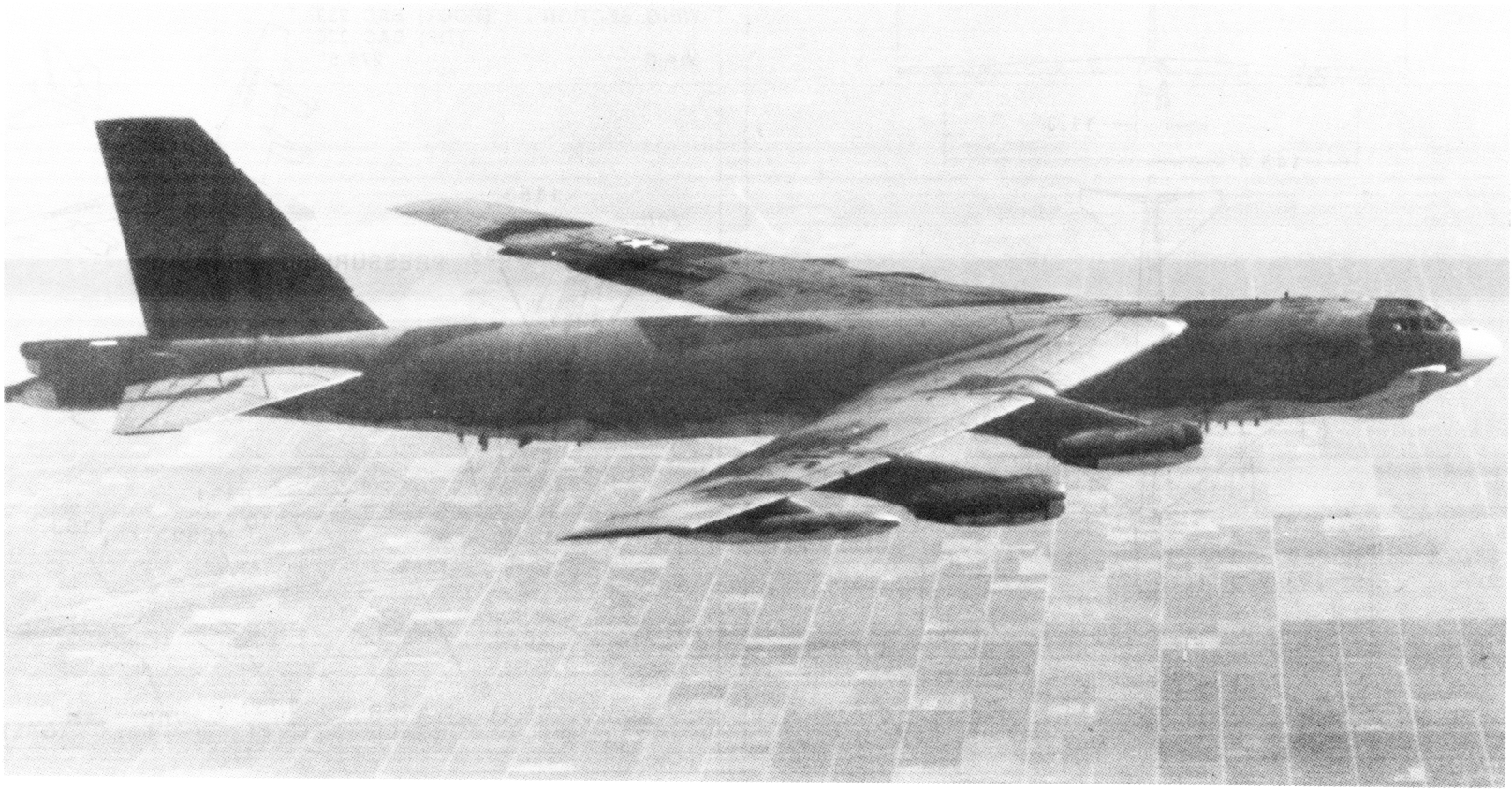
AI
B-52G/char



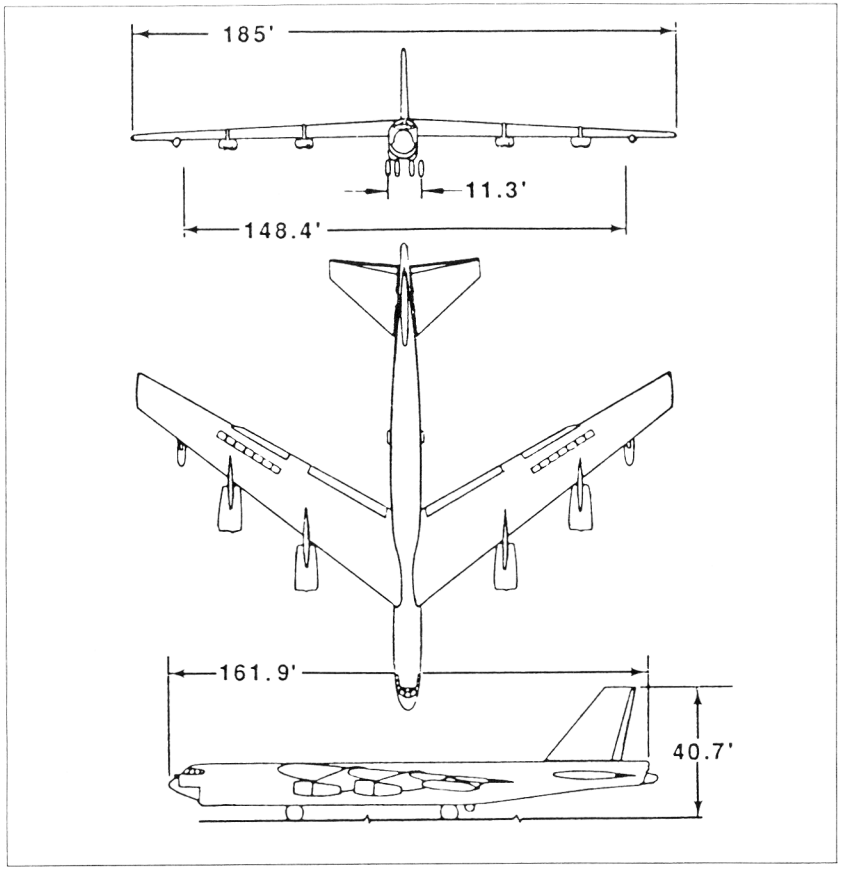
STANDARD AIRCRAFT CHARACTERISTICS

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

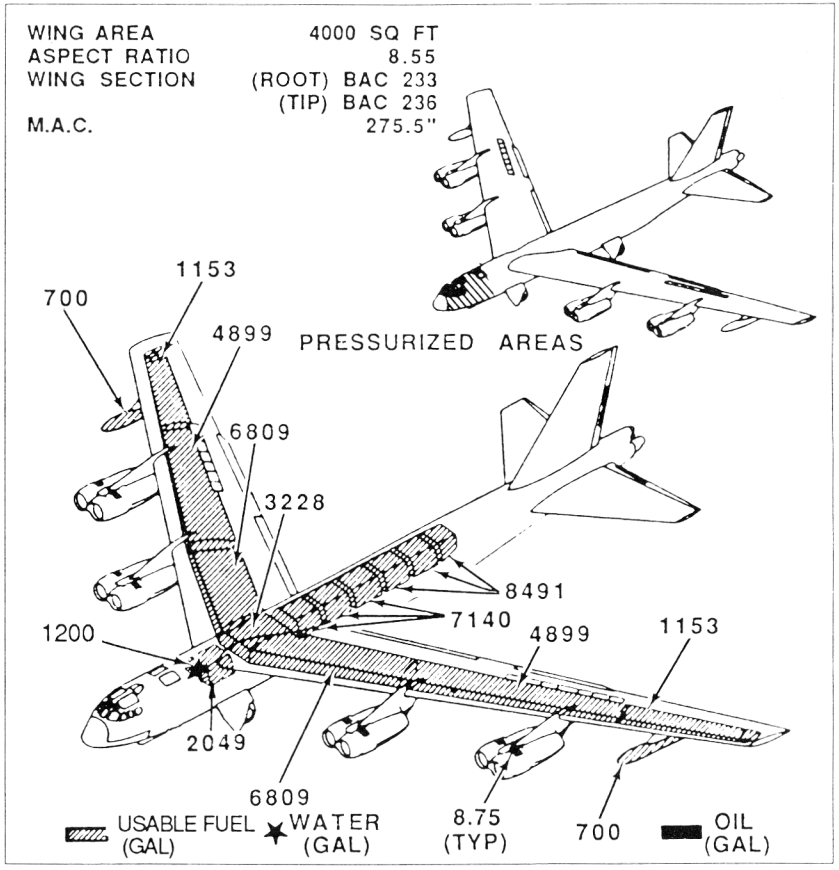
B-52G
STRATOFORTRESS

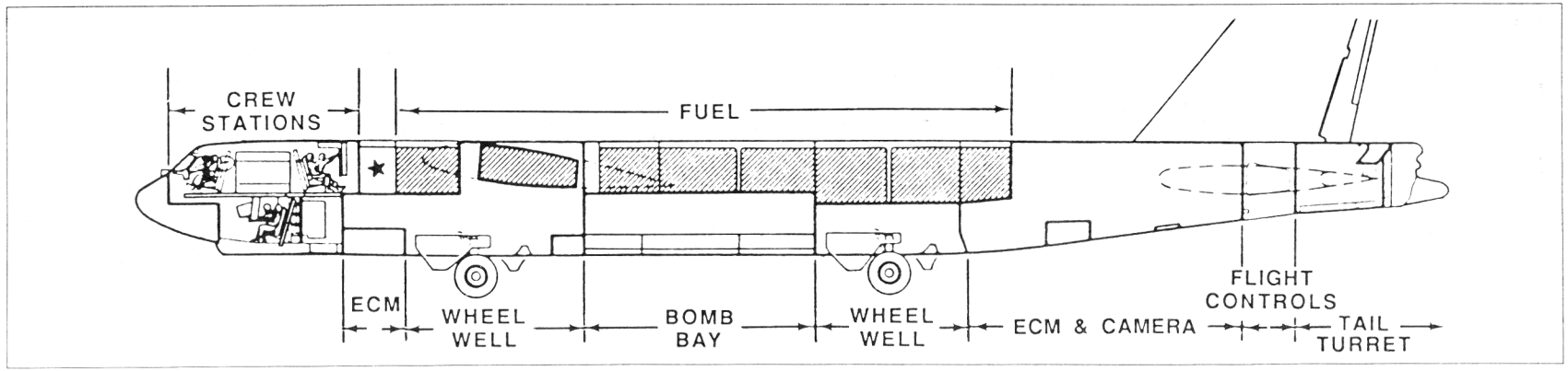
BOEING

EIGHT J57-P/F-43WB
PRATT & WHITNEY



WING AREA	4000 SQ FT
ASPECT RATIO	8.55
WING SECTION	(ROOT) BAC 233
	(TIP) BAC 236
M.A.C.	275.5"





POWER PLANT

Nr & Model	(8) J57-P/F-43WB*
Mfr	Pratt & Whitney
Eng. Spec. Nr	A1704-E
Type	Axial Flow, Gas Turbine
Length	167.3 in.
Diameter	38.9 in.
Weight (Dry)	3870 lb
Tail Pipe	Fixed Area
Augmentation	Water Injection

* Equipped with sound suppressors

ENGINE RATINGS

S.L. Static	LB	RPM*	MIN
Max:**	13,750	6900/9650	5
Mil:	11,200	6400/9650	30
Nor:	9500	6150/9350	Cont

* First figure represents low pressure spool, second figure represents high pressure spool

** With water injection (available for T.O. only)

FUEL

Location	Nr Tanks	Gal
Wing, Ext	2	1400
Wing, Outbd	2	2306
Wing Mains	4	23,416
Wing, Ctr	1	3228
Fuselage, Fwd	1	2049
Fuselage, Ctr	3	7140
Fuselage, Aft	3	8491
	Total	48,030

Grade JP-4
Specification MIL-T-5624L

OIL

Nacelle ..... 8 ..... Total 70
Grade ..... Synthetic
Specification MIL-L-7808J

WATER

Fuselage, Fwd 1 1200

MISSION AND DESCRIPTION

Mfr's Model: 464-253

The B-52G is an intercontinental heavy bombardment airplane capable of diverse missions including: reconnaissance, hard target penetration (high/low), tactical environment area denial, standoff ALCM launch (98 A/C), anti-ship/sea lane control (69 A/C), and combat crew trainer. The normal crew of six consists of pilot, copilot, navigator, radar navigator, ECM operator, and gunner.

Automatic cabin pressurization, heating, and ventilation are provided for crew comfort. Ejection seats for emergency escape are provided for all the crew. Flight control is accomplished by use of spoilers on the wing, elevators on the all-movable horizontal tail, and a rudder on the fixed vertical tail. The spoilers also function as airbrakes in descents and landing.

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

Development

Design Initiated	Jun 56
First Flight	Oct 58
First Acceptance	Oct 58
Out of Production	Mar 61

DIMENSION

Wing	
Span	185.0'
Dihedral (Chord Plane)	2.5°
Incidence (root)	6°
Sweepback (at 1/4 chord)	35°
Length	161.9'
Height (Overall)	40.7'
Height (Fin Folded)	20'
Tread (Outrigger)	148.4'
Tread (Main Gear)	11.3'

WEIGHTS

Loading	Lb	L.F.
Empty	180,041	–
Basic	183,250	–
Design	*500,000	–
Combat	**310,261	***2.0
Max Take-off	488,000	1.8
Max Inflight	+488,000	1.8
Max Loading	++450,000	–

* Maximum Taxi Weight
** For Basic Mission
*** Maneuver Load Factor
\+ Limited by Structure, Normal Procedures
++ For Contact Sinking Speed of 6 Ft./Sec.

ORDNANCE BOMBS, CONVENTIONAL

Nr Int/Ext	Class
27/24	500
27/24	750
12/18	1000
8/12	2000

BOMBS, NUCLEAR

Nr	Model
4	B-28 F1
4	B-28-0,1
4	B-43-0
4	B-43-1
1	B-53
4	B-61-0,1
4	B-61-7
4	B-83
4	BDU-8/B (Practice)
4	BDU-38 (Practice)

CAMERAS

Nr Type	Model	Lens
1 Bomb Nav	0-32	Radar Recording
1 Bomb Nav	KS-32A	
1 Video Recorder	RO-523/ ASQ-175	
1 Strike	K-17C, D	or 6"
1 Strike	K-38	36"
1 EVS	MX-9311/ AVQ-22	
1 FLIR	OR-118/AAQ-6	

ELECTRONICS

Navigation/Recognition Systems
- Radar Alt ..... AN/APN-150(V) or AN/APN-224
- Transponder (IFF) ..... AN/APX-64(V)
- Marker Beacon Radio AN/ARN-32
- Navigation Radio AN/ARN-14
- Glidepath Radio ..... AN/ARN-67 or AN/ARN-31
- TACAN Radio Nav ..... AN/ARN-118(V)
- Radio Beacon AN/APN-69
- Doppler Radar ..... AN/APN-218 or AN/APN-89A
- Compass System J-4
- True Heading Computer AN/AJA-1

Communication Systems
- Interphone System AN/AIC-10A
- UHF Command Radio ..... AN/ARC-164(V)
- AFSATCOM AN/ASC-19
- Liaison ..... AN/ARC-190(V) or AN/ARC-58
- UHF Line of Sight AN/ARC-171

Electronic Warfare Systems
- Countermeasures System ... AN/ALQ-117 or AN/ALQ-172(V)1
- Countermeasures System AN/ALQ-122/ AN/ALT-16A
- Countermeasures Receiver .... AN/ALR-20A System
- Countermeasures Transmitting System . AN/ALT-32H AN/ALT-32L
- Warning Receiver ..... AN/ALR-46(V)-4
- Tail Warning System .... AN/ALQ-153(V)-1
- Power Management System ... AN/ALQ-155
- Blanking System
- Flare Ejector System AN/ALE-20
- Chaff Dispensing Set AN/ALE-24

Other
- Offensive Avionics System Or Weapon Control System Offensive . AN/ASQ-176 AN/ASQ-38
- Automatic Flight Control System ..... A/A42G-11 Or AN/ASW-49
- Heading-Vertical Ref. System AN/AJN-8
- Electro-Optical Viewing System . AN/ASQ-151
- Fire Control System AN/ASG-15
- Strategic Radar AN/APQ-166

MISSILES

Nr Int/Ext	Model	Type
8/0	AGM-69	Short Range Attack Missile
0/12	AGM-86	Air Launched Cruise Missile
0/12	AGM-84	Harpoon

GUNS

Nr	Type	Size	Rds Ea.	Loc
4	M-3	50 cal	600	Tail Tur.

B–52G LOADING AND PERFORMANCE — TYPICAL MISSION

CONDITIONS		NOTES	INTERNAL STORES, LIGHT PAYLOAD LOW MISSION I	INTERNAL STORES, LIGHT PAYLOAD HIGH MISSION II	INTERNAL STORES, HEAVY PAYLOAD LOW MISSION III	INTERNAL STORES, HEAVY PAYLOAD HIGH MISSION IV	INTERNAL & EXTERNAL STORES, HEAVY PAYLOAD LO MISSION V	FERRY MISSION VI
TAKE-OFF WEIGHT	(lb)	5,7	488,000	488,000	488,000	488,000	488,000	488,000
Fuel at 6.5 lb/gal (Grade JP-4)	(lb)		285,524	285,524	275,561	275,561	244,125	302,814
Payload (Bombs)	(lb)	9	14,337	14,337	24,300	24,300	50,676 (9)	-
Payload (Chaff/Flares/EVS water)	(lb)		720/336/113	720/336/113	720/336/113	720/336/113	720/336/113	-
Wing Loading	(lb/sq ft)		122	122	122	122	122	122
Stall Speed (power off)	(kn)	8	153	153	153	153	153	153
Take-off Ground run at S.L. (wet)	(ft)	1	8010	8010	8010	8010	8090	8010
Take-off to clear 50 ft (wet)	(ft)	1	10,220	10,220	10,220	10,220	10,320	10,220
Minimum Runway Required (wet)	(ft)	1	9590	9590	9590	9590	9680	9590
Take-off Ground run at S.L. (dry)	(ft)	2	11,200	11,200	11,200	11,200	11,370	11,200
Take-off to clear 50 ft. (dry)	(ft)	2	13,880	13,880	13,880	13,880	14,110	13,880
Minimum Runway Required (dry)	(ft)	2	13,600	13,600	13,600	13,600	13,840	13,600
Climb path angle (wet)(dry)	(%)	1/2	9.8/5.6	9.8/5.6	9.8/5.6	9.8/5.6	9.8/5.4	9.8/5.6
Climb path angle one engine out (wet)(dry)	(%)	1/2	6.4/3.3	6.4/3.3	6.4/3.3	6.4/3.3	6.1/3.3	6.4/3.3
Time: S.L. to 20,000 ft	(min)	3	12.0	12.0	12.0	12.0	14.6	12.0
Time: S.L. to 30,000 ft	(min)	3	21.1	21.1	21.1	21.1	29.4	21.1
Service ceiling (100 fpm)	(ft)	3	35,700	35,700	35,700	35,700	33,930	35,700
Service ceiling (one engine out)	(ft)	2	34,350	34,350	34,350	34,350	32,100	34,350
COMBAT RANGE	(n.mi)	4	-	-	-	-	-	6758
COMBAT RADIUS	(n.mi)	4	1890	3118	1772	2993	1077	-
Average cruise speed	(kn)		460	459	460	459	461	459
Initial cruising altitude	(ft)		32,050	32,050	32,050	32,050	32,050	32,050
Final cruising altitude	(ft)		50,600	50,600	50,600	50,600	50,050	50,800
Total mission time	(hr)		9.2	13.6	8.7	13.1	5.7	14.8
Inflight refueled range	(n.mi)	10	-	-	-	-	-	8401
Inflight refueled radius	(n.mi)	10	2882	3964	2772	3848	2052	-
Inflight refueled mission time	(hr)	10	13.7	17.5	13.2	17.0	8.5	18.5
COMBAT WEIGHT	(lb)		310,261	297,758	306,265	293,032	296,394	190,186
Combat altitude	(ft)		S.L.	42,950	S.L.	42,650	S.L.	50,800
Combat climb	(fpm)	2	4987	754	5056	872	4795	879
Combat ceiling (500 fpm)	(ft)	2	43,600	44,400	43,850	44,700	43,060	53,095
Service ceiling (100 fpm)	(ft)	3	44,630	45,430	44,850	45,750	44,220	54,170
Service ceiling (one engine out)	(ft)	2	43,550	44,300	43,750	44,650	42,750	53,150
Max. rate of climb at S.L.	(fpm)	2	4987	5211	5056	5300	4795	8243
Max. speed at S.L.	(kn)	2,5	400	400	400	400	400	400
Max. speed/altitude	(kn/ft)	2,5	548/20,000	548/20,000	548/20,000	548/20,000	538/18,900	549/20,100
LANDING WEIGHT	(lb)		191,970	191,970	191,970	191,970	197,030	190,186
Stall Speed (power off)	(kn)	7	97	97	97	97	98	96
Ground Roll at S.L.	(ft)		3100	3100	3100	3100	3200	3100
Ground Roll (Auxiliary Brake)	(ft)	6	2300	2300	2300	2300	2400	2300
Total from 50 Ft	(ft)		5500	5500	5500	5500	5650	5500
Total from 50 Ft (auxiliary brake)	(ft)	6	4700	4700	4700	4700	4850	4700

NOTES

(1) Take-off Power

(2) Military Power

(3) Normal Power

(4) Detailed descriptions of range and radius missions are given on page 8.

(5) Limited by structure (load factor = 1.8)

(6) With drag chute

(7) 495,000 lb brake release gross weight. Assumes 2000 lb fuel and 5000 lb water consumed prior to liftoff.

(8) Initial buffet, flaps down, S.L.

(9) M36 (int) 24,300 lb
MK-55 (ext) 26,376 lb
50,676 lb

(10) Buddy refuel from KC-135A tanker flying radius mission.

PERFORMANCE BASIS: Data Source: Flight Test

B–52G LOADING AND PERFORMANCE — NUCLEAR WEAPONS

CONDITIONS		NOTES	VII	VIII	IX	X	FERRY RANGE XI
TAKE-OFF WEIGHT	(lb)	5,7	488,000	488,000	488,000	488,000	488,000
Fuel at 6.5 lb/gal (Grade JP-4)	(lb)		295,792	280,262	267,115	220,665	301,501
Payload (Bombs)	(lb)	9	2860	17,780	27,064	64,552 (9)	-
Payload (Chaff/Flares/EVS water)	(lb)		720/336/113	720/336/113	720/336/113	720/336/113	-
Wing Loading	(lb/sq ft)		122.0	122.0	122.0	122.0	122.0
Stall Speed (power off)	(kn)	8	153	153	153	153	153
Take-off Ground run at S.L. (wet)	(ft)	1	8010	8010	8010	8070	8010
Take-off to clear 50 ft (wet)	(ft)	1	10,220	10,220	10,220	10,300	10,220
Minimum Runway Required (wet)	(ft)	1	9590	9590	9590	9660	9590
Take-off Ground run at S.L. (dry)	(ft)	1	11,200	11,200	11,200	11,330	11,200
Take-off to clear 50 ft. (dry)	(ft)	1	13,880	13,880	13,880	14,060	13,880
Minimum Runway Required (dry)	(ft)	1	13,600	13,600	13,600	13,640	13,600
Climb path angle (wet)(dry)	(%)	1	9.8/5.6	9.8/5.6	9.8/5.6	9.6/5.4	9.8/5.6
Climb path angle one engine out (wet)(dry)	(%)	1	6.4/3.3	6.4/3.3	6.4/3.3	6.1/3.1	6.4/3.3
Time: S.L. to 20,000 ft	(min)	3	12.0	12.0	12.0	14.2	12.0
Time: S.L. to 30,000 ft	(min)	3	21.1	21.1	21.1	27.7	21.1
Service ceiling (100 fpm)	(ft)	3	35,700	35,700	35,700	34,270	35,700
Service ceiling (one engine out)	(ft)	2	34,350	34,350	34,350	32,450	34,350
COMBAT RANGE	(n.mi)	4	-	-	-	-	6714
COMBAT RADIUS	(n.mi)	4	2011	1825	1665	1013	-
Average cruise speed	(kn)		460	461	461	460	459
Initial cruising altitude	(ft)		32,060	32,060	32,060	32,630	32,060
Final cruising altitude	(ft)		50,450	50,380	49,960	48,970	50,640
Total mission time	(hr)		9.7	8.9	8.2	5.2	14.7
Inflight refueled range	(n.mi)	10	-	-	-	-	8358
Inflight refueled radius	(n.mi)	10	2993	2820	2666	1996	-
Inflight refueled mission time	(hr)	10	14.1	13.4	12.7	9.6	18.4
COMBAT WEIGHT	(lb)		315,688	310,106	309,032	297,389	191,499
Combat altitude	(ft)		S.L.	S.L.	S.L.	S.L.	50,640
Combat climb	(fpm)	2	4894	4990	5008	4841	884
Combat ceiling (500 fpm)	(ft)	2	43,300	43,600	43,690	43,270	53,010
Service ceiling (100 fpm)	(ft)	3	44,300	44,640	44,710	44,370	54,040
Service ceiling (one engine out)	(ft)	2	43,160	43,480	43,590	42,950	52,980
Max. rate of climb at S.L.	(fpm)	2	4894	4990	5008	4841	8187
Max. speed at S.L.	(kn)	2	400	400	400	400	400
Max. speed/altitude	(kn/ft)	2	548/20,000	548/20,000	548/20,000	542/19,350	549/20,000
LANDING WEIGHT	(lb)		193,179	193,789	197,652	206,614	191,499
Stall Speed (power off)	(kn)		97	97	98	100	96
Ground Roll at S.L.	(ft)		3150	3150	3200	3300	3100
Ground Roll (Auxiliary Brake)	(ft)	6	2300	2300	2400	2600	2300
Total from 50 Ft	(ft)		5575	5575	5650	5825	5500
Total from 50 Ft (auxiliary brake)	(ft)	6	4725	4725	4850	5125	4700

NOTES

(1) Take-off Power

(2) Military Power

(3) Normal Power

(4) Detailed descriptions of range and radius missions are given on page 8.

(5) Limited by structure (load factor = 1.8)

(6) With drag chute

(7) 495,000 lb brake release gross weight. Assumes 2000 lb fuel and 5000 lb water consumed prior to liftoff.

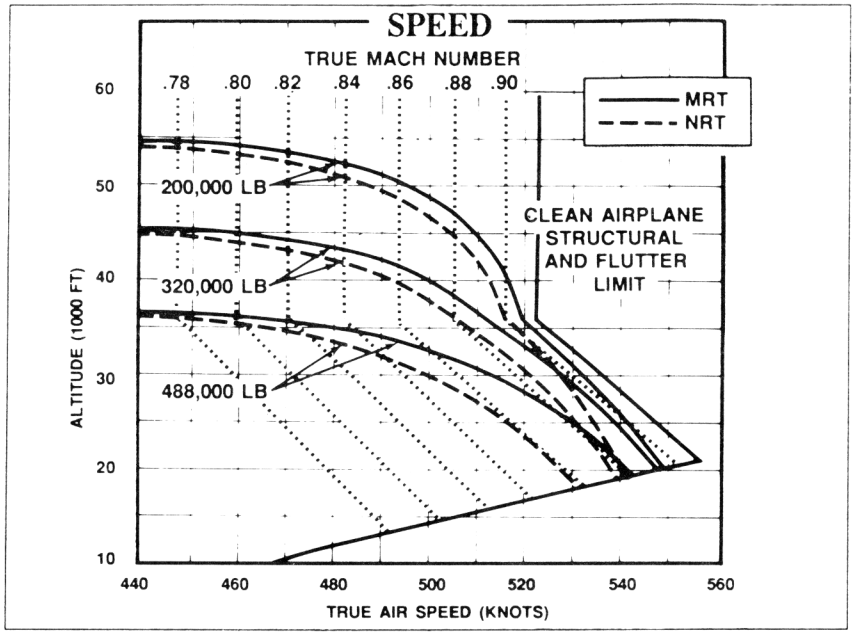
(8) Initial buffet, flaps down, S.L.

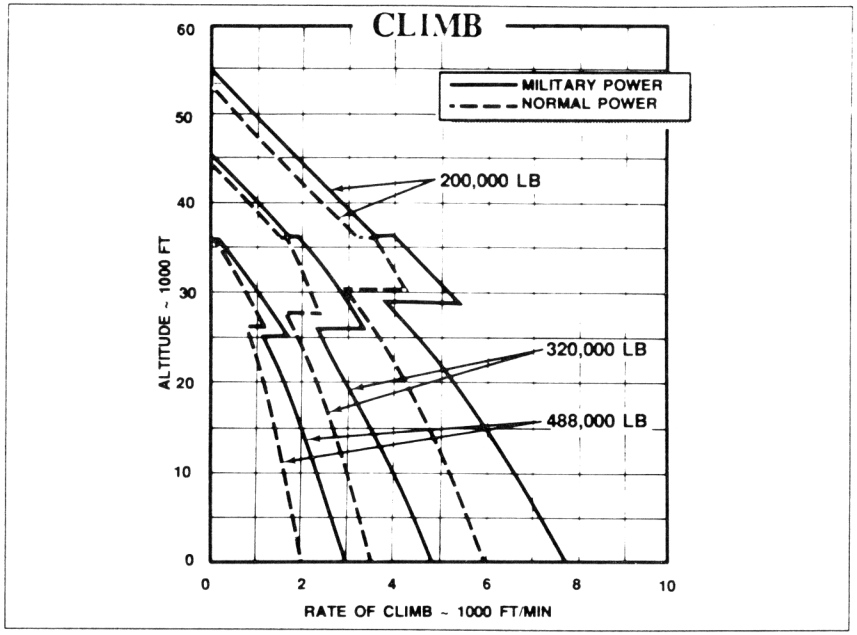
(9)

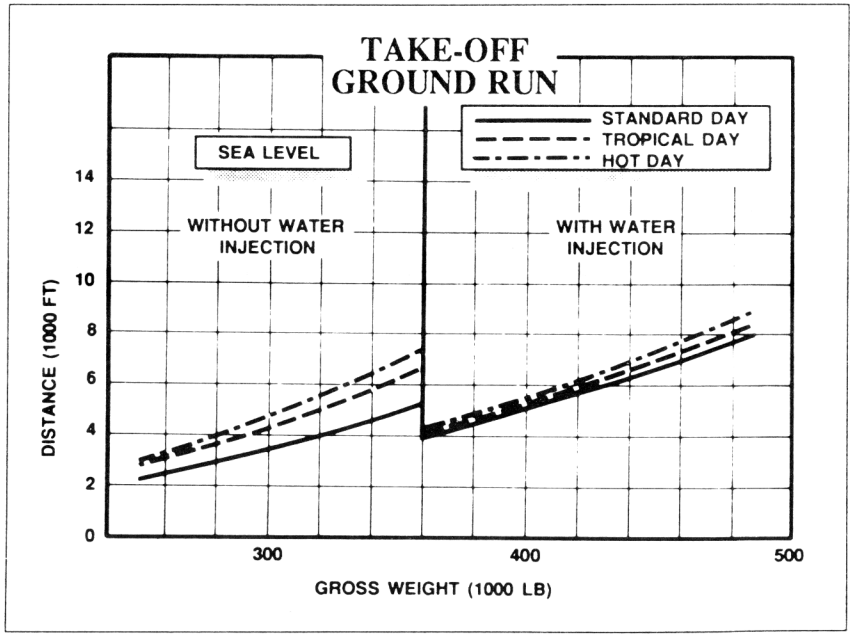
B-28FI (int)	9360 lb
AGM-69A (int)	17,704 lb
AGM-86B (ext)	37,488 lb
	64,552 lb

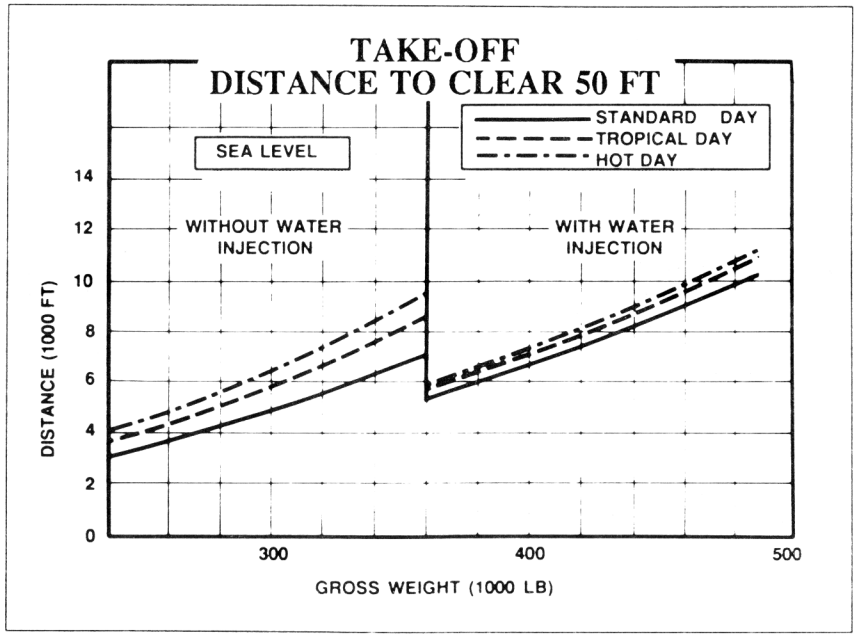
(10) Buddy refuel from KC-135A tanker flying radius mission.

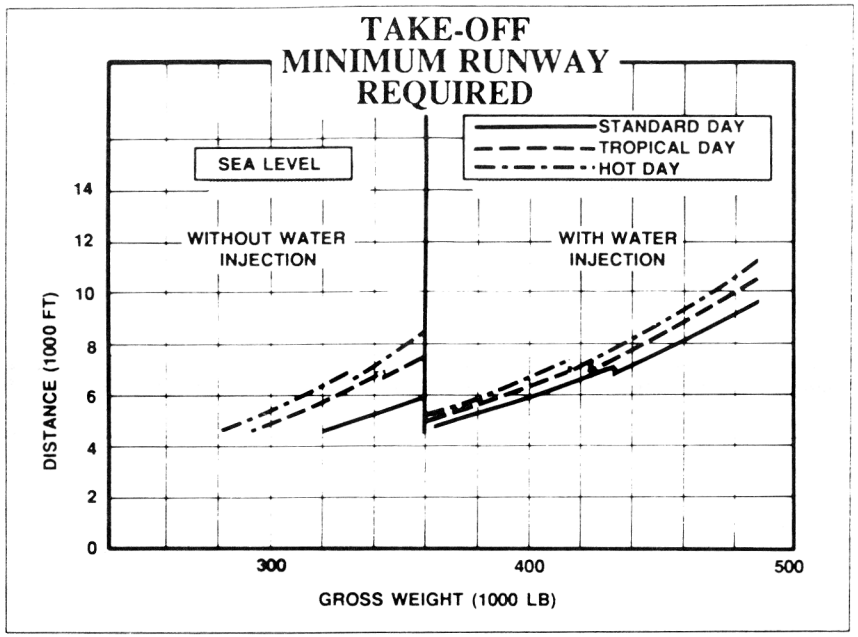
PERFORMANCE BASIS: Data Source: Flight Test

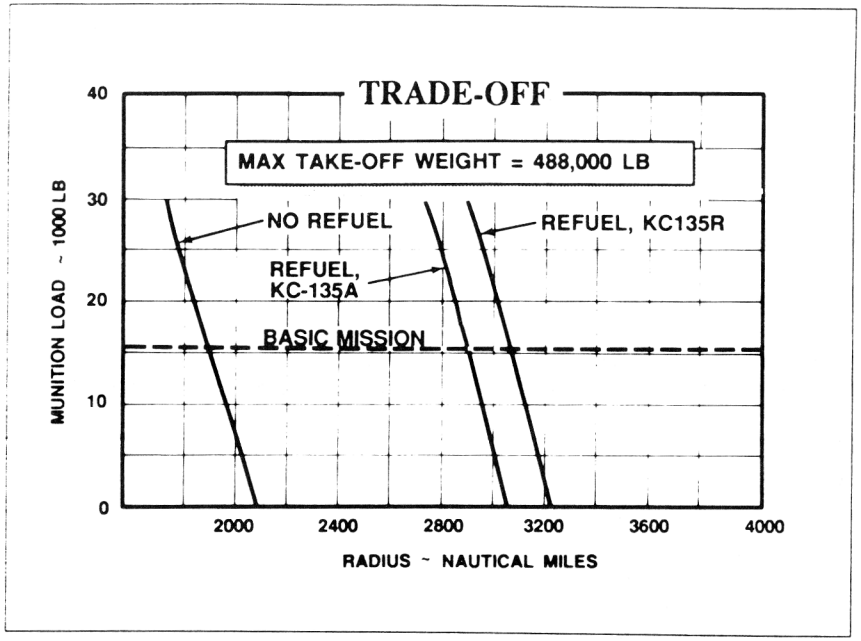

SPEED
TRUE MACH NUMBER
.78 .80 .82 .84 .86 .88 .90
MRT
NRT
200,000 LB
320,000 LB
488,000 LB
CLEAN AIRPLANE STRUCTURAL AND FLUTTER LIMIT
ALTITUDE (1000 FT)
60 50 40 30 20 10
440 460 480 500 520 540 560
TRUE AIR SPEED (KNOTS)

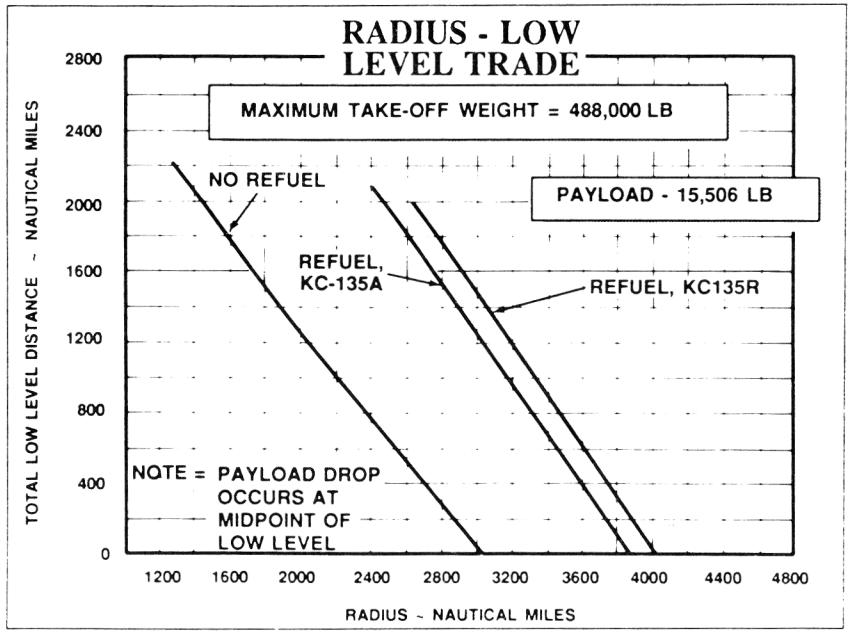

CLIMB
MILITARY POWER
NORMAL POWER
200,000 LB
320,000 LB
488,000 LB
ALTITUDE - 1000 FT
60 50 40 30 20 10 0
0 2 4 6 8 10
RATE OF CLIMB - 1000 FT/MIN

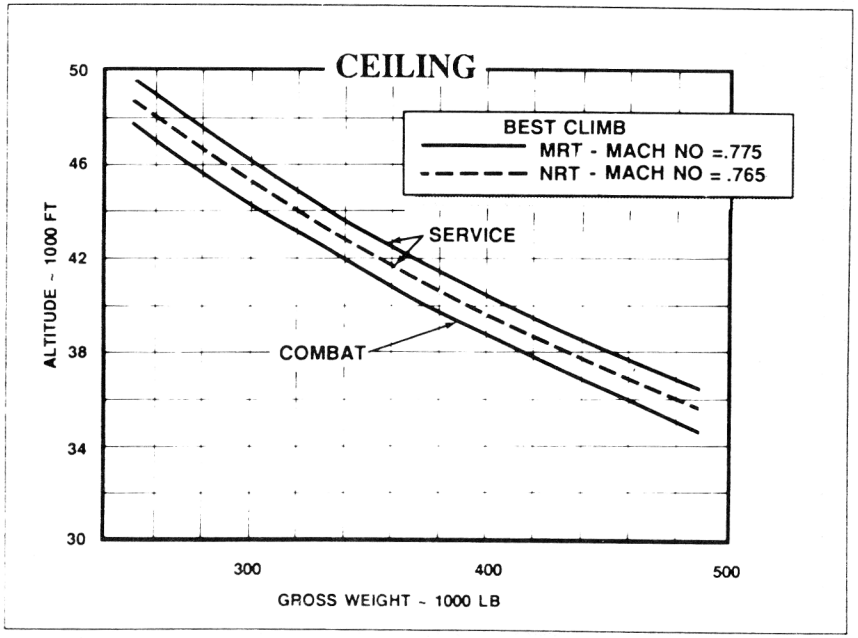

TAKE-OFF
GROUND RUN
STANDARD DAY
TROPICAL DAY
HOT DAY
SEA LEVEL
WITHOUT WATER INJECTION
WITH WATER INJECTION
DISTANCE (1000 FT)
14 12 10 8 6 4 2 0
300 400 500
GROSS WEIGHT (1000 LB)


TAKE-OFF
DISTANCE TO CLEAR 50 FT
STANDARD DAY
TROPICAL DAY
HOT DAY
SEA LEVEL
WITHOUT WATER INJECTION
WITH WATER INJECTION
DISTANCE (1000 FT)
14 12 10 8 6 4 2 0
300 400 500
GROSS WEIGHT (1000 LB)


TAKE-OFF
MINIMUM RUNWAY
REQUIRED
STANDARD DAY
TROPICAL DAY
HOT DAY
SEA LEVEL
WITHOUT WATER INJECTION
WITH WATER INJECTION
DISTANCE (1000 FT)
0
2
4
6
8
10
12
14
300
400
500
GROSS WEIGHT (1000 LB)


TRADE-OFF
MAX TAKE-OFF WEIGHT = 488,000 LB
NO REFUEL
REFUEL, KC135R
REFUEL, KC-135A
BASIC MISSION
MUNITION LOAD ~ 1000 LB
0
10
20
30
40
2000
2400
2800
3200
3600
4000
RADIUS ~ NAUTICAL MILES


RADIUS - LOW
LEVEL TRADE
MAXIMUM TAKE-OFF WEIGHT = 488,000 LB
PAYLOAD - 15,506 LB
NO REFUEL
REFUEL, KC-135A
REFUEL, KC135R
NOTE = PAYLOAD DROP OCCURS AT MIDPOINT OF LOW LEVEL
TOTAL LOW LEVEL DISTANCE ~ NAUTICAL MILES
0
400
800
1200
1600
2000
2400
2800
1200
1600
2000
2400
2800
3200
3600
4000
4400
4800
RADIUS ~ NAUTICAL MILES


CEILING
BEST CLIMB
MRT - MACH NO =.775
NRT - MACH NO = .765
SERVICE
COMBAT
ALTITUDE ~ 1000 FT
30
34
38
42
46
50
300
400
500
GROSS WEIGHT ~ 1000 LB

NOTES

FORMULA: BOMBER RADIUS MISSION I, III, V, VII, VIII & IX

Take-off and climb on course to optimum-cruise altitude at normal power. Cruise out at long range speed*, increasing altitude with decreasing weight. Descend to sea level 700 nautical miles (n.mi.) from target. Penetrate to target at 0.53 Mach number. Run into target at normal power and drop stores. Allow two minutes for evasive maneuvers. Leave target and cruise at sea level and 0.53 Mach Number for a distance of 700 n.mi. Climb to cruise altitude with normal power. Cruise back to home base at long range speed*, increasing altitude with decreasing weight. Range-free allowances include five minutes at normal power fuel consumption for starting engines and takeoff, two minutes at normal power for evasive maneuvers and 8000 pounds of fuel for landing reserve.

FORMULA: BOMBER RADIUS MISSION II & 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. Climb to combat altitude 100 nautical miles (n.mi.) from target. Penetrate to target at combat altitude for 100 n.mi. at maximum speed with normal power and drop stores. Allow two minutes for evasive maneuvers. Leave target and cruise at combat altitude with normal power for 100 n.mi. Climb to cruise altitude with normal power. Cruise back to home base at long range speed*, increasing altitude with decreasing weight. Range-free allowances include five minutes at normal power fuel consumption for starting engines and takeoff, two minutes at normal power for evasive maneuvers and 8000 pounds of fuel for landing reserve.

FORMULA: BOMBER RANGE MISSION VI & XI

Take-off and climb on course to optimum-cruise altitude at normal power. Cruise out at long range speed*, increasing altitude with decreasing weight until all cruise fuel is consumed. Range-free allowances include five minutes at normal power fuel consumption for starting engines and takeoff and 8000 pounds of fuel for landing reserve.

FORMULA: BOMBER RADIUS MISSION X

Take-off and climb on course to optimum-cruise altitude at normal power. Cruise out at long range speed*, increasing altitude with decreasing weight. Descend to sea level 600 nautical miles (n.mi.) from target. Penetrate to target at 0.53 Mach number. Run into target at normal power and drop stores. Leave target and cruise at sea level and 0.53 Mach number for a distance of 600 nautical miles. Climb to cruise altitude with normal power. Cruise back to home base at long range speed*, increasing altitude with decreasing weight. Range-free allowances include five minutes at normal power fuel consumption for starting engines and takeoff, two minutes at normal power for evasive maneuvers and 8000 pounds of fuel for landing reserve.

REVISION BASIS:

To reflect current characteristics and performance data. To include missions showing aircraft carrying AGM-86B missiles.

PERFORMANCE REFERENCE:

Boeing Document D520-11174-1, "Substantiating Data Report - B-52G Standard Aircraft Characteristics Charts"

*Long range speed is maximum speed for 99% maximum miles per pound of fuel.