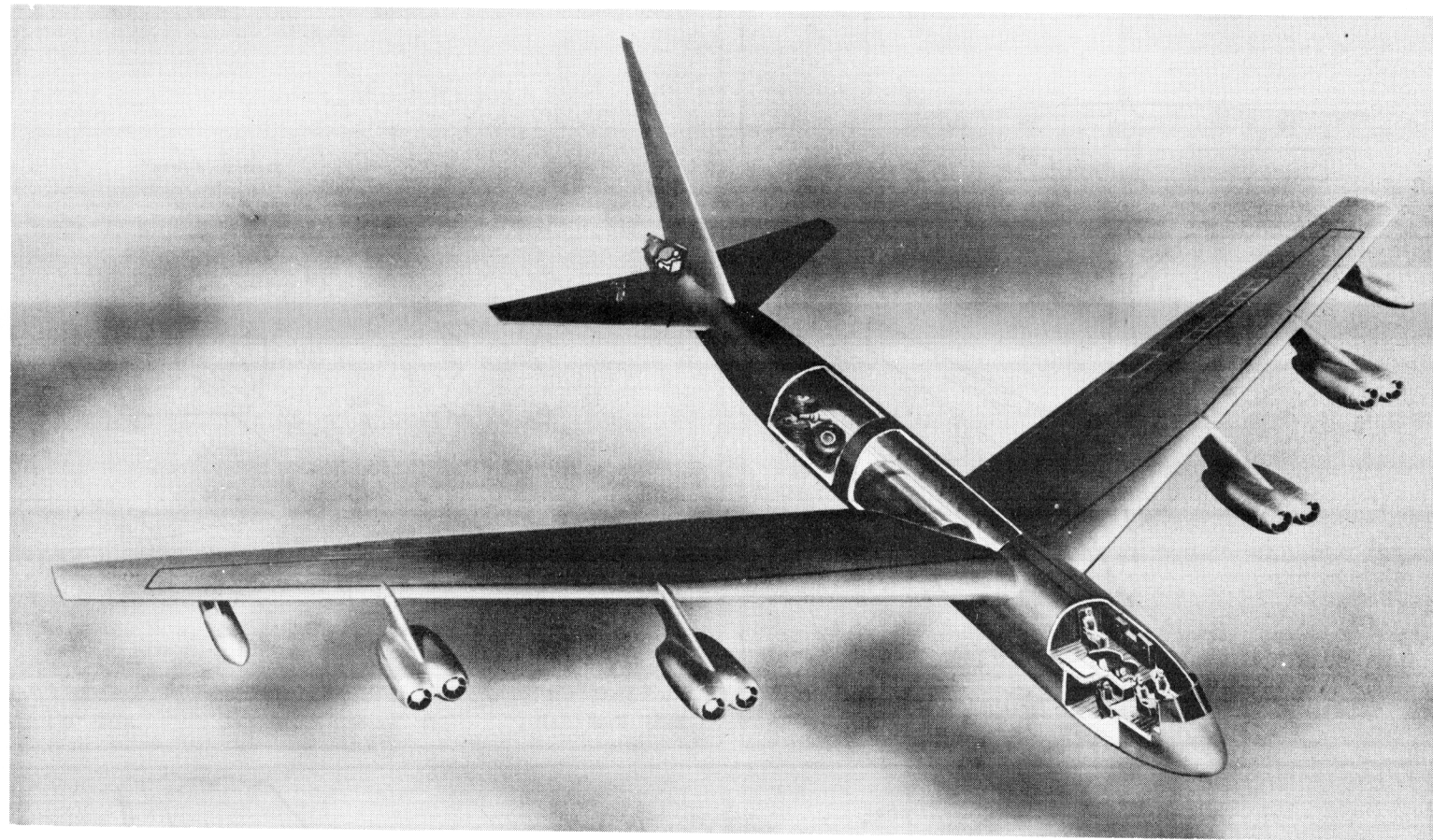


~~SECRET~~

A-1  
(R) B-52B/chan

SERVICE



# Standard Aircraft Characteristics

BY AUTHORITY OF  
THE SECRETARY  
OF THE AIR FORCE

## RB-52B STRATOFORTRESS

Boeing

EIGHT J57-P-1W

PRATT & WHITNEY

9 OCT 53  
REVISED

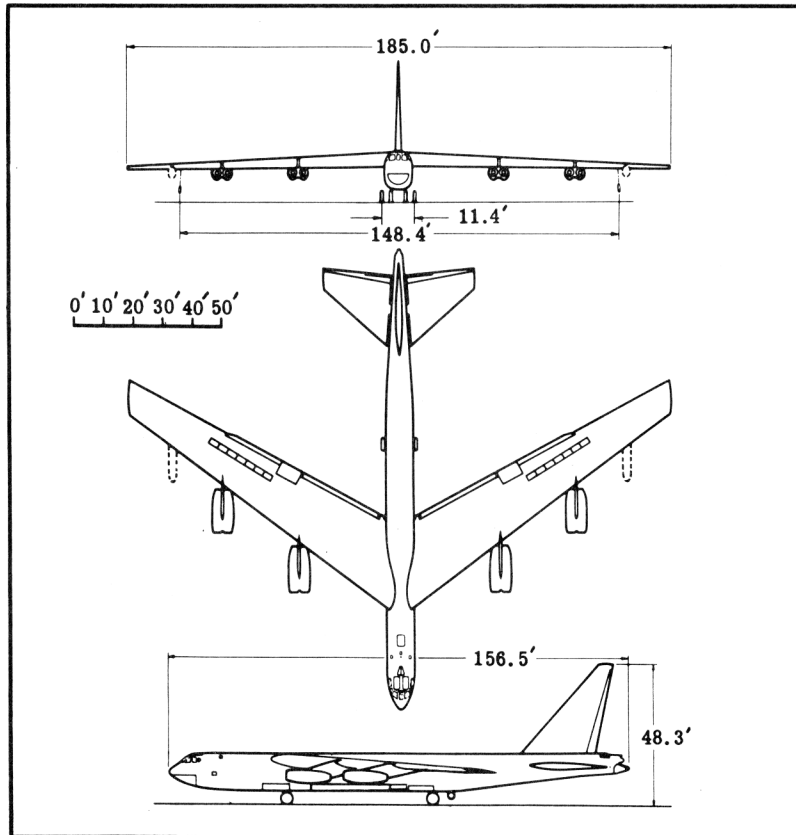
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RB-52B

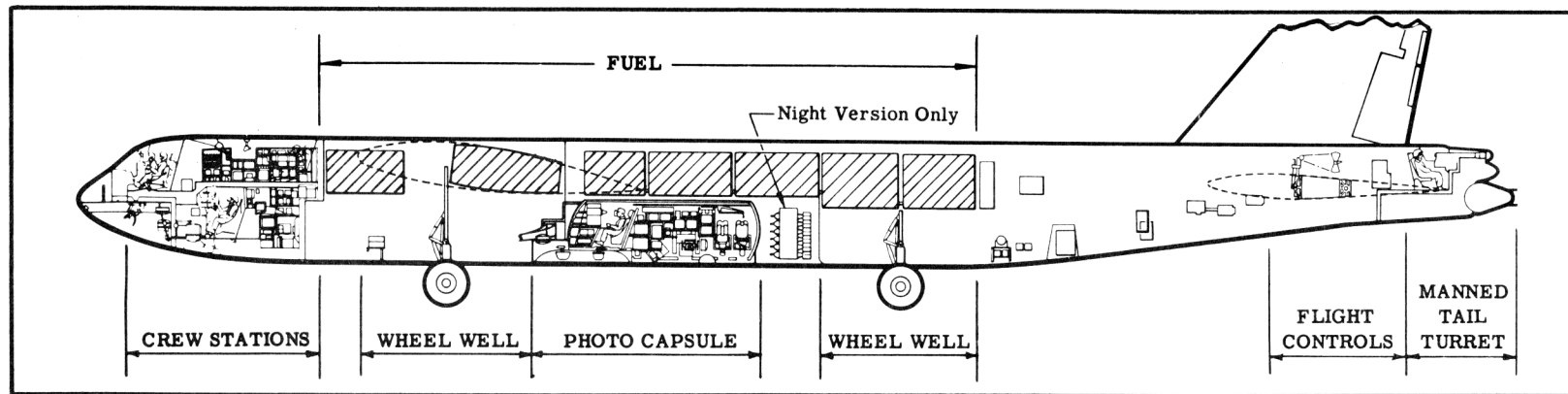
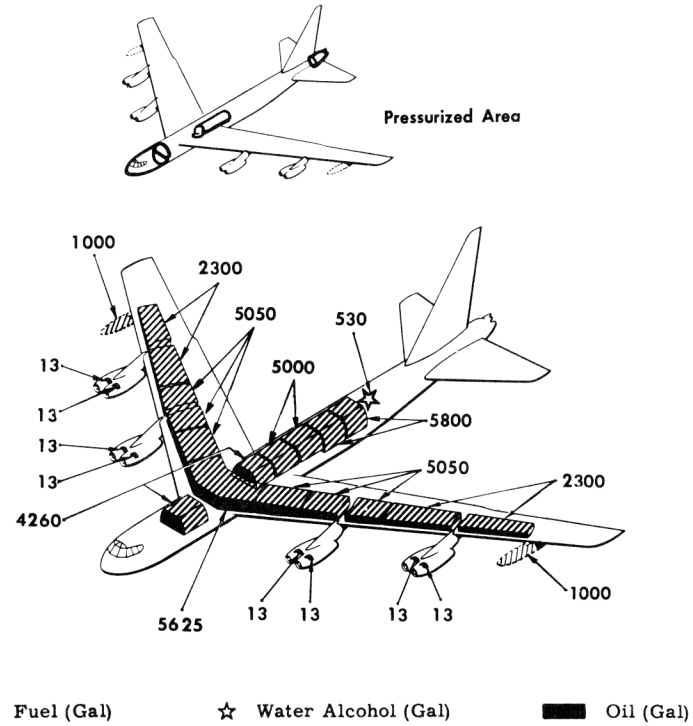
CLASSIFICATION CANCELLED  
(OR CHANGED TO *Unclassified*)  
BY AUTHORITY OF *DoD Dir 5200.10*  
(INDIVIDUAL OR WRITTEN AUTHORITY)  
*A.R. Lombard 29 Mar 67*

3rd Ed addn #6

5376-12001A



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"



RB-52B

**POWER PLANT**

No. & Model ..... (8) J57-P-1W  
 Mfr ..... Pratt & Whitney  
 Engine Spec No. .... A-1638  
 Type ..... Axial  
 Length ..... 163.6"  
 Diameter ..... 41.0"  
 Weight (dry) ..... 4085 lb  
 Tail Pipe ..... Fixed Area  
 Augmentation ..... Water

ATO

No. & Model ..... (4) 45KS5000  
 Mfr ..... Aerojet  
 Type ..... Solid

**ENGINE RATINGS**

S. L. S. LB - \*\*RPM - MIN  
 Max: \*11,100-6300/9950- 5  
 Mil: 9500-5950/9950- 30  
 Nor: 8250-5700/9720- Cont  
 \* Wet  
 \*\* First figure represents low pressure spool; second figure represents high pressure spool.

ATO

Thrust ..... (4) x 5000  
 Duration (sec) ..... 45

**DIMENSIONS**

Wing  
 Span ..... 185.0'  
 Incidence (root) ..... 6°  
 Dihedral (chord plane) ..... 2°30'  
 Sweepback (LE) ..... 36°54'  
 Length ..... 156.5'  
 Height ..... 48.3'  
 Tread - (outrigger) ..... 148.4'  
 (main gear) ..... 11.4'

*Mission and Description*

Navy Equivalent: None Mfr's Model: 464-201-1

The principal mission of the RB-52B 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 and speed to landing speed, is accomplished by use of spoilers, ailerons, flaperons on the wing, elevators on 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 to de-ice the wings and tail surface leading edges.

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

Solid fuel rockets for assist takeoff are installed on each side of the aft fuselage.

The RB-52B becomes a (Bomber version) when the capsule containing photographic, weather and electronic equipment is removed from the bomb bay.

*Development*

Design Initiated: ..... Apr 52  
 First Flight: ..... (est) Dec 54  
 First Acceptance: ..... (est) Dec 54

**WEIGHTS**

Loading	Lb	L. F.
Empty	167,424	
Basic	169,234	
Design	390,000	2.0
Combat	*264,610	2.6
Max T.O.	**390,000	2.0
Max Land	270,000	

(C) Calculated  
 \* For Basic Mission  
 \*\* Limited by structure; w/o ATO

**F U E L**

Location	No. Tanks	Gal
Wg, outbd	2	4600
Wg, ctr	1	5625
Wg, inbd*	4	10,100
Fus, fwd*	2	4260
Fus, ctr*	1	5000
Fus, aft*	1	5800
Wg, drop	2	2000
		Total 37,385
Grade		JP-4
Specification		MIL-F-5624

**OIL**

Nacelle	8	(tot) 104
Grade		synthetic
Specification		MIL-L-7808
<b>WATER</b>		
Fus, aft	1	530
*Self-Sealing		

**B O M B S**

No.	Type	Class (lb)
24	...	(M-120 Flash Bombs) .. 165

**G U N S**

No.	Type	Size	Rds ea	Location
4	M-3	50	600	Tail, Tur

**C A M E R A S**

No.	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

**ELECTRONICS**

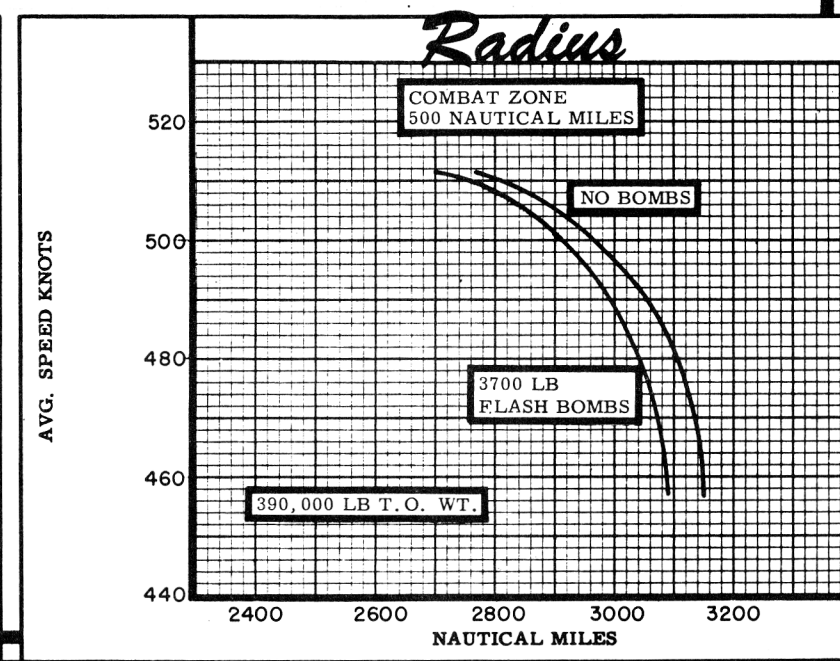
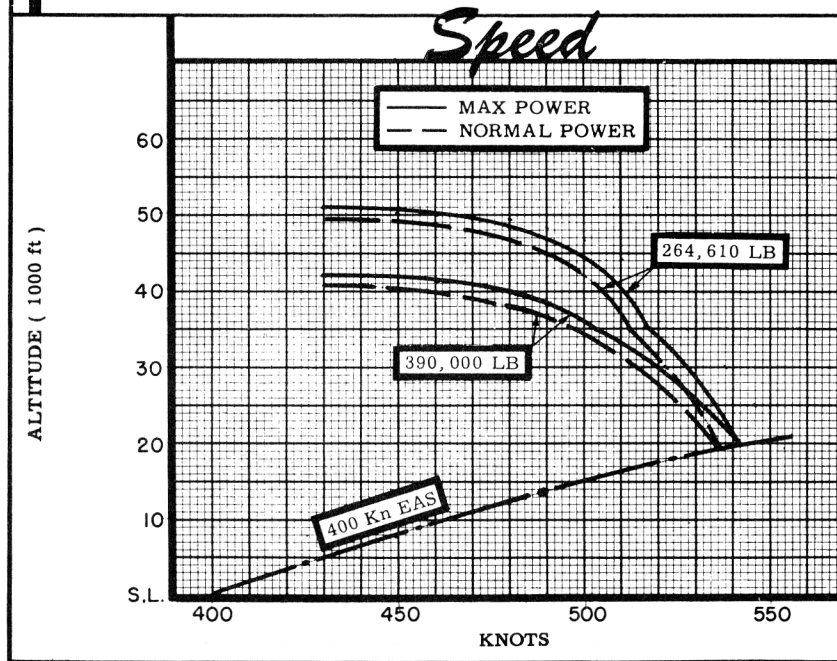
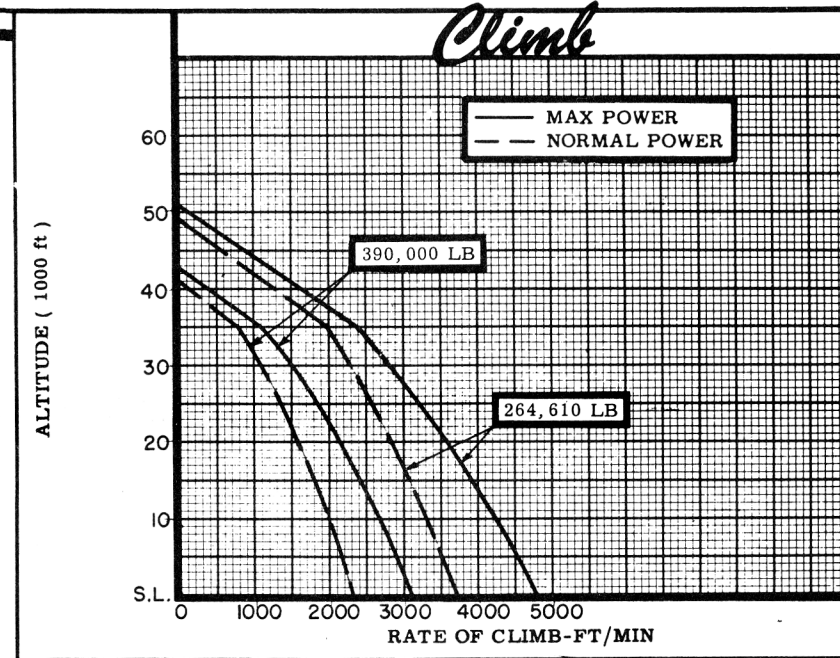
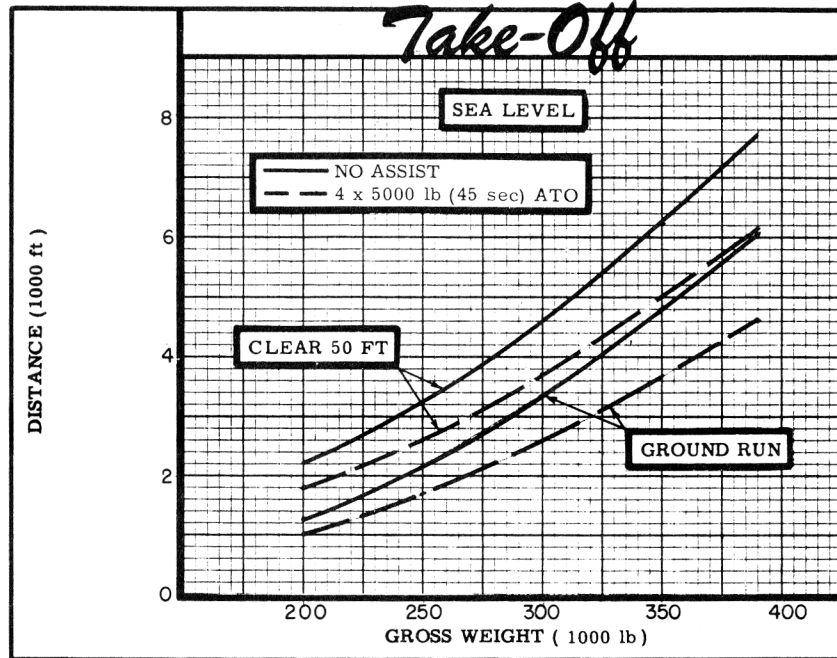
UHF Command	AN/ARC-27
Liaison	AN/ARC-21X
IFF	AN/APX-6
Marker Beacon	AN/APN-76A
Interphone	AN/AIC-10
Dir. Finder(indicator)	AN/APA-17B
Bomb-Nav. System	K-3A
Fire Control	A-3A
Radio Rec'v'r	(2) AN/APR-9
Panoramic Rec'v'r.	(3) AN/ARR-8A
ECM	(2) AN/APT-6
ECM	(2) AN/APT-9
ECM	(3) AN/APR-14
ECM	(1) AN/APT-16

# Loading and Performance - Typical Mission

C O N D I T I O N S	BASIC MISSION NIGHT	BASIC MISSION DAY	FERRY RANGE NIGHT
	I	II	III
TAKE-OFF WEIGHT <sup>⑨</sup> (lb)	390,000	390,000	390,000
Fuel at 6.5 lb/gal (grade JP-4) (lb)	211,486	215,006	215,186
Payload (Flash Bombs) (lb)	3700	NONE	NONE
Wing loading (lb/sq ft)	97.5	97.5	97.5
Stall speed (power off) (kn)	127	127	127
Take-off ground run at SL <sup>①</sup> (ft)	6040	6040	6040
Take-off ground run with ATO <sup>⑤ ①</sup> (ft)	4600	4600	4600
Take-off to clear 50 ft <sup>①</sup> (ft)	7700	7700	7700
Take-off to clear 50 ft with ATO <sup>⑤ ①</sup> (ft)	6100	6100	6100
Rate of climb at SL <sup>③</sup> (fpm)	2320	2320	2320
Rate of climb at SL (one engine out) <sup>②</sup> (fpm)	2490	2490	2490
Time: SL to 20,000 ft <sup>③</sup> (min)	10.2	10.2	10.2
Time: SL to 30,000 ft <sup>③</sup> (min)	16.9	16.9	16.9
Service ceiling (100 fpm) <sup>③</sup> (ft)	40,400	40,400	40,400
Service ceiling (one engine out) <sup>②</sup> (ft)	39,900	39,900	39,900
COMBAT RANGE <sup>④</sup> (n. mi.)	-----	-----	6235 <sup>⑧</sup>
COMBAT RADIUS <sup>④</sup> (n. mi.)	3095	3150	-----
Average cruise speed (kn)	457	457	457
Initial cruising altitude (ft)	37,400	37,400	37,400
Target speed <sup>③</sup> (kn)	476	476	-----
Target altitude (ft)	46,450	46,600	-----
Final cruising altitude (ft)	52,050	52,000	51,500
Total mission time (hr)	13.58	13.82	13.70
COMBAT WEIGHT (lb)	264,610	266,700	189,995
Combat altitude (ft)	46,450	46,600	51,500
Combat speed <sup>②</sup> (kn)	492	492	497
Combat climb <sup>②</sup> (fpm)	600	600	850
Combat ceiling (500 fpm) <sup>②</sup> (ft)	47,050	46,900	54,100
Service ceiling (100 fpm) <sup>③</sup> (ft)	48,600	48,400	55,500
Service ceiling (one engine out) <sup>③</sup> (ft)	46,450	46,250	53,460
Max rate of climb at SL <sup>②</sup> (fpm)	4780	4750	6700
Max speed at Opt. Alt. <sup>⑥ ②</sup> (kn)	542/19,500	542/19,500	542/19,500
Basic speed at 35,000 ft <sup>②</sup> (kn/ft)	517	517	520
LANDING WEIGHT (lb)	188,510	188,865	189,995
Ground roll at SL (ft)	1970	1970	1980
Ground roll (auxiliary brake) <sup>⑦</sup> (ft)	3120	3120	3130
Total from 50 ft (ft)	4350	4350	4360
Total from 50 ft (auxiliary brake) <sup>⑦</sup> (ft)	3220	3220	3230

<b>N O T E S</b>	① Take-off power	⑤ With 20,000 lb. thrust ATO for 45 sec	<b>PERFORMANCE BASIS:</b> (a) Data source: Preliminary flight test (b) Performance is based on powers shown on page 3.
	② Max power	⑥ Limited by structure.	
	③ Normal power	⑦ With drag chute.	
	④ Detailed descriptions of RADIUS and RANGE missions are given on page 6.	⑧ External tanks carried all the way.	
		⑨ Does not include weight of ATO.	





**N O T E S**FORMULA: RADIUS MISSION I and II

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speeds increasing altitude with decreasing airplane weight, external tanks are dropped when empty. Climb so as to reach cruise ceiling fifteen (15) minutes from target. Run into target at normal power, drop flash bombs if carried, conduct two (2) minutes evasive action and eight (8) minutes escape from target at normal power. Cruise back to home base at long range speeds increasing altitude with decreasing airplane weight. Range free allowances include five (5) minutes normal power fuel consumption for starting engines and take-off, two (2) minutes normal power fuel consumption at combat altitude for evasive action and thirty (30) minutes of maximum endurance (four engine) fuel consumption 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 speeds increasing altitude with decreasing airplane weight until all usable fuel is consumed. Range free allowances include five (5) minutes normal power fuel consumption for starting engines and take-off and thirty (30) minutes of maximum endurance (four engine) fuel consumption at sea level plus 5% of initial fuel load for land reserve.

GENERAL DATA




(a) The prescribed fuel reserve for basic mission is equivalent to 780 nautical miles at best range conditions.

PERFORMANCE REFERENCE: Boeing document No. D-1395o, substantiation Data Report, dated Nov. 52, Rev. July 53.

REVISION BASIS:

To reflect changes in security classification.

**SUPPLEMENTAL**

-  Photo Reconnaissance
-  Electronic Reconnaissance
-  Weather Reconnaissance

