**Mission and Description**

Navy Equivalent: None

Mfr's Model: 464-201-3

The principal mission of the B-52B aircraft is the destruction of surface 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 balls 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 wings; elevators on an all-moving 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 aid to assist in cross wing take-off and landing.

The B-52B has the reconnaissance capsule conversion provision.

Characteristics and performance are shown on B-52B's with all compared with B-52C's in A.F. Serial Nos. 52-004 thru 53-376 with the -1WA engines. B-52B's Serial Nos. 53-377 thru 53-498 have the -18W, 29W or -29WA engines.

**Development**

Design Initiated: ........................ Feb 51

First Flight: .................................. Dec 54

First Delivery to SAC ...................... Oct 55

**WEIGHTS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Lb</th>
<th>L. F.</th>
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<tbody>
<tr>
<td>Empty</td>
<td>164,081</td>
<td>(c)</td>
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<tr>
<td>Basic</td>
<td>187,210</td>
<td>(d)</td>
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<tr>
<td>Design</td>
<td>183,900</td>
<td>(e)</td>
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<tr>
<td>Combat</td>
<td>232,000</td>
<td>(f)</td>
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<tr>
<td>Max T. O.</td>
<td>240,800</td>
<td>(g)</td>
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<td>Max In-Flt.</td>
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<td>(h)</td>
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<tr>
<td>Max Land.</td>
<td>270,600</td>
<td>(i)</td>
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</table>

(c) Calculated

* For Basic Mission

** ENGINES ***

- Excludes 3000 lb water

† Max taxi wt, 10,000 lb bomb

‡ Limited by structure

** FUEL**

<table>
<thead>
<tr>
<th>Description</th>
<th>Gal</th>
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<tbody>
<tr>
<td>Location</td>
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<td>Nr Tanks</td>
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<tr>
<td>Wg, outbd.</td>
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<tr>
<td>Wg, ctr</td>
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<tr>
<td>Wg, inbd*</td>
<td>4.440</td>
</tr>
<tr>
<td>Fus, fwd*</td>
<td>4.440</td>
</tr>
<tr>
<td>Fus, str*</td>
<td>4.440</td>
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<tr>
<td>Fus, aft*</td>
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<tr>
<td>Wg, drop</td>
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<td>Total</td>
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** Specification **

- MIL-F-5624

** ELECTRONICS**

- AN/ARC-34
- AN/ARC-21X
- AN/APX-23
- AN/APX-76A
- AN/APX-8
- AN/APX-9
- AN/ALT-8
- AN/APX-14
- AN/ALT-7
- AN/ALT-7
- AN/APX-14
- AN/APX-14
- AN/APX-14
- AN/APX-14
- AN/APX-14
- AN/APX-14

See page 6 for additional equip.
<table>
<thead>
<tr>
<th>CONDITIONS</th>
<th>BASIC MISSION</th>
<th>DESIGN LOAD</th>
<th>MAX BOMB LOAD</th>
<th>FERRY RANGE</th>
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<tbody>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td>420,000</td>
<td>420,000</td>
<td>420,000</td>
<td>414,810</td>
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<td>Fuel at 6.5 lb/gal (grade JP-4)</td>
<td>239,265</td>
<td>240,665</td>
<td>205,440</td>
<td>244,075</td>
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<tr>
<td>Payload (Bombs)</td>
<td>10,000</td>
<td>8600</td>
<td>43,000</td>
<td>None</td>
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<tr>
<td>Wing loading</td>
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<td>Stall speed (power off)</td>
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<td>Take-off ground run at SL</td>
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<td>7200</td>
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<tr>
<td>Take-off to clear 50 ft</td>
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<td>9650</td>
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<td>9400</td>
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<tr>
<td>Rate of climb at SL</td>
<td>2110</td>
<td>2110</td>
<td>2110</td>
<td>2120</td>
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<tr>
<td>Rate of climb at SL (one engine out)</td>
<td>2300</td>
<td>2300</td>
<td>2300</td>
<td>2300</td>
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<tr>
<td>Time: SL to 20,000 ft</td>
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<td>Time: SL to 30,000 ft</td>
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<td>38,350</td>
<td>38,350</td>
<td>38,350</td>
<td>38,400</td>
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<tr>
<td>Service ceiling (one engine out)</td>
<td>37,750</td>
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<td>37,750</td>
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<tr>
<td>COMBAT RANGE</td>
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<tr>
<td>COMBAT RADIUS</td>
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<tr>
<td>Average cruise speed</td>
<td>453</td>
<td>453</td>
<td>453</td>
<td>453</td>
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<tr>
<td>Initial cruising altitude</td>
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<td>35,300</td>
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<tr>
<td>Target speed</td>
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<tr>
<td>Target altitude</td>
<td>45,150</td>
<td>45,150</td>
<td>44,900</td>
<td>505</td>
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<tr>
<td>Final cruising altitude</td>
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<tr>
<td>Total mission time</td>
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<td>13.91</td>
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<table>
<thead>
<tr>
<th>CONDITIONS</th>
<th>BASIC MISSION</th>
<th>DESIGN LOAD</th>
<th>MAX BOMB LOAD</th>
<th>FERRY RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMBAT WEIGHT</td>
<td>272,000</td>
<td>272,800</td>
<td>255,000</td>
<td>186,040</td>
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<tr>
<td>Combat altitude</td>
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<td>45,100</td>
<td>43,950</td>
<td>51,000</td>
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<tr>
<td>Combat speed</td>
<td>494</td>
<td>494</td>
<td>305</td>
<td>1088</td>
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<tr>
<td>Combat climb</td>
<td>760</td>
<td>740</td>
<td>1150</td>
<td>54,500</td>
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<td>Combat ceiling (500 fps)</td>
<td>46,550</td>
<td>46,500</td>
<td>47,800</td>
<td>55,350</td>
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<tr>
<td>Service ceiling (100 fps)</td>
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<td>47,200</td>
<td>47,650</td>
<td>53,210</td>
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<td>Service ceiling (one engine out)</td>
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<td>46,650</td>
<td>7110</td>
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<tr>
<td>Max rate of climb at SL</td>
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<td>5090</td>
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<td>Max speed at optimum alt</td>
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<td>546/19,800</td>
<td>546/19,800</td>
<td>547/19,900</td>
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<td>Basic speed at 35,000 ft</td>
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<td>518</td>
<td>520</td>
<td>522</td>
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<tr>
<td>LANDING WEIGHT</td>
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<td>186,300</td>
<td>185,300</td>
<td>186,040</td>
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<tr>
<td>Ground roll at SL</td>
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<td>2250</td>
<td>2210</td>
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<tr>
<td>Ground roll (auxiliary brake)</td>
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<td>2020</td>
<td>2000</td>
<td>2020</td>
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<td>Total from 380 ft</td>
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<td>3880</td>
<td>3870</td>
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<td>Total from 50 ft (auxiliary brake)</td>
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<td>3680</td>
<td>3650</td>
<td>3680</td>
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</tbody>
</table>

**NOTES**
- Take-off power
- Normal power
- Detailed descriptions of RADIUS and RANGE missions given on page 6.
- Limited by structure
- With drag chute
- Does not include 3000 lb water
- Limited by fuel capacity
- Initial buffet, flaps down, SL
- In flight weight limited by structure to 415,000 lb

**PERFORMANCE BASIS**
(a) Data source: Flight tests of B-52A
(b) Performance is based on powers shown on page 3.
NOTES

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 into 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 3 minutes at normal power for take-off allowances, 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 3 minutes at normal power for take-off allowances 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 758 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

PERFORMANCE REFERENCE:


REVISION BASIS:

To reflect modification to Bomb Block page 3.