

H-1  
B-52B/char  
SERVICE

~~C O N F I D E N T I A L~~

CLASSIFICATION CANCELLED  
(OR CHANGED TO *Unclassified*)  
BY AUTHORITY OF *Assoc. for Judges*  
BY *Assoc. for Judges* and *R. Donelson*  
DATE *27 July 70*  
INDIVIDUAL OR WRITTEN AUTHORITY  
(DATE)  
NAME & GRADE OF INDIVIDUAL MAKING CHANGE



# Standard Aircraft Characteristics

BY AUTHORITY OF  
THE SECRETARY  
OF THE AIR FORCE

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

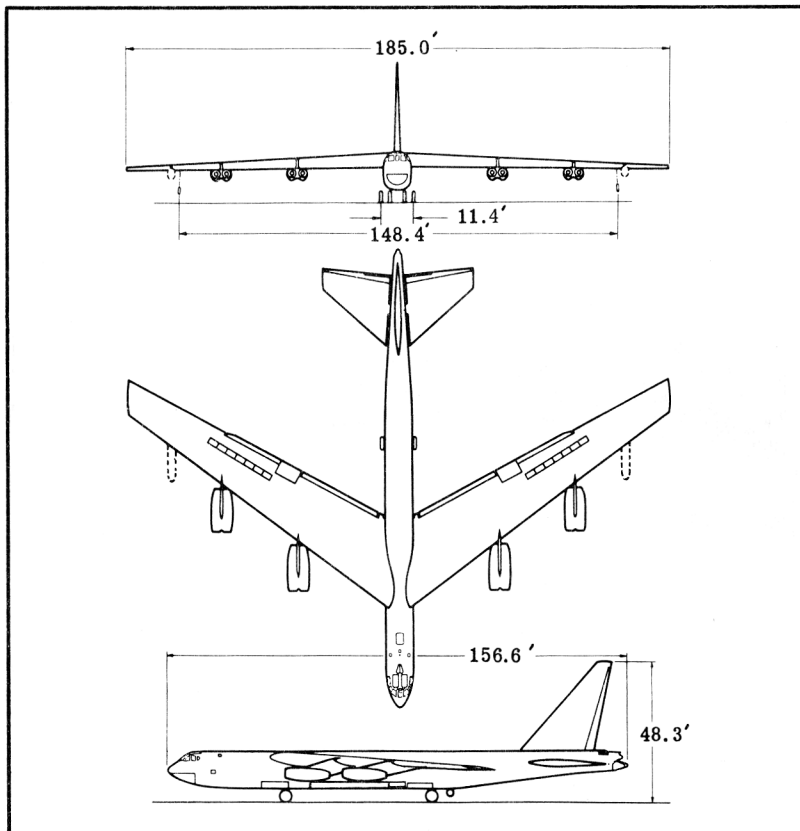
EIGHT J57-P-IWA  
PRATT & WHITNEY

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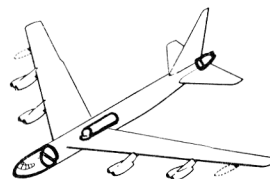
~~C O N F I D E N T I A L~~

B-52B  
(Reconn. Version) -1WA Engine

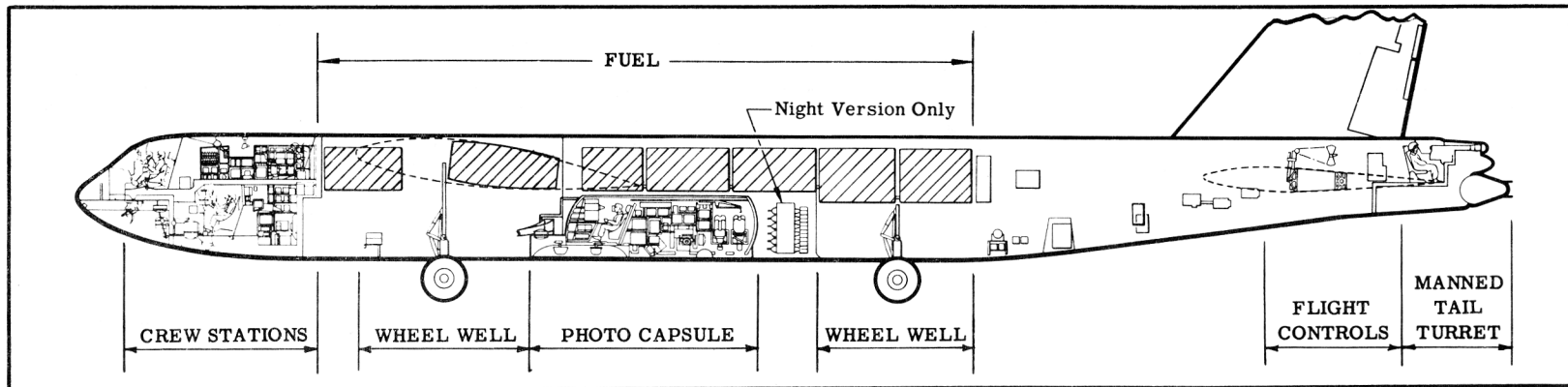
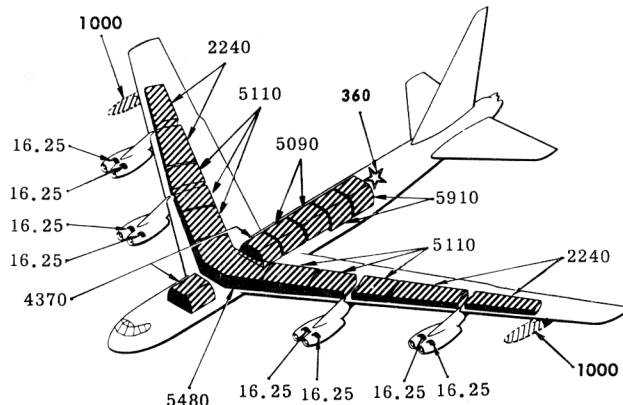
5<sup>th</sup> Ed addn #5



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''



Pressurized Area



B-52B

(Reconn. Version) - 1WA Engine

### POWER PLANT

Nr. & Model . . . . . (8) J57-P-1-W  
 Mfr . . . . . Pratt & Whitney  
 Engine Spec Nr. . . . . A-1638D  
 Type . . . . . Axial  
 Length . . . . . 157.7"  
 Diameter . . . . . 40.5"  
 Weight (dry) . . . . . 4210 lb  
 Tail Pipe . . . . . Fixed Area  
 Augmentation . . . . . Water

Note: At present there are no requirements for ATO

### ENGINE RATINGS

S. L. S. LB - \*\*RPM - MIN

Max: \*11,400 - 6450/9900 - 5  
 Mil: 9500 - 6030/9800 - 30  
 Nor: 8250 - 5770/9550 - Cont

\* Wet

\*\* First figure represents low pressure spool; second figure represents high pressure spool.

### DIMENSIONS

Wing  
 Span . . . . . 185.0'  
 Incidence (root) . . . . . 6°  
 Dihedral (chord plane) . . . . . 2°30'  
 Sweepback (LE) . . . . . 36°54'  
 Length . . . . . 156.6'  
 Height . . . . . 48.3'  
 Height (fin folded) . . . . . 20.0'  
 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 (Reconn Version) is day and night photo, weather and electronic reconnaissance.

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

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 the thermal anti-icing of the wings and tail surface leading edges.

Other features are, single-point ground and in-flight refueling, braking parachute for decreasing landing roll distance, and a steerable landing gear to aid in crosswind takeoff and landing.

The B-52B (Reconn Version) has the reconnaissance capsule installed in the bomb bay.

Characteristics and performance are shown for B-52B's contained within A. F. Serial Nos. 52-004 thru 53-376 with the -1WA engines. B-52B's, Serial Nos. 53-377 thru 53-398 have the -19W engines.

## Development

Design Initiated: . . . . . Apr 52  
 First Flight: . . . . . Jul 55  
 First Delivery to SAC . . . . . Jul 55

### B O M B S

Nr.	Type	Class (lb)
24	(M-120 Flash Bombs)	165

### G U N S

Nr.	Type	Size	Rds ea	Location
4	M-3	50	600	Tail, Tur
2	M24A1	20mm.	400	Tail, Tur

### C A M E R A S

Nr.	Type	Lens
Multi Camera Station		
4	K-38	36"
or		
1	K-38	12"
Tri Camera Station		
3	T-11	6"
or		
1	K-37 (Vertical)	12"
or		
1	K-36	24"
1	*O-15.	Radar recording

\*No fixed station

### W E I G H T S

Loading	Lb	L. F.
Empty	168,332(c)	
Basic	171,770(c)	
Design	† 430,000	2.0
Combat	*278,700	2.45
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. Rec'r . . . . . AN/ARN-14  
 Fire Control Sys . . . . . A-3A or MD-5  
 ECM Recv'r (1) . . . . . AN/APR-9

See page 7 for additional equip.

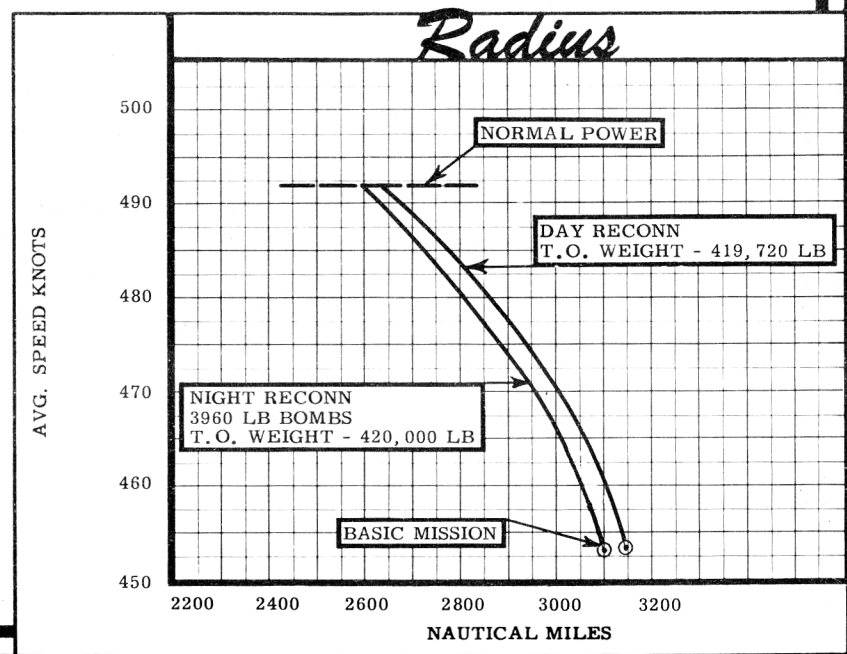
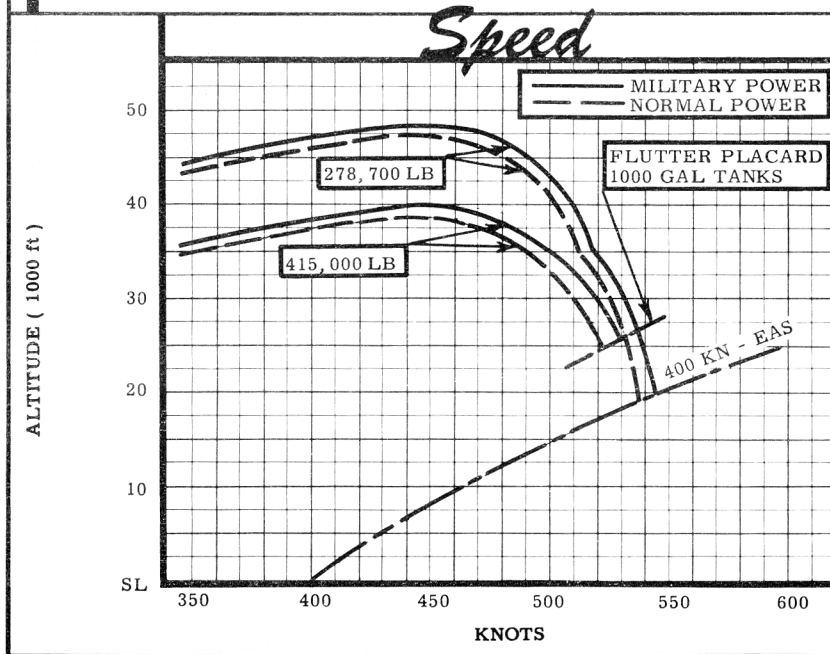
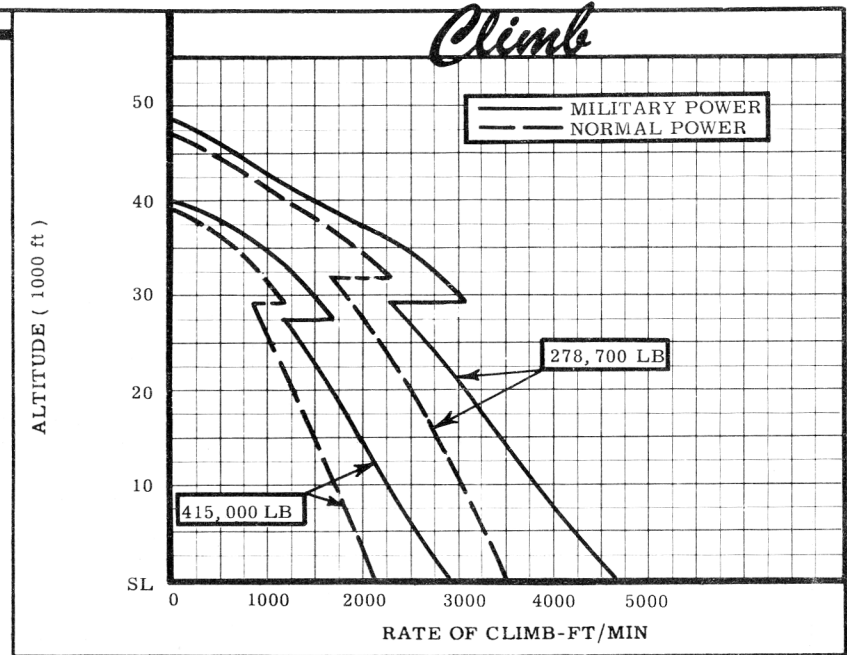
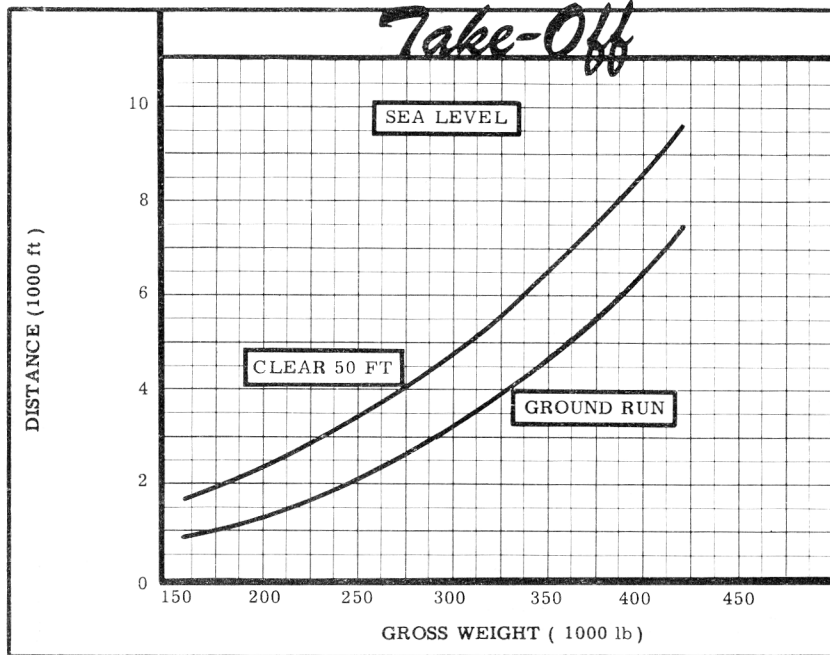
# Loading and Performance - Typical Mission

C O N D I T I O N S	BASIC MISSION		FERRY RANGE	
	NIGHT	DAY	NIGHT	DAY
TAKE-OFF WEIGHT ⑦ (lb)	420,000	419,720 ⑧	419,830 ⑧	244,075
Fuel at 6.5 lb/gal (grade JP-4) (lb)	240,285	244,075	244,075	None
Payload (Flashbombs) (lb)	3960	None	None	None
Wing loading (lb/sq ft)	103.8	103.8	103.8	103.8
Stall speed (power off) ⑩ (kn)	141	141	141	141
Take-off ground run at SL ① (ft)	7450	7450	7450	7450
Take-off to clear 50 ft ① (ft)	9650	9650	9650	9650
Rate of climb at SL ③ ⑩ (fpm)	2110	2110	2110	2110
Rate of climb at SL (one engine out) ② ⑩ (fpm)	2300	2300	2300	2300
Time: SL to 20,000 ft ③ (min)	11.4	11.4	11.4	11.4
Time: SL to 30,000 ft ③ (min)	20.0	20.0	20.0	20.0
Service ceiling (100 fpm) ③ ⑩ (ft)	38,350	38,350	38,350	38,350
Service ceiling (one engine out) ② ⑩ (ft)	37,750	37,750	37,750	37,750
COMBAT RANGE ④ (n. mi)	—	—	6347	—
COMBAT RADIUS ④ (n. mi)	3095	3150	—	—
Average cruise speed (kn)	453	453	453	453
Initial cruising altitude (ft)	35,000	35,050	35,050	35,050
Target speed ③ (kn)	476	476	476	476
Target altitude (ft)	45,050	45,200	45,200	45,200
Final cruising altitude (ft)	50,400	50,400	50,400	50,400
Total mission time (hr)	13.74	13.98	14.07	—
COMBAT WEIGHT (lb)	278,700	280,600	191,600	—
- Combat altitude (ft)	45,050	45,050	50,400	—
Combat speed ② (kn)	492	490	504	—
Combat climb ② (fpm)	650	622	1100	—
Combat ceiling (500 fpm) ② (ft)	46,050	45,900	53,900	—
Service ceiling (100 fpm) ③ (ft)	46,750	46,650	54,800	—
Service ceiling (one engine out) ③ (ft)	44,800	44,650	52,650	—
Max rate of climb at SL ② (fpm)	4640	4610	6920	—
Max speed at optimum alt ② ⑤ (kn/ft)	546/19,800	546/19,800	547/19,900	—
Basic speed at 35,000 ft ② (kn)	518	518	522	—
LANDING WEIGHT (lb)	191,400	191,500	191,600	—
Ground roll at SL (ft)	2350	2350	2350	—
Ground roll (auxiliary brake) ⑥ (ft)	2080	2080	2080	—
Total from 50 ft (ft)	3980	3980	3980	—
Total from 50 ft (auxiliary brake) ⑥ (ft)	3740	3740	3740	—

- N O T E S**
- 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 Does not include 3000 lb water
- ⑧ Limited by fuel capacity
- ⑨ Initial buffet, flaps down, S. L.
- ⑩ 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.



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**N O T E S**FORMULA: RADIUS MISSIONS I AND II

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. Climb so as to reach cruise ceiling 15 minutes before reaching target. Run in to target at normal power, drop flash bombs on night mission, 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 (4 engines operating) at sea level plus 5% of initial fuel load for landing reserve.

FORMULA: RANGE MISSION III

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 (four engines operating) at sea level plus 5% of the initial fuel load for landing reserve.

GENERAL DATA:

(a) Landing reserve for the Basic Mission is equivalent to 742 nautical miles at cruise altitude.

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




PERFORMANCE BASIS:

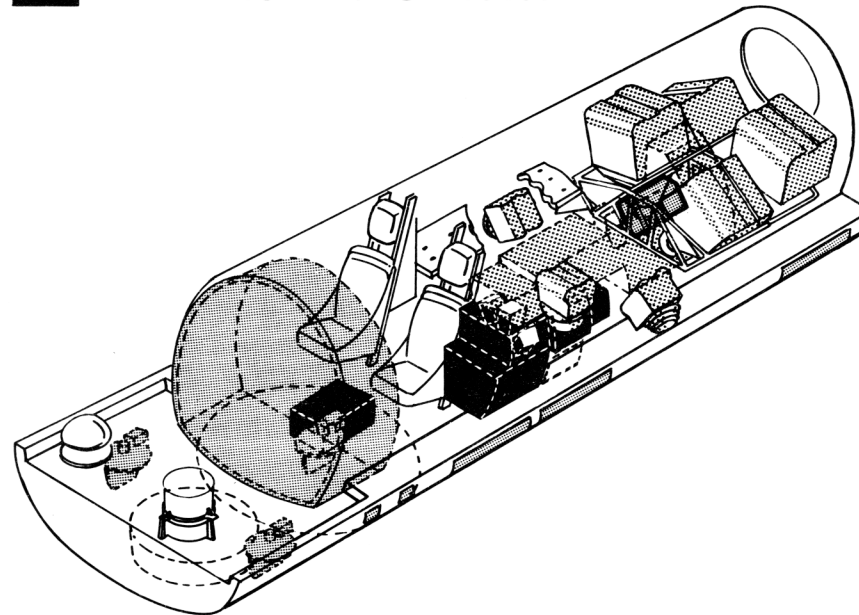
Boeing document D-13950B, "Substantiating Data Report - Models B 52A and B-52B Standard Aircraft Characteristics Charts", dated 24 January 1956.

REVISION BASIS:

To reflect minor changes.

**SUPPLEMENTAL**

-  Photo Reconnaissance
-  Electronic Reconnaissance
-  Weather Reconnaissance



The following Electronic equipment is supplemental to that shown under Electronics on Page 3.

	Carrier	
	Glide Path Rec. . . . (1) . . .	AN/ARN-18
	Marker Beacon . . . (1) . . .	AN/ARN-12
	Early Warning . . . (1) . . .	AN/APS-54
	Chaff . . . . . (1) . . . . .	AN/ALE-1
Capsule	Panoramic Receiver . (3) . . .	AN/APR-8B
	Direction Finder . . . (2) . . .	AN/ALA-6
	Pulse Analyzer . . . (2) . . .	AN/ALA-5
	Recorder . . . . . (2) . . . . .	AN/ANQ-1
	ECM Receiver . . . . (2) . . . . .	AN/APR-9
	ECM Receiver . . . . (1) . . . . .	AN/APR-14
	Interphone . . . . . (2) . . . . .	AN/AIC-10

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