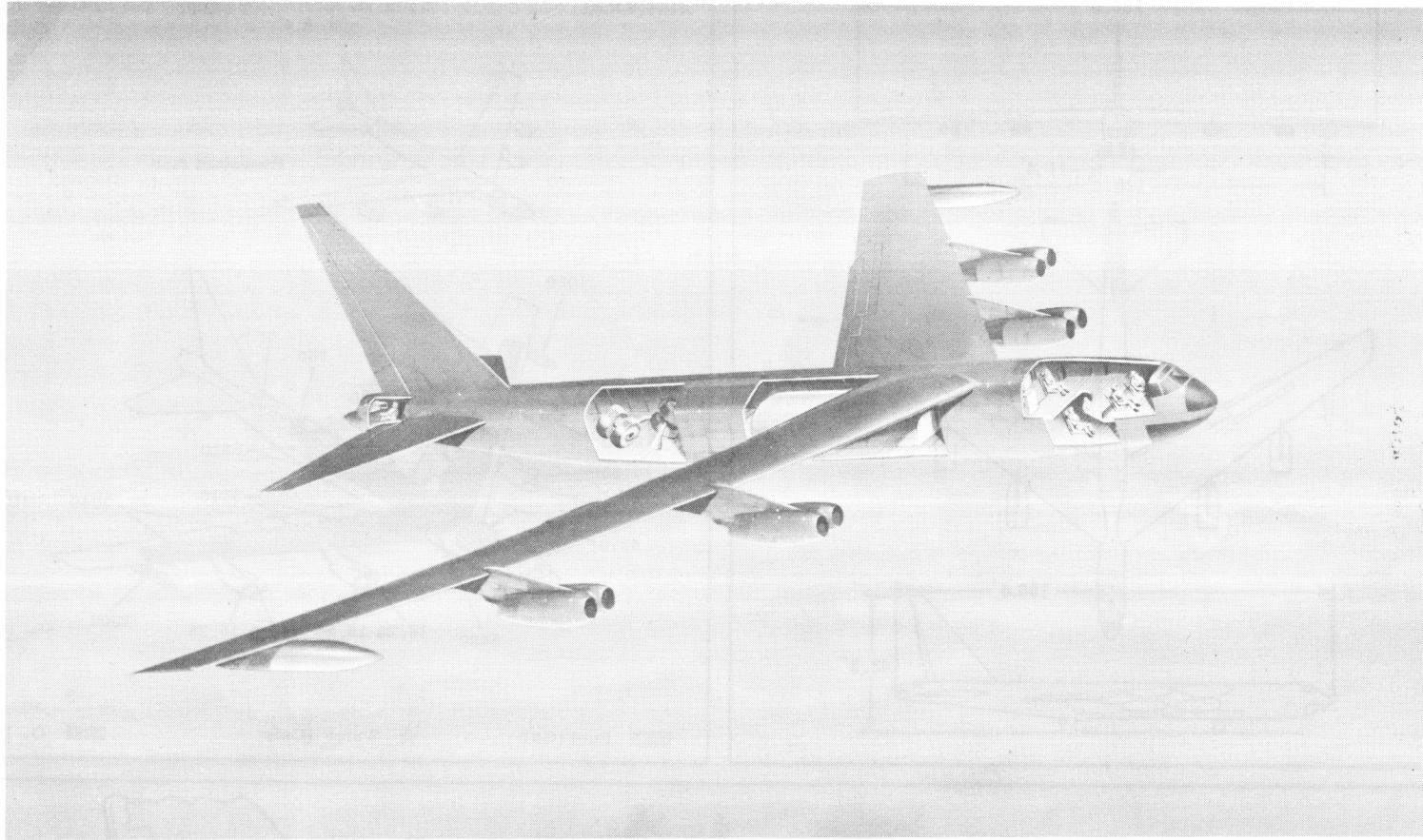


A1  
B-52B/char  
SERVICE



# Standard Aircraft Characteristics

BY AUTHORITY OF  
THE SECRETARY  
OF THE AIR FORCE

**B-52B**  
**STRATOFORTRESS**  
**Boeing**

EIGHT J57-P-19W, 29W, or 29WA  
PRATT & WHITNEY

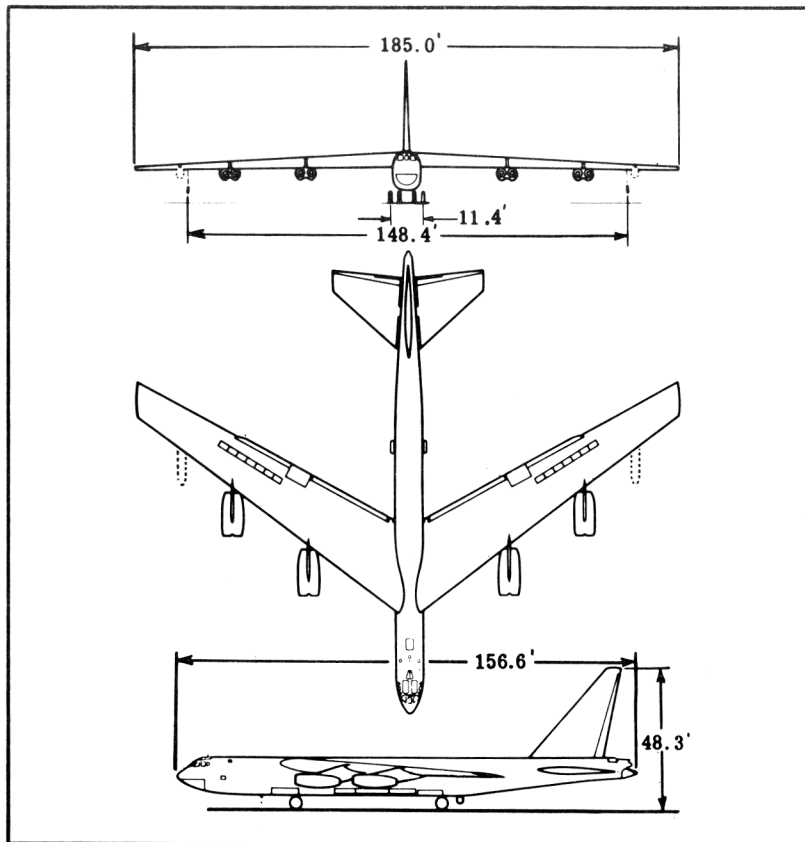
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B-52B

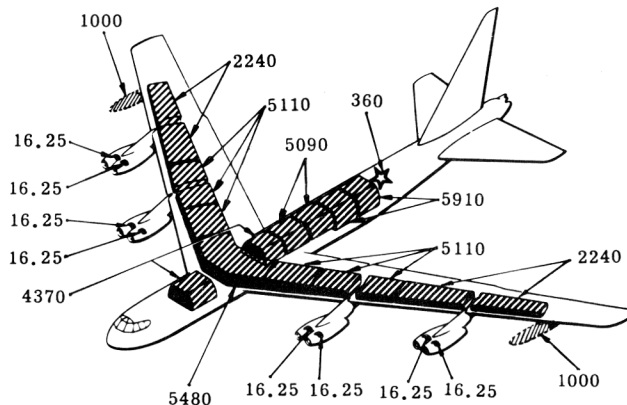
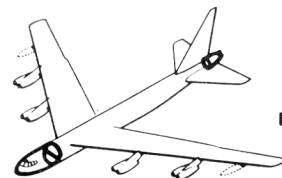
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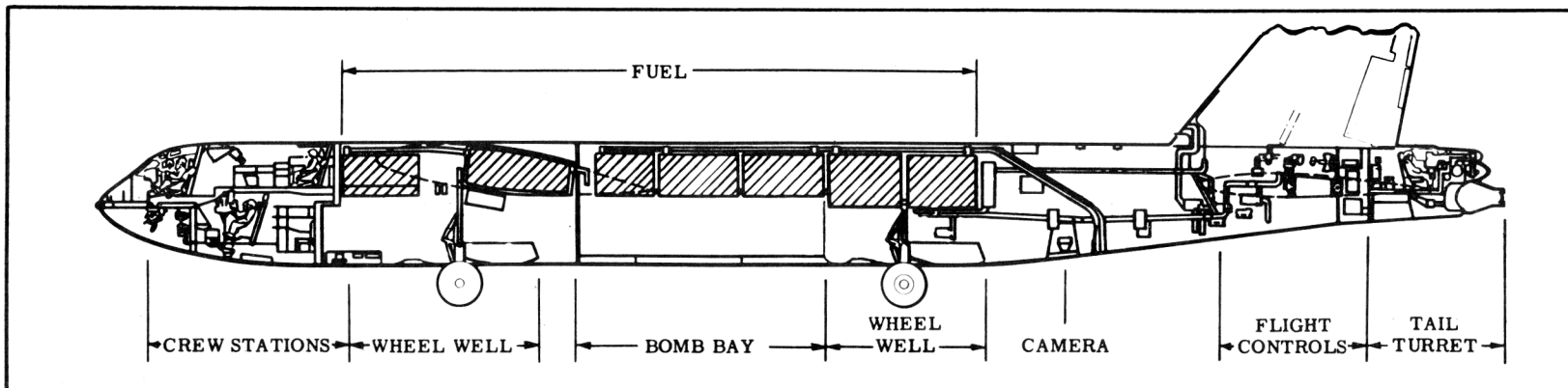
57W-4984



Wing Area . . . . . 4000 sq ft Wing Section (root) . . . BAC 233 19.31  
 Aspect Ratio . . . . . 8.55 (tip) . . . BAC 236 9.56  
 M. A. C. . . . . 275.5"



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



**POWER PLANT**

Nr & Model . . . . . (8)J57-P-19W,  
 or -29W, -29WA  
 Mfr . . . . . Pratt & Whitney  
 Engine Spec No. . . . . 1649G  
 Type . . . . . Axial  
 Length . . . . . 157.7"  
 Diameter . . . . . 40.5"  
 Weight (dry) . . . . . J57-P-19W \*3970 lb  
 Tail Pipe . . . . . Fixed Area  
 Augmentation . . . . . Water

Note: At present there are no re-  
 quirements for ATO.

\*J57-P-29W, 29WA . . . . . 4150 lb

**ENGINE RATINGS**

S, L, Static LB - \*\*RPM - MIN

Max: \*12, 100 - 6450/9900 - 5

Mil: 10, 500 - 6150/9900 - 30

Nor: 9000 - 5900/9650 - Cont

\* Wet

\*\* First figure represents low pres-  
 sure spool; second figure repre-  
 sents high pressure spool

\*J57-P-29W engine, Max  
 T.O. rating 11, 500 lb

**DIMENSIONS**

Wing  
 Span . . . . . 185.0'  
 Dihedral (chord plane) . . . . . 2°30'  
 Incidence (root) . . . . . 6°  
 Sweepback (LE) . . . . . 36°54'  
 Length . . . . . 156.6'  
 Height . . . . . 48.3'  
 Height (fin folded) . . . . . 20.8'  
 Tread (outrigger) . . . . . 148.4'  
 (main gear) . . . . . 11.4'

*Mission and Description*

Navy Equivalent: None

Mfr's Model: 464-201-3

The principal mission of the B-52B aircraft is the destruction of sur-  
 face objects.

The normal crew of six consists of pilot, co-pilot, (2) bombardier-  
 navigators, ECM operator and tail gunner.

Automatic cabin pressurization, heating and ventilation are provided  
 for crew comfort during normal and combat operation.

Ejection seats for emergency escape are afforded the crew except for  
 the tail gunner who bails out after jettisoning the tail section containing  
 the gun turret.

Flight control, throughout the speed range from limit dive speed to  
 landing speed, is accomplished by use of spoilers and ailerons on the  
 wing; elevators on an all-movable horizontal tail; and a rudder on a fixed  
 vertical tail surface. The spoilers also function as air brakes.

Air is bled off the engines for thermal anti-icing of the wings and tail  
 surface leading edges.

Other features are single-point ground and air refueling, braking  
 parachute for decreasing landing roll distance, and a crosswind landing  
 gear to aid in cross-wind take-off and landing.

The B-52B has provisions for the installation of the reconnaissance  
 capsule in the bomb bay.

Characteristics and performance are shown for B-52B's contained  
 within A. F. Serial Nos. 53-377 thru 53-398 with the -19W engines; B-52B's,  
 Serial Nos. 52-004 thru 53-376 have -1W engines. See note (d) page 6

*Development*

Design Initiated . . . . . Feb 51  
 First Flight . . . . . Dec 54  
 First delivery to SAC . . . . . Oct 55

**WEIGHTS**

| Loading    | Lb         | L. F. |
|------------|------------|-------|
| Empty      | 164,081(C) |       |
| Basic      | 167,210(C) |       |
| Design     | †430,000   | 2.0   |
| Combat     | **272,000  | 2.5   |
| Max T. O.  | **420,000  | 2.0   |
| Max In-Flt | †415,000   | 2.0   |
| Max Land   | 270,000    |       |

(C) Calculated

\* For Basic Mission

\*\* Excludes 3000 lb water

† Max taxi wt, 10,000 lb bomb

‡ Limited by structure

**F U E L**

| Location  | Nr | Tanks | Gal    |
|-----------|----|-------|--------|
| Wg, outbd | 2  |       | 4480   |
| Wg, ctr   | 1  |       | 5480   |
| Wg, inbd* | 4  |       | 10,220 |
| Fus, fwd* | 2  |       | 4370   |
| Fus, ctr* | 1  |       | 5090   |
| Fus, aft* | 1  |       | 5910   |
| Wg, drop  | 2  |       | 2000   |
|           |    | Total | 37,550 |

Grade . . . . . JP-4  
 Specification . . . . . MIL-F-5624

**OIL**

Nacelle . . . . . 8 (tot)130  
 Specification . . . . . MIL-L-7808A

**WATER**

Fus, aft . . . . . 1 360  
 \*Self-sealing

**ELECTRONICS**

UHF Command . . . . . AN/ARC-34  
 Liaison . . . . . AN/ARC-21X  
 IFF . . . . . AN/APX-25  
 Radar Beacon . . . . . AN/APN-76A  
 ECM Trans (2) . . . . . AN/APT-8  
 ECM Trans (1) . . . . . AN/APT-9  
 ECM Trans (2) . . . . . AN/ALT-7  
 ECM Recv'r (1) . . . . . AN/APR-14  
 Interphone . . . . . AN/AIC-10  
 Bombing Sys . . . . . K-3A  
 Nav. Recv'r . . . . . AN/ARN-14  
 Fire Control Sys. . . . . A-3A or MD-5  
 ECM Recv'r (1) . . . . . AN/APR-9

See page 6 for additional equipment

**B O M B S**

| Nr | Class (lb)                          |
|----|-------------------------------------|
|    | New Series                          |
| 27 | (Family of Clusters) . . . . . 1000 |
|    | Special Weapons                     |
| 2  | . . . . . MK-21                     |
| 1  | . . . . . MK-6                      |

Max Bomb Load (1) . . . . . 43,000 lb

Note: Structural provisions for  
 50,000 lb bomb; space and  
 structural provisions for  
 GAM-63

**G U N S**

| Nr | Type  | Size | Rds ea | Location  |
|----|-------|------|--------|-----------|
| 4  | M-3   | 50   | 600    | Tail, tur |
|    |       |      |        | or        |
| 2  | M24A1 | 20mm | 400    | Tail, tur |

**C A M E R A S**

| Nr | Type  | Lens            |
|----|-------|-----------------|
| 1  | K-38  | 36"             |
|    | or    |                 |
| 1  | K-17C | 6"              |
|    | or    |                 |
| 1  | K-22  | 6"              |
| 1  | O-15A | Radar Recording |

*Green Book*

*5th Ed Appendix Nr 9*

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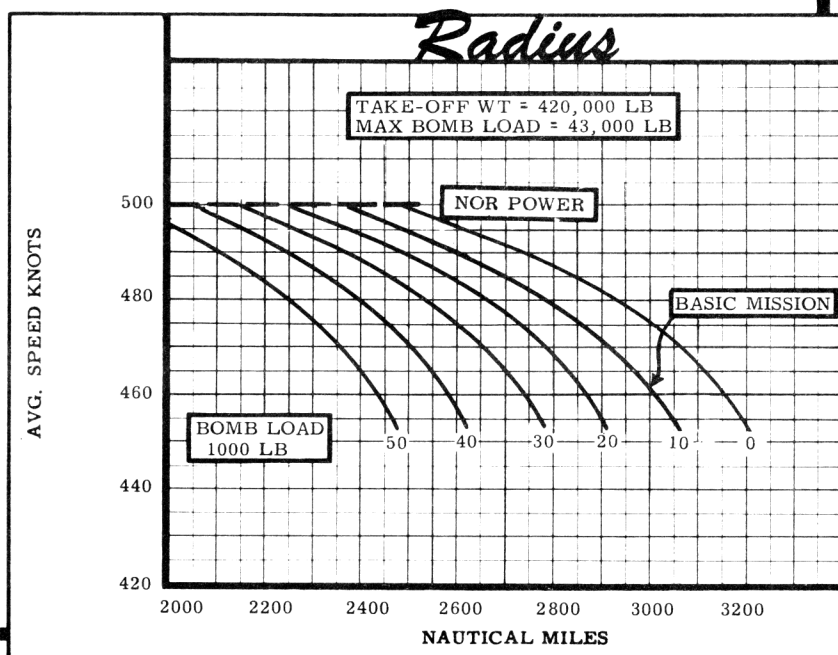
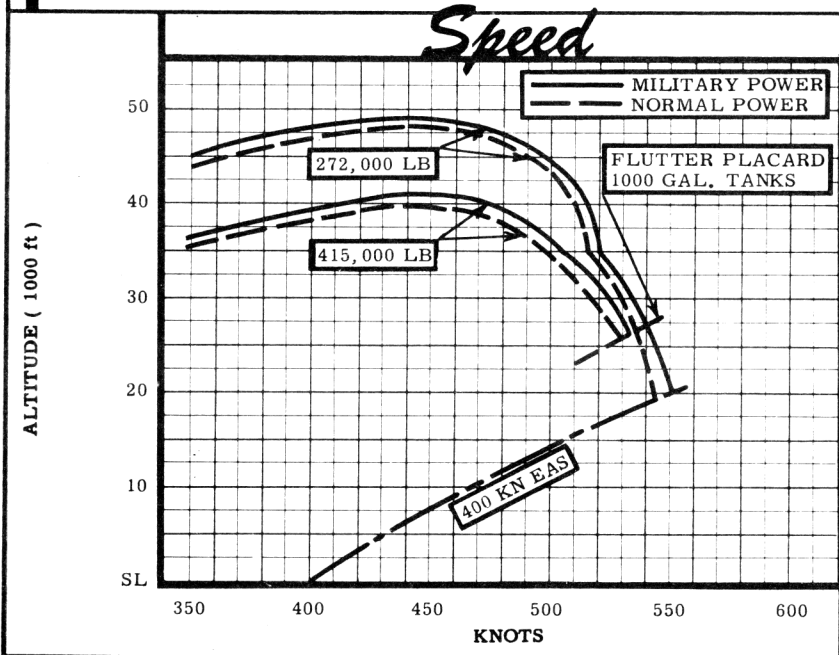
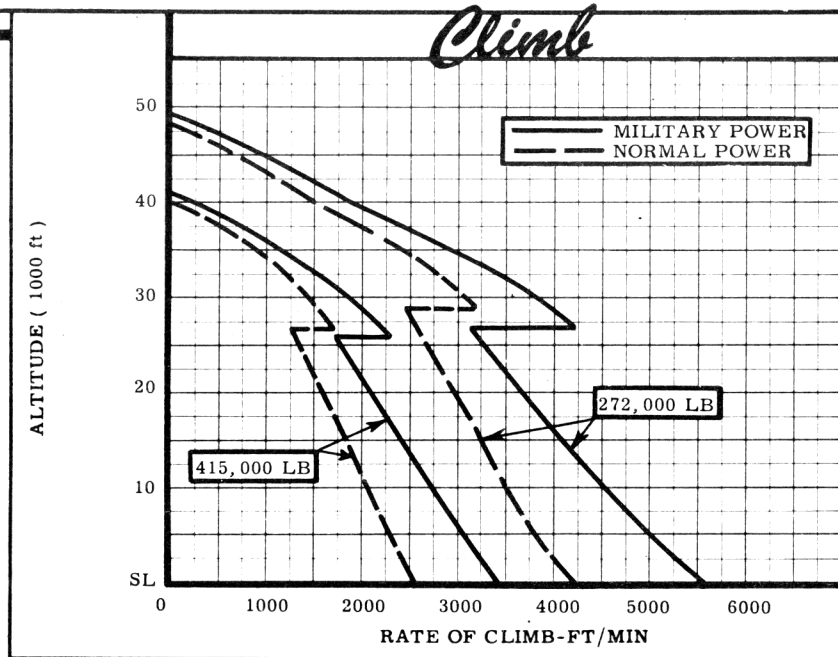
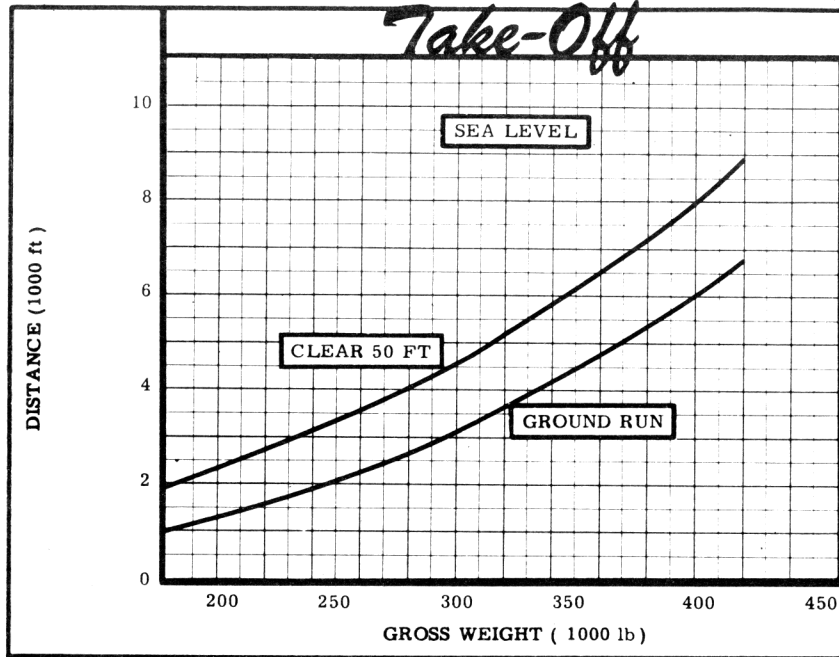
# Loading and Performance—Typical Mission

| C O N D I T I O N S                  |            | BASIC MISSION | DESIGN MISSION | MAX BOMB MISSION | FERRY RANGE |
|--------------------------------------|------------|---------------|----------------|------------------|-------------|
|                                      |            | I             | II             | III              | IV          |
| TAKE-OFF WEIGHT                      | (lb)       | 420,000       | 420,000        | 420,000          | 414,810     |
| Fuel at 6.5 lb/gal (grade JP-4)      | (lb)       | 239,265       | 240,665        | 205,440          | 244,075     |
| Payload (Bombs)                      | (lb)       | 10,000        | 8600           | 43,000           | None        |
| Wing loading                         | (lb/sq ft) | 103.8         | 103.8          | 103.8            | 103.7       |
| Stall speed (power off)              | (kn)       | 141           | 141            | 141              | 141         |
| Take-off ground run at SL            | (ft)       | 6600          | 6600           | 6600             | 6580        |
| Take-off to clear 50 ft              | (ft)       | 8680          | 8680           | 8680             | 8660        |
| Rate of climb at SL                  | (fpm)      | 2520          | 2520           | 2520             | 2525        |
| Rate of climb at SL (one engine out) | (fpm)      | 2750          | 2750           | 2750             | 2760        |
| Time: SL to 20,000 ft                | (min)      | 9.6           | 9.6            | 9.6              | 9.5         |
| Time: SL to 30,000 ft                | (min)      | 15.9          | 15.9           | 15.9             | 15.6        |
| Service ceiling (100 fpm)            | (ft)       | 39,350        | 39,350         | 39,350           | 39,350      |
| Service ceiling (one engine out)     | (ft)       | 38,900        | 38,900         | 38,900           | 38,900      |
| COMBAT RANGE                         | (n. mi)    | —             | —              | —                | 6380        |
| COMBAT RADIUS                        | (n. mi)    | 3070          | 3090           | 2580             | —           |
| Average cruise speed                 | (kn)       | 453           | 453            | 453              | 453         |
| Initial cruising altitude            | (ft)       | 34,950        | 34,950         | 34,950           | 35,200      |
| Target speed                         | (kn)       | 476           | 476            | 476              | —           |
| Target altitude                      | (ft)       | 45,750        | 45,800         | 44,700           | —           |
| Final cruising altitude              | (ft)       | 51,000        | 51,000         | 51,100           | 51,000      |
| Total mission time                   | (hr)       | 13.56         | 13.69          | 11.43            | 14.15       |
| COMBAT WEIGHT                        | (lb)       | 272,000       | 272,700        | 254,900          | 186,400     |
| Combat altitude                      | (ft)       | 45,750        | 45,800         | 44,700           | 51,000      |
| Combat speed                         | (kn)       | 496           | 495            | 506              | 507         |
| Combat climb                         | (fpm)      | 790           | 770            | 1250             | 1210        |
| Combat ceiling (500 fpm)             | (ft)       | 47,100        | 47,000         | 48,350           | 54,900      |
| Service ceiling (100 fpm)            | (ft)       | 47,700        | 47,650         | 48,950           | 55,700      |
| Service ceiling (one engine out)     | (ft)       | 46,050        | 46,000         | 47,300           | 53,750      |
| Max rate of climb at SL              | (fpm)      | 5550          | 5540           | 6000             | 8350        |
| Max speed at optimum alt             | (kn/ft)    | 551/20,300    | 551/20,300     | 552/20,400       | 553/20,500  |
| Basic speed at 35,000 ft             | (kn)       | 520           | 520            | 522              | 525         |
| LANDING WEIGHT                       | (lb)       | 186,200       | 186,300        | 185,300          | 186,400     |
| Ground roll at SL                    | (ft)       | 2230          | 2230           | 2210             | 2230        |
| Ground roll (auxiliary brake)        | (ft)       | 2000          | 2000           | 1990             | 2000        |
| Total from 50 ft                     | (ft)       | 4210          | 4220           | 4180             | 4230        |
| Total from 50 ft (auxiliary brake)   | (ft)       | 4000          | 4010           | 3980             | 4020        |

NOTES

- ① Take-off power
- ② Military power
- ③ Normal power
- ④ Detailed descriptions of RADIUS and RANGE missions given on page 6.
- ⑤ Limited by structure
- ⑥ With drag chute
- ⑦ Excludes 3000 lb water
- ⑧ Limited by fuel capacity
- ⑨ Initial buffet, flaps down, S.L.
- ⑩ In-flight weight limited to 415,000 lb.
- ⑪ Braking force limited to 40,000 lb.

PERFORMANCE BASIS:  
 (a) Data source: Flight tests  
 (b) Performance is based on powers shown on page 3.



1 OCT 58

*Green Book*

*59wc-4984*

**N O T E S**FORMULA: RADIUS MISSIONS I, II & III

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed, increasing altitudes with decreasing weight; external tanks are dropped when empty. Climb so as to reach cruise ceiling 15 minutes from target. Run-in to target at normal power, drop bombs, conduct 2 minutes evasive action and 8 minutes escape at normal power. Cruise back to base at long range speed and optimum altitudes; as an alternate, a 45,000 foot ceiling may be maintained on the return leg with no radius penalty. Range-free allowances are fuel for 5 minutes at normal power for take-off allowance, fuel for 2 minutes at normal power for evasive action, and fuel for 30 minutes maximum endurance at sea level plus 5% of the initial fuel load for landing reserve.

FORMULA: RANGE MISSION IV

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed, increasing altitude with decreasing weight; external tanks are dropped when empty. Land at remote base with only reserve fuel remaining. Range-free allowances are fuel for 5 minutes at normal power for take-off allowance and fuel for 30 minutes maximum endurance at sea level plus 5% of the initial fuel load for landing reserve.

GENERAL DATA:

(a) The landing reserve for the Basic Mission is equivalent to 750 nautical miles range at optimum speed and altitude.

(b) In-flight weight of 415,000 lb is pending approval by WADC.

(c) The following electronic equipment is supplemental to that shown under "Electronics" on page 3:

|                               |               |
|-------------------------------|---------------|
| Glide Path Receiver . . . . . | (1) AN/ARN-18 |
| Marker Beacon . . . . .       | (1) AN/ARN-12 |
| Early Warning . . . . .       | (1) AN/APS-54 |
| Chaff Dispenser . . . . .     | (1) AN/ALE-1  |

(d) O. W. E. increases approximately 2000 lb on B52 airplanes utilizing J57-P-29, -29WA engines resulting in a minor range decrease for a given T. O. weight.

PERFORMANCE REFERENCE:

Boeing document D-15134B, "Substantiating Data Report - Models B-52B (J57-P-19W engines), B-52C and B-52D Standard Aircraft Characteristics Charts", dated 31 December 1956.

REVISION BASIS:

To reflect change in security classification.

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