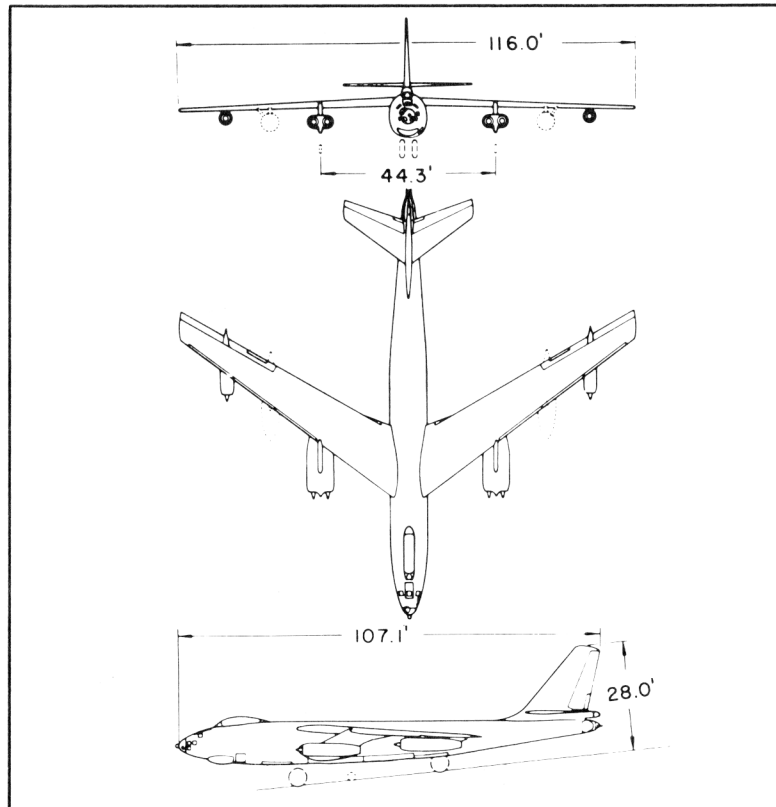


## *Standard Aircraft Characteristics*

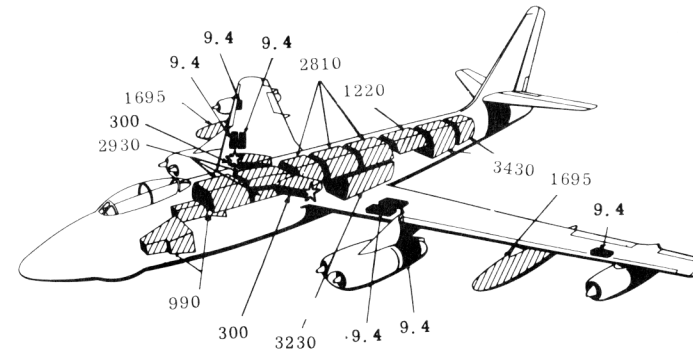
BY AUTHORITY OF  
THE SECRETARY  
OF THE AIR FORCE

**B-47E IV**  
**STRATOJET**  
**Boeing**

SIX J47-GE-25, 25A  
GENERAL ELECTRIC

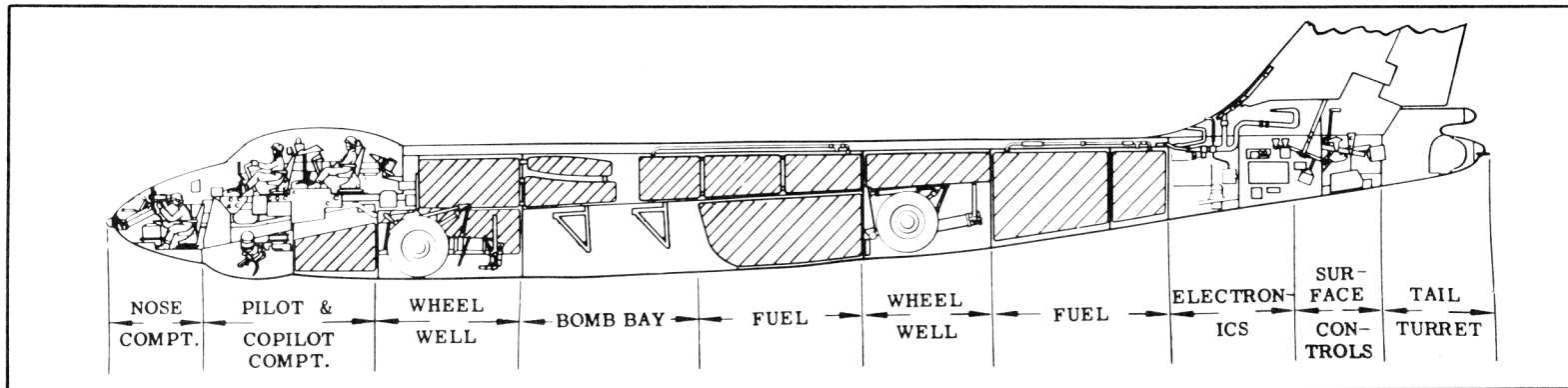


Wing Area . . . . . 1428 sq ft Wing Section . . . . . Boeing 145  
 Aspect Ratio . . . . . 9.43 M.A.C. . . . . 156"



Pressurized Area

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



**POWER PLANT**

Nr & Model . . . (6)J47-GE-25-25A  
 Mfr . . . . . General Electric  
 Engine Spec Nr . . . . . E-597A  
 Type . . . . . Axial Flow  
 Length . . . . . 144'  
 Diameter . . . . . 39.3"  
 Weight (dry) . . . . . 2707 lb  
 Tail Pipe . . . . . Fixed Area  
 Augmentation . . . . . Water/Alcohol  
 ATO  
 Nr & Model (M-15) . . . (30)16NS1000  
 Mfr . . . . . Phillips Petroleum  
 Weight (loaded) . . . . . 133.4 lb ea  
 or  
 Nr & Model . . . . . (19)15KS1000  
 Mfr . . . . . Aerojet  
 Weight (loaded) . . . . . 142 lb ea  
 \*See note d, 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) . . . . . 30,000  
 Duration (sec) . . . . . 16  
 or  
 Thrust (lb) . . . . . 19,000  
 Duration (sec) . . . . . 15

**DIMENSIONS**

Wing  
 Span . . . . . 116.0'  
 Incidence . . . . . 2°45'  
 Dihedral . . . . . 0°  
 Sweepback (LE) . . . . . 36°37'  
 Length . . . . . 107.1'  
 Height . . . . . 28.0'  
 Tread (outrigger) . . . . . 44.3'

*Mission and Description*

Navy Equivalent: None Mfr's Model: 450-157-35

The principal mission of the B-47E-IV is the destruction by bombs of land or naval materiel objectives.

The normal crew consists of pilot, co-pilot and observer. The observer's duties are navigation, bombing and operating of radar equipment. Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, 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 sections of the right and left wings. Solid propellant rockets are installed externally for assist take-off with a droppable rack.

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*

The B-47E-IV airplane differs from the Basic B-47E-II by the strengthening of the landing gear to permit heavier take-off weights. Data is shown for the test article (862nd B-47E). The modification is effective on the 862nd and subsequent aircraft.

Delivery date of first B-47E-IV . . . . . Feb 55

**WEIGHTS**

Loading	Lb	L. F.
Empty . . . . .	79,074 (E)	
Basic . . . . .	81,044 (E)	
Design . . . . .	125,000	3.0
Combat . . . . .	*133,030	
Max T. O. . . . .	†230,000	2.0
Max In-Flight . . . . .	‡221,000	2.0
Max Land . . . . .	†180,000	

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

**F U E L**

Location	No. Tanks	Gal
Fwd, Main* . . . . .	1	2930
Fwd, Aux . . . . .	1	990
Center Main* . . . . .	1	2810
Bomb Bay . . . . .	1	3230
Aft Main* . . . . .	1	3430
Wing, Drop . . . . .	2	3390
AFT Tank . . . . .	1	1220
		Total 18,000
Grade . . . . .		JP-4
Specification . . . . .		MIL-F-5624A

**OIL**

Wing Panel . . . . .	6	(tot) 56.4
Grade . . . . .		1005
Specification . . . . .		MIL-L-6081A
WATER/ALCOHOL		
Wg, inbd . . . . .	6	600
*Self-sealing except for 3 cells in forward main tank		

**B O M B S**

Nr	Class (lb)
1 . . . . .	Special Weapon

See Listings on Page 6, note c.

**G U N S**

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

**C A M E R A S**

Nr	Type	Lens
1 . . . . .	K-38	36"
One of the following may be substituted:		
1 . . . . .	K-37	12"
1 . . . . .	K-38	24"
1 . . . . .	K17C	24", 12", 6"
1 . . . . .	K-22A	24", 12", 6"

Camera station is located in the lower aft portion of the fuselage aft of the bomb bay.

**ELECTRONICS**

UHF Command . . . . .	AN/ARC-27
Omni-Drec, Rec'vr . . . . .	AN/ARN-14
Bombing-Nav, Radar . . . . .	MA-7A
Fire Control System . . . . .	A-5 or MD-4
Rendezvous Equip . . . . .	
	AN/APN-76A or AN/APN-69
Interphone . . . . .	AN/AIC-10
IFF . . . . .	AN/APX-25 or AN/APX-6A
Glide Path Rec'vr . . . . .	AN/ARN-18
Radio Compass . . . . .	AN/ARN-6
ECM . . . . .	*(2) AN/ALT-6
Marker Beacon . . . . .	AN/ARN-12
Emergency Keyer . . . . .	AN/ARA-26
Chaff Dispenser . . . . .	AN/ALE-1

continued on pg 6, note (e)

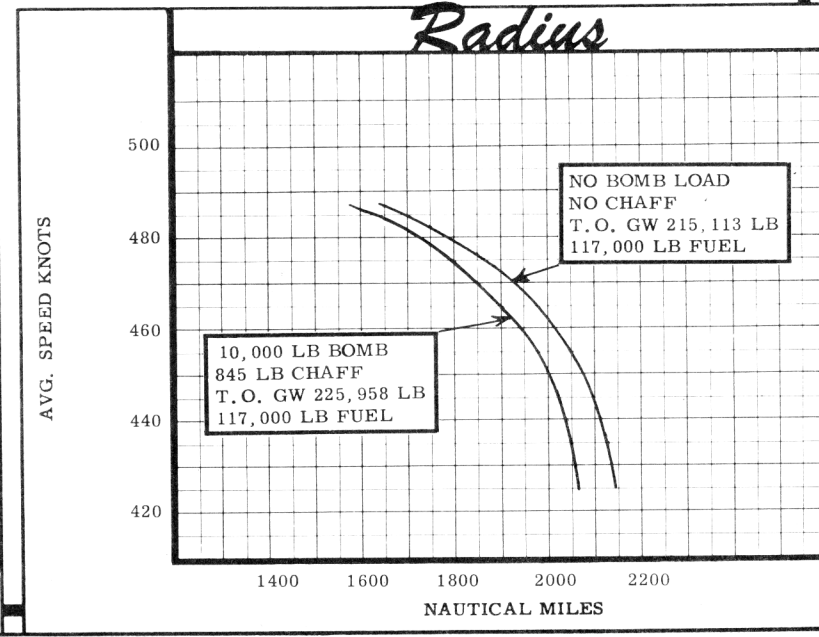
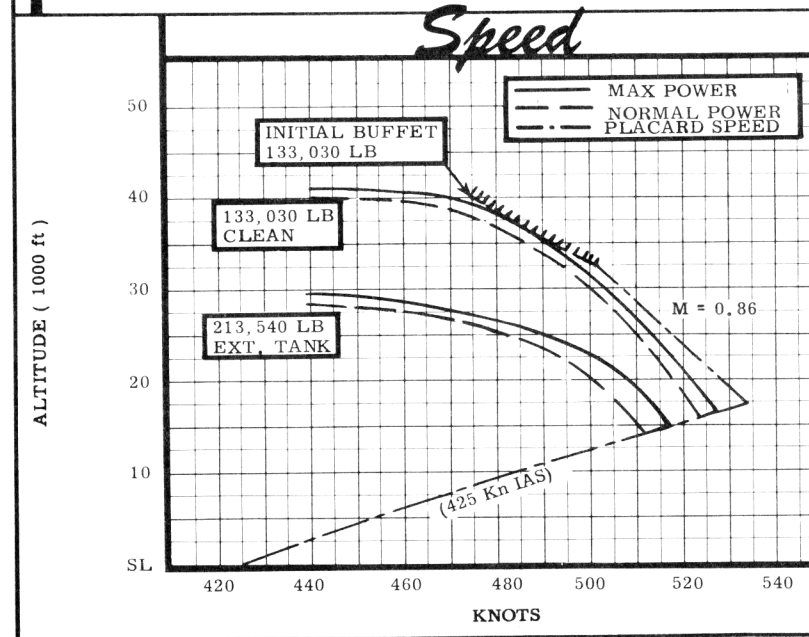
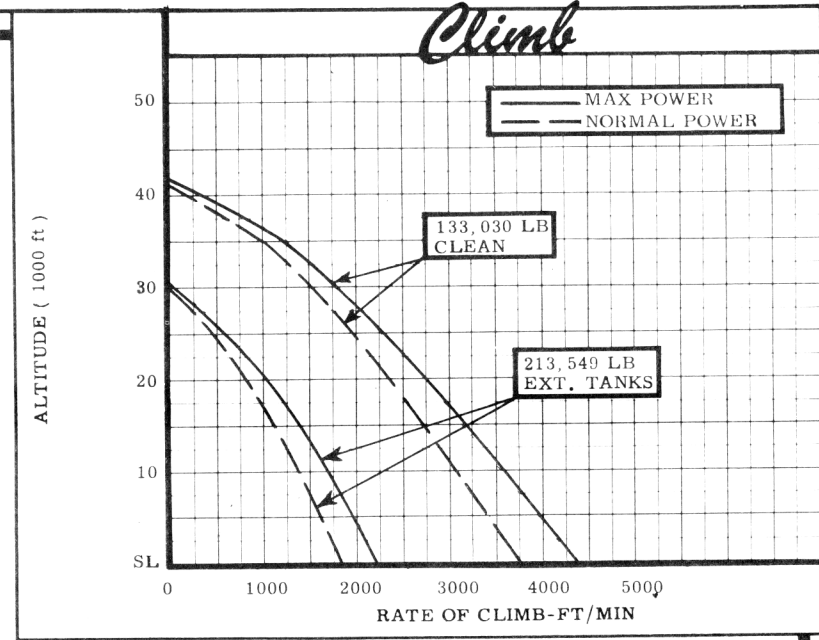
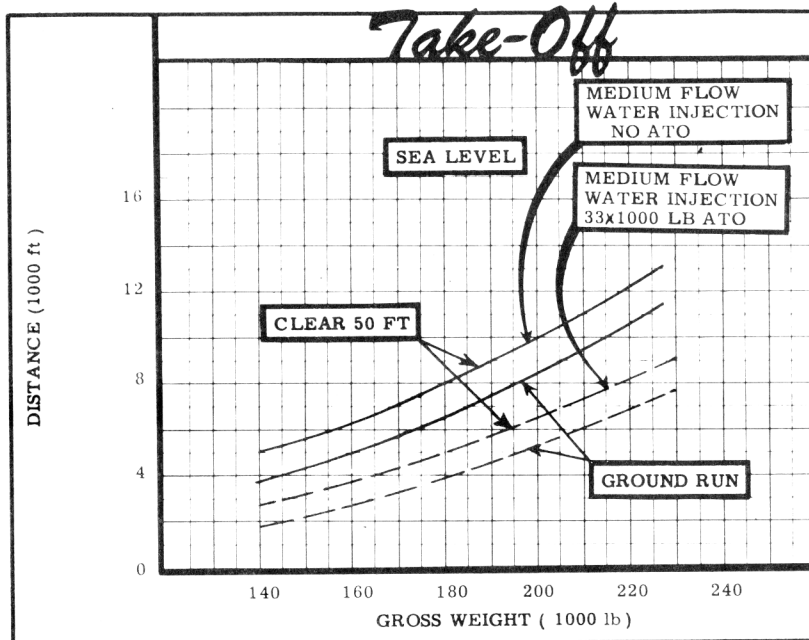
# Loading and Performance - Typical Mission

C O N D I T I O N S			BASIC MISSION	DESIGN BOMB LOAD	CRUISE CEILING	FERRY RANGE
			I	II	III	IV
TAKE-OFF WEIGHT	⑤	(lb)	225,958	230,000	225,958	215,113
Fuel at 6.5 lb/gal (grade JP-4)		(lb)	117,000	113,030	117,000	117,000
Payload (Bombs)		(lb)	10,000	18,000	10,000	None
Payload (Chaff)		(lb)	845	845	845	None
Wing loading	⑧	(lb/sq ft)	149.6	152.4	149.6	142.5
Stall speed (power off)	⑧	(kn)	166.1	167.6	166.1	162.1
Take-off ground run at SL	①⑦	(ft)	10,400	10,900	10,400	9200
Take-off ground run with ATO	①⑥	(ft)	7350	7700	7350	6350
Take-off to clear 50 ft	①⑦	(ft)	12,000	12,550	12,000	10,750
Take-off to clear 50 ft with ATO	①⑥	(ft)	8800	9200	8800	7750
Rate of climb at SL	②③	(fpm)	1850	1800	1850	1950
Rate of climb at SL (one engine out)	②②	(fpm)	1670	1610	1670	1720
Time: SL to 20,000 ft	②	(min)	11.2	11.4	11.2	10.3
Time: SL to Cruise Alt	②	(min)	19.4	19.6	22.4	18.8
Service ceiling (100 fpm)	⑧③	(ft)	29,500	29,000	29,500	30,400
Service ceiling (one engine out)	⑧②	(ft)	25,000	24,500	25,000	26,000
COMBAT RANGE	④	(n. mi.)	2050	1940	1760	4340
COMBAT RADIUS	④	(n. mi.)	435	436	475	434
Average cruise speed		(kn)	27,000	26,700	29,000	28,350
Initial cruising altitude		(ft)	466	466	475	-----
Target speed		(kn)	37,350	36,550	37,300	-----
Target altitude		(ft)	43,500	43,550	46,750	43,500
Final cruising altitude		(ft)	9.42	8.94	7.49	10.02
Total mission time		(hr)				
COMBAT WEIGHT		(lb)	133,030	130,485	133,330	93,990
Combat altitude		(ft)	37,350	36,550	37,300	43,500
Combat speed	②③	(kn)	483	488	483	486
Combat climb	②	(fpm)	850	1050	850	1000
Combat ceiling (500 fpm)	②	(ft)	39,300	39,600	39,250	46,500
Service ceiling (100 fpm)	③	(ft)	40,500	40,900	40,450	47,600
Service ceiling (one engine out)	②	(ft)	38,500	39,100	38,500	46,000
Max rate of climb at SL	②	(fpm)	4350	4450	4350	6130
Max speed at 16,300 ft	②③	(kn)	528	528	528	528
Basic speed at 35,000 ft	②③	(kn)	490	491	490	494
LANDING WEIGHT		(lb)	93,990	93,785	93,990	93,990
Ground roll at SL		(ft)	4600	4600	4600	4600
Ground roll (auxiliary brake)	⑩	(ft)	2600	2600	2600	2600
Total from 50 ft		(ft)	5500	5500	5500	5500
Total from 50 ft (auxiliary brake)	⑩	(ft)	3500	3500	3500	3500

**NOTES**

- |   |  |   |
|---|--|---|
| <p>① Take-off power</p> <p>② Maximum power</p> <p>③ Normal power</p> <p>④ Detailed descriptions of RADIUS and RANGE missions given on page 6.</p> | <p>⑤ Volume limited, Includes ATO and water-alcohol.</p> <p>⑥ 33 bottles ATO, medium flow water injection, (see note (d), page 6)</p> <p>⑦ No ATO, medium flow water injection</p> | <p>⑧ Values quoted are for T.O. weight less 7109 lb ATO and 5300 lb water and alcohol.</p> <p>⑨ Placard speed.</p> <p>⑩ Brake chute deployed at touchdown</p> |
|---|--|---|

**PERFORMANCE BASIS:**  
 (a) Data Source: Flight test  
 (b) Performance is based on powers shown on page 6.



**N O T E S**

FORMULA: RADIUS MISSIONS I & II

Take-off and climb on course to initial cruising altitude. Cruise out at long range speeds and altitudes, dropping external tanks when empty. Climb to cruise ceiling and conduct a 15 minute level-flight bomb run at normal rated thrust. Drop bomb load and chaff and conduct 2 minutes evasive action and 8 minutes escape at normal rated thrust. Return to base at long range speeds and altitudes. Range-free allowances are fuel for 5 minutes at normal rated thrust at sea level for take-off allowance, 2 minutes at normal rated thrust at combat altitude for evasive action, and 30 minutes at maximum endurance airspeeds at sea level plus 5% of initial fuel load for landing reserve.

FORMULA: RADIUS MISSION III

Take-off and climb on course to initial cruising altitude. Cruise out at normal rated thrust at cruise ceiling, dropping external tanks when empty. Conduct a 15 minute level flight bomb run, drop bomb load and chaff, and conduct 2 minutes evasive action at normal rated thrust. Return to base at normal rated thrust at cruise ceiling. Range-free allowances are as specified for Radius Missions I and II.

FORMULA: RANGE MISSION IV

Take-off and climb on course to initial cruising altitude. Cruise out at long range speeds and altitudes, dropping external tanks when empty. Land at remote base with only reserve fuel remaining. Range-free allowances are fuel for 5 minutes at normal rated thrust at sea level for take-off allowance and 30 minutes at maximum endurance airspeeds at sea level plus 5% of initial fuel load for landing reserve.

GENERAL DATA

(a) Thrust values shown on page 3 are engine manufacturer's guaranteed ratings. Thrust values used in performance calculations are as follows:

(6) J47-GE-25 & -25A			
S. L. Static	LB	RPM	MIN
T.O:	7200	7950	5
Max:	5640	7800	30
Nor:	5270	7630	Cont

(b) For detail planning, refer to Technical Order 1B-47-E-1 and latest applicable technical orders.

(c) The following loadings reflect the capabilities of the B-47E-IV (Heavyweight) airplane utilizing general purpose bombs:

SHORT BOMB BAY Hi-Density Kit		SHORT BOMB BAY Lo-Density Kit	
No. . . . .	Class (lb)	No. . . . .	Class (lb)
	WW II (Box Fin) Not Carried		WW II (Box Fin) Not Carried
	INTERIM (Conical Fin)		INTERIM (Conical Fin)
3 . . . . .	2000	3 . . . . .	2000
6 . . . . .	1000	4 . . . . .	1000
13 . . . . .	500 (T-127)	4 . . . . .	500 (T-127)
14 . . . . .	500 (M-123)	8 . . . . .	500 (M-123)
	NEW SERIES		NEW SERIES
6 . . . . .	750 Chem. Cluster	4 . . . . .	750 Chem. Cluster
7 . . . . .	750	4 . . . . .	750

- The Short Bomb Bay Hi-Density Kits are adaptable on all aircraft.
- The Short Bomb Bay Lo-Density Kit can be utilized only in airplanes 617 thru 730; airplanes 1 thru 616 have provisions for this kit but must be modified to accept it.

(d) The displacement rack must be utilized in carrying maximum complement of (19)15KS1000 or the (30)16NS1000 M-15 bottles ATO. (Manufactured by Phillips Petroleum).

(e) Electronics continued from page 3:

- HF Liaison . . . AN/ARC-21, AN/ARC-65
- Warning Radar . . . . . AN/APS-54
- DF Group . . . . . AN/ARA-25
- Gun Laying Radar . . . . . AN/APG-32
- ECM (2) Various combinations of AN/ALT-6, AN/ALT-6A, AN/ALT-7 and AN/ALT-8
- TACAN . . . . . AN/ARN-21

PERFORMANCE REFERENCE:

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

REVISION BASIS:

To reflect current characteristics and performance data.