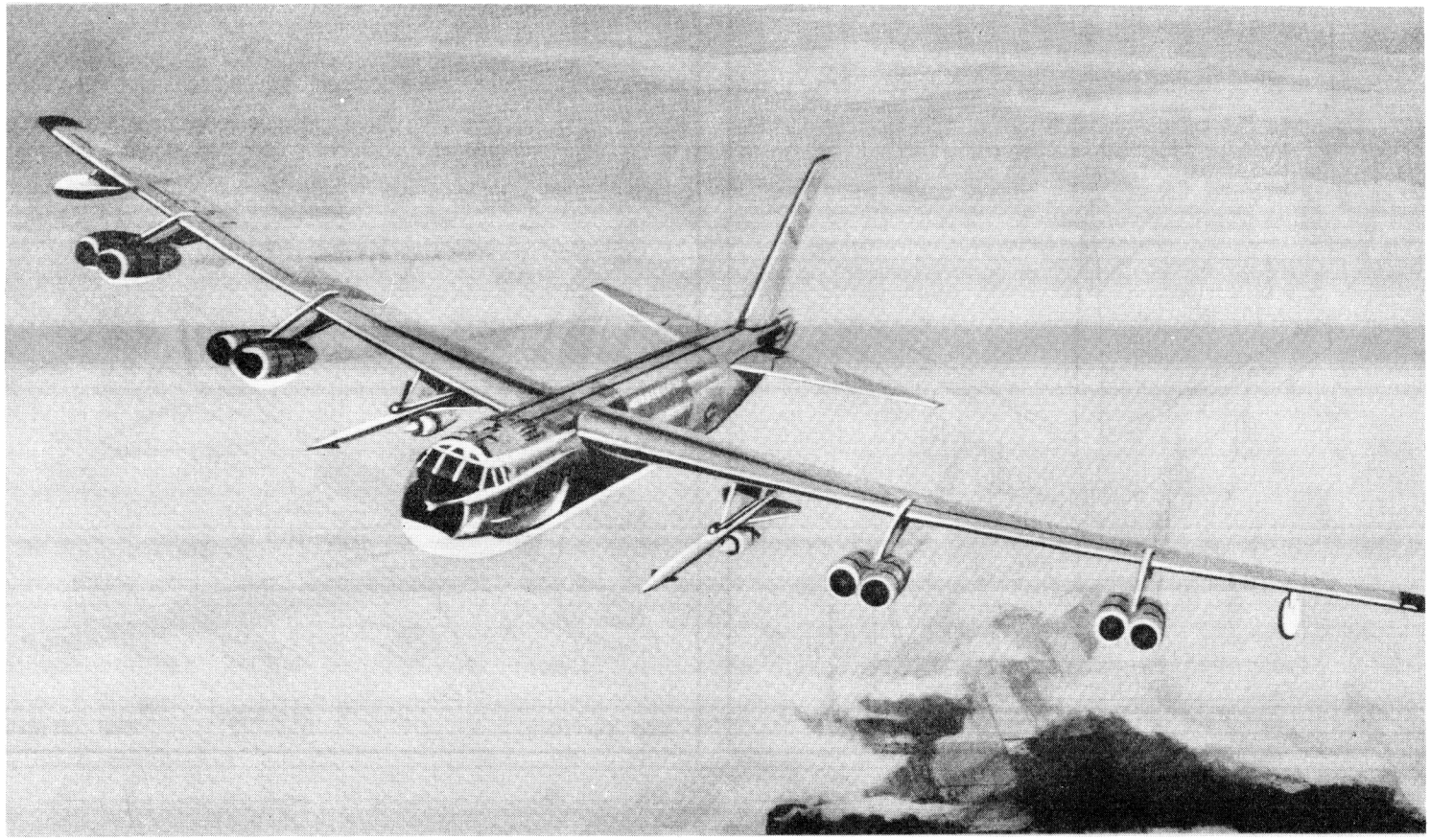
A-1
B-52H/cnn-



Standard Aircraft Characteristics

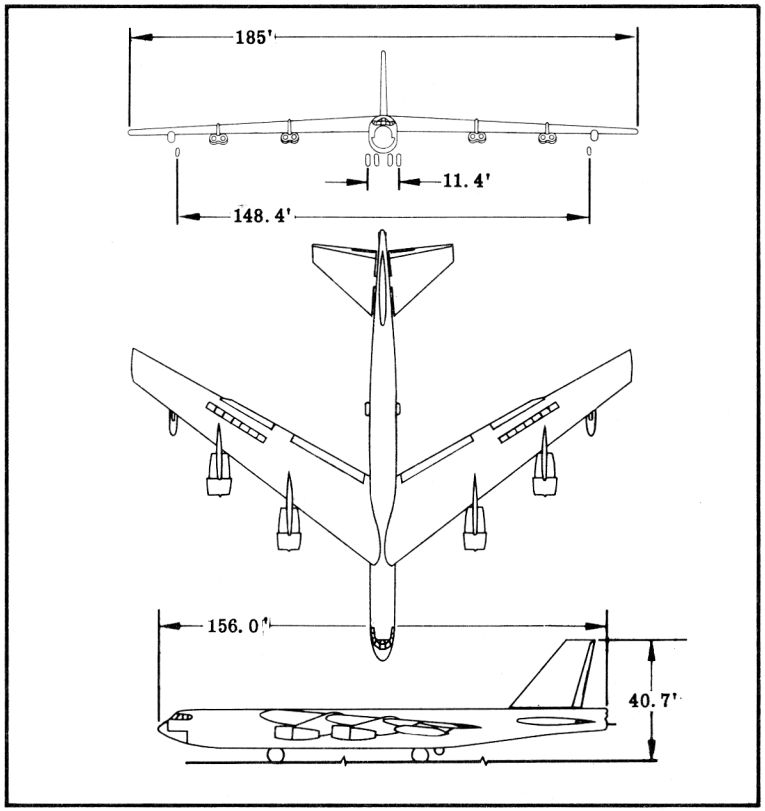
BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

B-52H

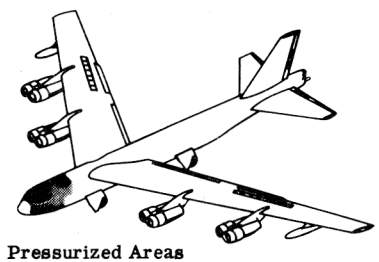
STRATOFORTRESS

Boeing

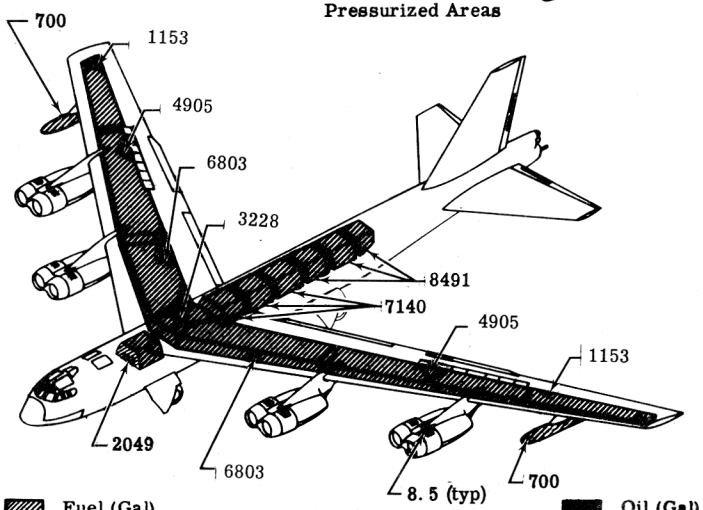
EIGHT TF33-P-3
PRATT & WHITNEY

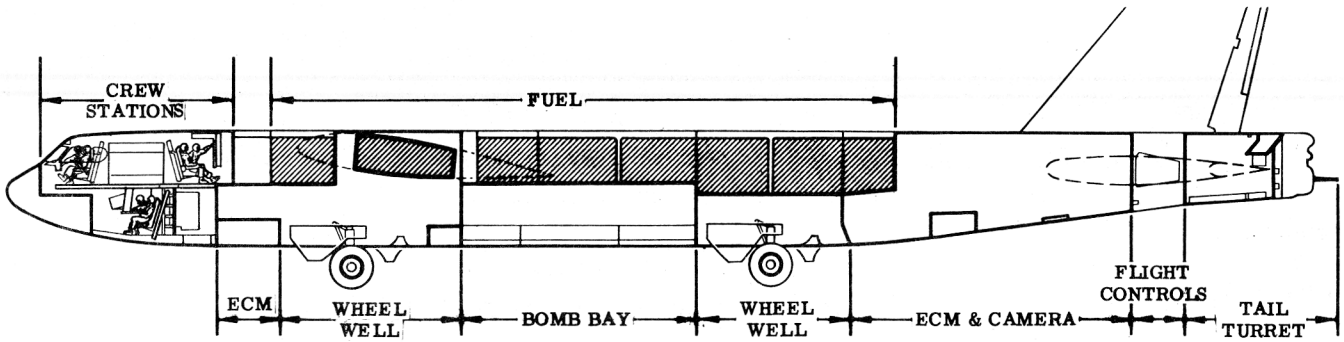


Wing Area . . . . . 4000 sq ft
Aspect Ratio 8.55
Wing Section . . . (root) BAC 233
. . . . (tip) BAC 236
MAC . . . . . 275.5"



Pressurized Areas





POWER PLANT

Nr & Model	(8) TF-33-P-3
Mfr	Pratt & Whitney
Engine Spec (15 Jul 60)	A1758D
Type	Axial
Length	136.32 in.
Diameter	52.93 in.
Weight (Dry)	3900 lb.
Tailpipe	Fixed Area

Note: At present there are no requirements for ATO.

ENGINE RATINGS

SL Static	LB	**RPM	MIN
Max:	*17,000	6550/10,050	5
Mil:	16,500	6470/10,000	30
Nor:	14,500	6150/ 9750	Cont

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

*T. O. thrust at inlet temperature 59 to 100° F.

Mission and Description

Navy Equivalent: None Mfr's Model: 464-261

The principal mission of the B-52H is the destruction of surface objectives. The normal crew of six consists of pilot, copilot, two bombardier-navigators, 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 the 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, anti-skid brakes, braking parachute for decreasing landing roll distance, a steerable landing gear to aid in crosswind takeoff and landing, and a liquid oxygen system. Major differences from the B-52G include TF-33-P-3 turbofan engines, deletion of water injection system, 120 KVA alternators, NI-CAD batteries, static transformer-rectifier (P.C. power supply), and AN/ASG-21 fire control system.

Development

Design initiated	Jan 59
First flight	Mar 61
First acceptance	Mar 61
Last assembly line production	Jun 62
Last production scheduled for acceptance	Sep 62
Out of production	Oct 62

WEIGHTS

Loading	Lb	LF
Empty	169,822	
Basic	172,222	
Design	*500,000	
Combat	**281,905	2.8
Max. Takeoff	***488,000	1.8
Design Inflight	±450,000	2.0
Alternate Inflight	±488,000	1.8
Design (Normal)		
Landing	270,000	

*Maximum Taxi Weight
**For Basic Mission
***Alternate In-Flight Performance
±Limited by Structure

FUEL

Location	No. Tanks	Gal.
Wing, Outbd	2	2306
Wing, Inbd	4	23,416
Wing, Ctr	1	3228
Fus, Fwd	1	2,049
Fus, Ctr	3	7,140
Fus, Aft	3	8,491
Wing, Ext	2	1,400
	Total	48,030

Grade	JP-4
Specification	MIL-F-5624A

OIL

Nacelle	8	Total 68
Grade		Synthetic
Specification		MIL-L-7808C

DIMENSIONS

Wing	
Span	185.0'
Dihedral (chord plane)	2°30'
Incidence (root)	6°
Sweepback (LE)	36°58'
Length	156.0'
Height (overall)	40.7'
Height (fin folded)	21.5'
Tread (outrigger)	148.4'
Tread (main gear)	11.4'

BOMBS

No.	Class (lb)
27 (family of clusters)	1,000 (max.)

MK-15
MK-28
MK-36
MK-39
MK-41

Note: Airplane will carry 4 GAM-72 and 2 GAM-77 missiles.

Last 18 a/c will have forward firing rocket launchers.

GUNS

No.	Type	Size	Rds Ea	Loc
1	M-61	20mm	1242	Tail tur

CAMERAS

No.	Type	Lens
1	KS-32A	Radar Recording

ELECTRONICS

Command Radio Set	AN/ARC-34A
Aux UHF Radio	AN/ARC-34A
Liaison Radio	AN/ARC-58
Interphone	AN/AIC-18
Omni-Range Receiver	AN/ARN-14
Glide Path Receiver	AN/ARN-67
Marker Beacon Rec	AN/ARN-32
IFF Air to Ground	AN/APX-25A
Radar Beacon	AN/APN-69
Flare Dispenser	Boeing Spec 10-30063
Bomb Nav System	AN/ASB-9A
Auto Astrocompass	MD-1

See page 8 for additional equip.

Loading and Performance—Typical Mission

CONDITIONS			BASIC MISSION I	DESIGN LOAD II	MAX. BOMB LOAD - III	FERRY RANGE IV	ALTERNATE LOAD V	MISSILE LOAD VI
TAKE-OFF WEIGHT	⑤ ⑦	(lb)	450, 000	450, 000	450, 000	450, 000	450, 000	450, 000
Fuel at 6. 5 lb/gal (Grade JP-4)		(lb)	268, 589	260, 889	242, 411	279, 819	269, 989	229, 800
Payload (Bombs)		(lb)	10, 000	17, 700	35, 400	0	8600	17, 700
Payload (Chaff)		(lb)	960	960	960	0	960	960
Payload (Flares)		(lb)	270	270	270	0	270	270
Payload (Missiles)		(lb)						25, 736 ⑪
Wing loading		(lb/sq ft)	112. 5	112. 5	112. 5	112.5	112.5	112. 5
Stall speed (power off)	⑧	(kn)	147	147	147	147	147	147
Take-off ground run at S. L.	①	(ft)	6160	6160	6160	6160	6160	5370 ⑨
Take-off to clear 50 ft	①	(ft)	8120	8120	8120	8120	8120	7250 ⑨
Rate of climb at S. L.	③	(fpm)	3450	3450	3450	3450	3450	3570 ⑩
Rate of climb S. L. (one engine out)	②	(fpm)	3410	3410	3410	3410	3410	3540 ⑩
Time: S. L. to 20, 000 ft	③	(min)	7. 1	7. 1	7.1	7.1	7. 1	6. 8 ⑩
Time: S. L. to 30, 000 ft	③	(min)	12. 5	12.5	12. 5	12. 5	12. 5	12. 0 ⑩
Service ceiling (100 fpm)	③	(ft)	39, 050	39, 050	39, 050	39, 050	39, 050	39,300 ⑩
Service ceiling (one engine out)	②	(ft)	38, 000	38, 000	38, 000	38, 000	38, 000	38, 300 ⑩
COMBAT RANGE	④	(n mi)				8441		
COMBAT RADIUS	④	(n mi)	3890	3765	3470		3910	3105 ⑩
Average cruise speed		(kn)	456	456	456	456	456	456
Initial cruising altitude		(ft)	33, 600	33, 600	33, 600	33, 600	33, 600	33, 600
Target speed	③	(kn)	472	472	472		472	470
Target altitude		(ft)	46, 650	46, 450	45, 850		46, 700	47, 000
Final cruising altitude		(ft)	50, 650	50, 700	50, 720	50, 600	50, 650	50, 300
Total mission time		(hr)	17. 2	16. 7	15.4	18.0	17. 3	13. 7
COMBAT WEIGHT		(lb)	289, 006	284, 906	276, 330	194, 392	289, 751	273, 586
Combat altitude		(ft)	46, 650	46, 450	45, 850	50, 600	46, 700	47, 000
Combat speed	②	(kn)	487	491	499	509	487	493
Combat climb	②	(fpm)	645	765	1045	1495	615	800
Combat ceiling (500 fpm)	②	(ft)	47, 200	47, 500	48, 100	55, 200	47, 200	48, 200
Service ceiling (100 fpm)	③	(ft)	47, 800	48, 100	48, 700	55, 550	47, 800	48, 750
Service ceiling (one engine out)	③	(ft)	46, 250	46, 550	47, 100	53, 800	46, 200	47,200
Max rate of climb at S. L.	②	(fpm)	6990	7100	7400	10, 530	6970	7290
Max speed at optimum altitude	② ⑤	(kn/ft)	555/(20, 700)	555/(20, 700)	555/(20, 700)	555/(20, 700)	555/(20, 700)	553/(20, 500)
Basic speed at 35, 000 ft	②	(kn)	524	524	524	528	524	521
LANDING WEIGHT	②	(lb)	193, 819	193, 426	193, 277	194, 392	193, 891	197, 408
Ground roll at S. L.		(ft)	2370	2370	2370	2390	2370	2420
Ground roll (auxiliary brake)	⑥	(ft)	2170	2170	2170	2190	2170	2210
Total from 50 ft		(ft)	4480	4480	4480	4490	4480	4540
Total from 50 ft (auxiliary brake)	⑥	(ft)	4270	4270	4270	4280	4270	4330

NOTES

① Take-off Power
② Military Power
③ Normal Power
④ Detailed descriptions of radius and range missions are given on page 8
⑤ Limited by structure (load factor = 2. 0)
⑥ With drag chute
⑦ Does not include fuel for 5 min at NRT (5130 lb)
⑧ Initial buffet, flaps down, S. L.
⑨ GAM-77's at take-off power
⑩ GAM-77's at maximum continuous power
⑪ 4 GAM-72's 4840 lb
Droppable racks 590 lb
2 GAM-77A's 20, 306 lb
Total 25, 736 lb

PERFORMANCE BASIS:
Estimated and substantiated by flight test of prototype B-52H airplane

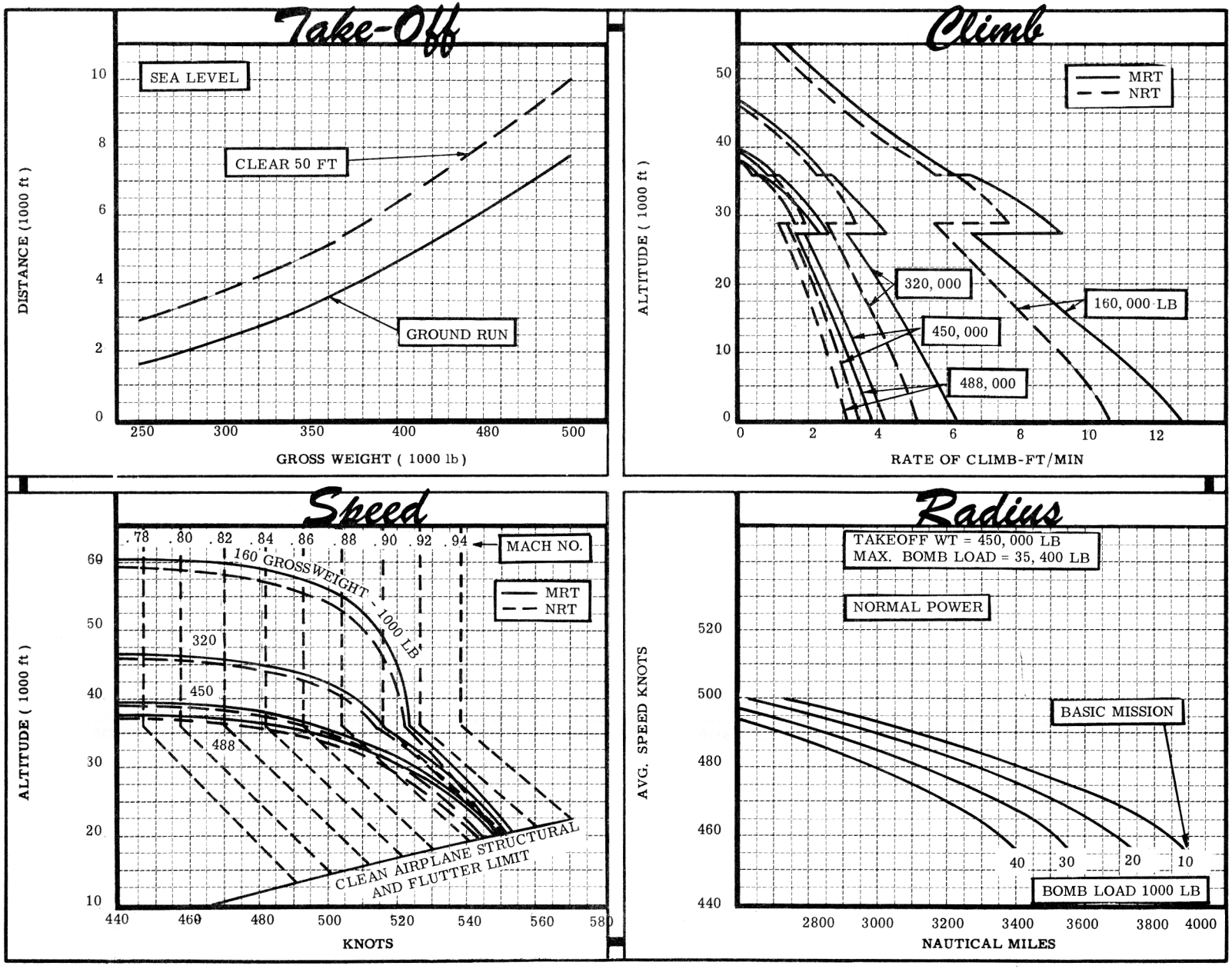
Loading and Performance — Typical Mission

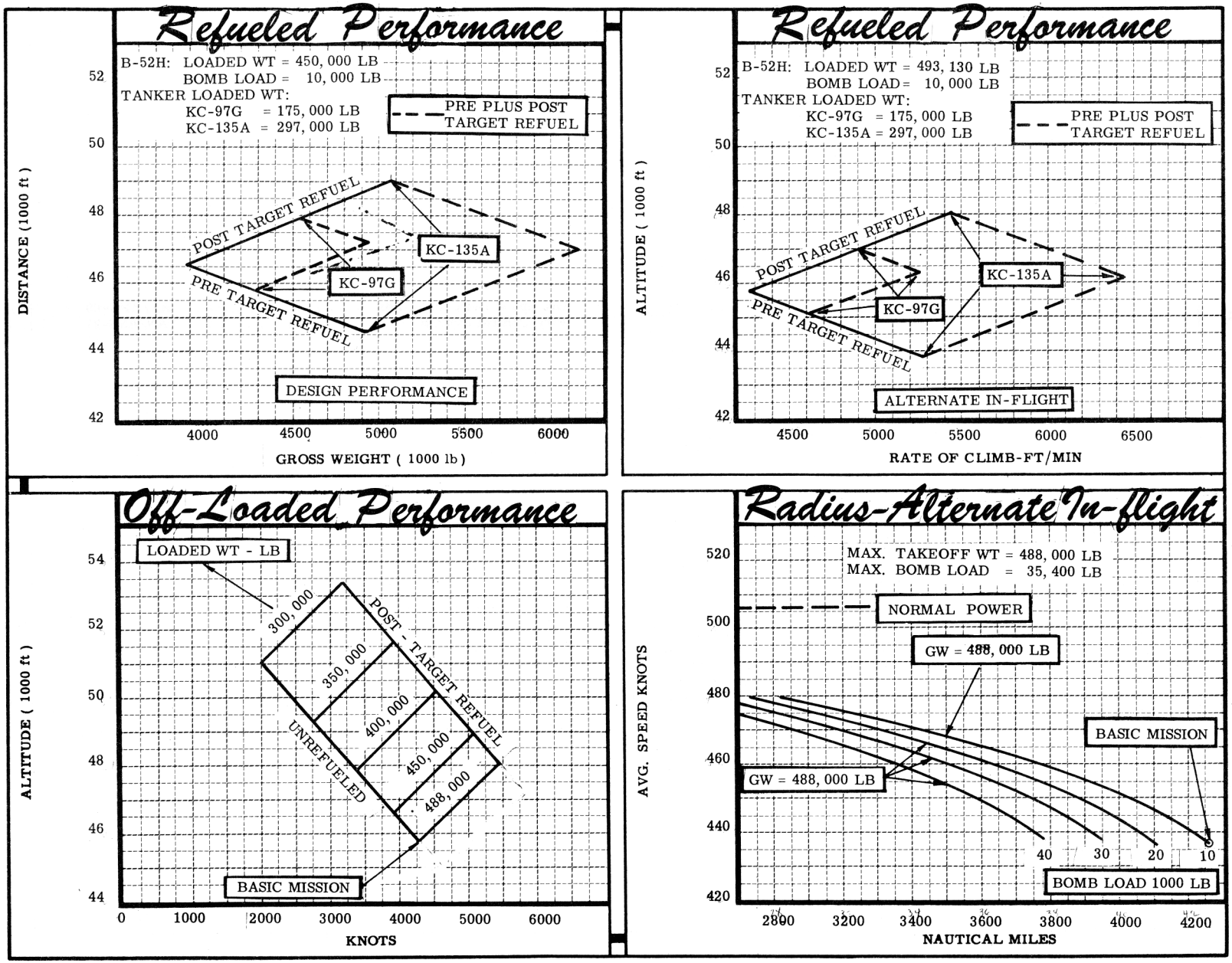
CONDITIONS		BASIC MISSION I	DESIGN LOAD II	MAX. BOMB LOAD - III	FERRY RANGE IV	ALTERNATE LOAD V	MISSILE LOAD VI
TAKE-OFF WEIGHT (7) (lb)		488,000 (5)	488,000 (5)	488,000 (5)	482,376 (12)	488,000 (5)	488,000 (5)
Fuel at 6.5 lb/gal (Grade JP-4) (lb)		306,589	298,889	280,411	312,195	307,989	267,800
Payload (Bombs) (lb)		10,000	17,700	35,400	0	8600	17,700
Payload (Chaff) (lb)		960	960	960	0	960	960
Payload (Flares) (lb)		270	270	270	0	270	270
Payload (Missiles) (lb)							25,736 (11)
Wing loading (lb/sq ft)		122	122	122	122	122	122
Stall speed (power off) (8) (kn)		153	153	153	153	153	153
Take-off ground run at S. L. (1) (ft)		7420	7420	7420	7220	7420	6480 (9)
Take-off to clear 50 ft (1) (ft)		9580	9580	9580	9340	9580	8500 (9)
Rate of climb at S. L. (3) (fpm)		3110	3110	3110	3160	3110	3220 (10)
Rate of climb at S. L. (one engine out) (2) (fpm)		**3070**	**3070**	**3070**	**3110**	**3070**	**3190 (10)**
Time: S. L. to 20,000 ft (3) (min)		8.0	8.0	8.0	7.8	8.0	7.6 (10)
Time: S. L. to 30,000 ft (3) (min)		14.3	14.3	14.3	14.0	14.3	13.6 (10)
Service ceiling (100 ft/min) (3) (ft)		37,400	37,400	37,400	37,600	37,400	37,600 (10)
Service ceiling (one engine out) (2) (ft)		36,300	36,300	36,300	36,550	36,300	36,600 (10)
COMBAT RANGE (4) (n mi)					8810		
COMBAT RADIUS (4) (n mi)		4260	4145	3865		4285	3480 (10)
Average cruise speed (kn)		456	456	456	456	456	456
Initial cruising altitude (ft)		31,950	31,950	31,950	32,200	31,950	31,900
Target speed (kn)		472	472	472		472	470
Target altitude (ft)		45,800	45,550	45,000		45,850	46,150
Final cruising altitude (ft)		50,450	50,500	50,500	50,450	50,450	50,100
Total mission time (hr)		18.8	18.3	17.0	19.4	18.8	15.3
COMBAT WEIGHT (lb)		302,973	298,923	290,340	196,045	303,716	287,015
Combat altitude (ft)		45,800	45,550	45,000	50,450	45,850	46,150
Combat speed (2) (kn)		486	490	499	509	485	491
Combat climb (2) (fpm)		620	740	1015	1500	595	760
Combat ceiling (500 ft/min) (2) (ft)		46,300	46,650	47,100	55,000	46,250	47,250
Service ceiling (100 ft/min) (3) (ft)		46,900	47,150	47,700	55,350	46,850	47,800
Service ceiling (one engine out) (3) (ft)		45,400	45,600	46,200	53,600	45,300	46,250
Max rate of climb at S. L. (2) (fpm)		6640	6730	6960	10,450	6630	6920
Max speed at optimum altitude (2) (kn/ft)		555/(20,700)	555/(20,700)	555/(20,700)	555/(20,800)	555/(20,700)	553/(20,500)
Basic speed at 35,000 ft (2) (kn)		523	523	523	528	523	521
LANDING WEIGHT (lb)		195,758	195,365	195,216	196,045	195,829	199,347
Ground roll at S. L. (ft)		2390	2390	2390	2400	2400	2440
Ground roll (auxiliary brake) (6) (ft)		2180	2180	2180	2190	2190	2230
Total from 50 ft (ft)		4510	4510	4510	4520	4520	4560
Total from 50 ft (auxiliary brake) (6) (ft)		4290	4290	4290	4300	4300	4340

NOTES

(1) Take-off power
(2) Military power
(3) Normal power
(4) Detailed descriptions of radius & range missions are given on page 8
(5) Limited by structure (load factor = 1.8)
(6) With drag chute
(7) Does not include fuel for 5 min at NRT (5130 lb)
(8) Initial buffet, flaps down, S. L.
(9) GAM-77's at take-off power
(10) GAM-77's at maximum continuous power
(11) 4-GAM-72's 4840 lb
Droppable racks 590 lb
2 GAM-77A's 20,306 lb
25,736 lb
(12) Limited by fuel capacity

PERFORMANCE BASIS:
Estimated and substantiated by flight test of prototype B-52H airplane.


Take-Off
SEA LEVEL
CLEAR 50 FT
GROUND RUN
DISTANCE (1000 ft)
GROSS WEIGHT (1000 lb)
Climb
MRT
NRT
320, 000
450, 000
488, 000
160, 000 LB
ALTITUDE (1000 ft)
RATE OF CLIMB-FT/MIN
Speed
MACH NO.
MRT
NRT
160 GROSS WEIGHT - 1000 LB
320
450
488
CLEAN AIRPLANE STRUCTURAL AND FLUTTER LIMIT
ALTITUDE (1000 ft)
KNOTS
Radius
TAKEOFF WT = 450, 000 LB
MAX. BOMB LOAD = 35, 400 LB
NORMAL POWER
BASIC MISSION
BOMB LOAD 1000 LB
AVG. SPEED KNOTS
NAUTICAL MILES


Refueled Performance
B-52H: LOADED WT = 450, 000 LB
BOMB LOAD = 10, 000 LB
TANKER LOADED WT:
KC-97G = 175, 000 LB
KC-135A = 297, 000 LB
PRE PLUS POST TARGET REFUEL
POST TARGET REFUEL
PRE TARGET REFUEL
KC-135A
KC-97G
DESIGN PERFORMANCE
DISTANCE (1000 ft)
GROSS WEIGHT (1000 lb)
Refueled Performance
B-52H: LOADED WT = 493, 130 LB
BOMB LOAD = 10, 000 LB
TANKER LOADED WT:
KC-97G = 175, 000 LB
KC-135A = 297, 000 LB
PRE PLUS POST TARGET REFUEL
POST TARGET REFUEL
PRE TARGET REFUEL
KC-135A
KC-97G
ALTERNATE IN-FLIGHT
ALTITUDE (1000 ft)
RATE OF CLIMB-FT/MIN
Off-Loaded Performance
LOADED WT - LB
300, 000
350, 000
400, 000
450, 000
488, 000
POST - TARGET REFUEL
UNREFUELED
BASIC MISSION
ALTITUDE (1000 ft)
KNOTS
Radius-Alternate In-flight
MAX. TAKEOFF WT = 488, 000 LB
MAX. BOMB LOAD = 35, 400 LB
NORMAL POWER
GW = 488, 000 LB
GW = 488, 000 LB
BASIC MISSION
40
30
20
10
BOMB LOAD 1000 LB
AVG. SPEED KNOTS
NAUTICAL MILES

NOTES

FORMULA: BOMBER RADIUS MISSIONS I, II, III, & V

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 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 home base at long range speeds*, increasing altitude with decreasing airplane weight. Range-free allowances include 5 minutes normal power fuel consumption for starting engines and takeoff, 2 minutes normal power fuel consumption at combat altitude for evasive action, and 30 minutes of maximum endurance (four engines) fuel consumption at sea level plus 5% of initial fuel for landing reserve.

FORMULA: BOMBER RANGE MISSION IV

Take off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speeds*, increasing altitude with decreasing weight until all fuel is consumed. Range-free allowances include 5 minutes normal power fuel consumption for starting engines and takeoff, and 30 minutes of maximum endurance (four engines) fuel consumption at sea level plus 5% of initial fuel for landing reserve.

FORMULA: BOMBER RADIUS MISSION VI

Take off and climb on course to optimum cruise altitude at normal power (GAM-77's at maximum continuous power). Cruise out at long range speed*, increasing altitude with decreasing weight. Release GAM-77's and GAM-72's their respective ranges from bomb target. 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 home base at long range speeds*, increasing altitude with decreasing airplane weight. Range-free allowances include 5 minutes normal power fuel consumption for starting engines and takeoff, 2 minutes normal power fuel consumption at combat altitude for evasive action, and 30 minutes of maximum endurance (four engines) fuel consumption at sea level plus 5% of initial fuel for landing reserve.

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

GENERAL DATA:

(a)The prescribed fuel reserves for Basic Missions are equivalent to the following reserve ranges at 99% maximum range conditions:

B-52H Bomber	974 Nautical Miles
	1060 Nautical Miles (Alternate In-Flight)

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

True Hdg Comp Gr	AN/AJN-8
Grd Spd & Drift Angle Rdr	AN/APN-89
Fire Control System	AN/ASG-21
TACAN	AN/ARN-21
Chaff Dispenser (2)	Boeing Spec
ECM Receiver	AN/ALR-19
ECM Receiver (2)	AN/ALR-18
ECM Transmitter (3); (2) Hi; (1) Lo	AN/ALT-15
ECM Transmitter (2)	AN/ALT-16
ECM Transmitter (4)	AN/ALT-68
ECM Transmitter (6) (Complete Provisions only)	AN/ALT-13
VGH Sig Data Rec Set (Space Provisions only)	A/24U-3
IFF Air to Air	AN/APX-27B
IFF Air to Air Interrogator Fwd Coverage	
IFF Air to Air Interrogator Aft Coverage	

PERFORMANCE REFERENCE:

Boeing Document D3-3211, "Substantiating Data Report - Model B-52H" TF33-P-3 engines.

REVISION BASIS:

To reflect increase in empty weight and resulting performance changes due to ECP 1050 incorporation.

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Ohio 45433