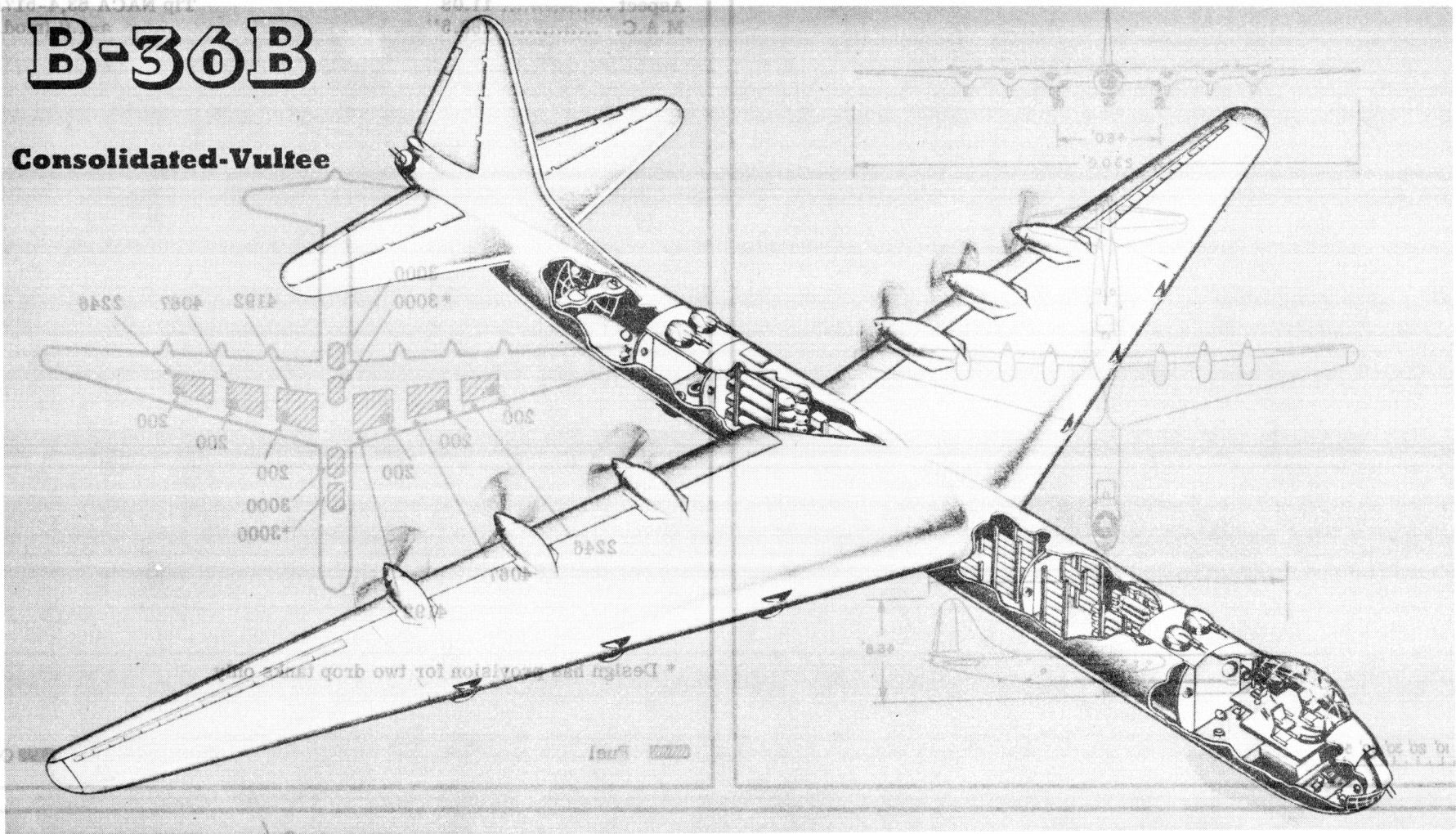


B-36B

Consolidated-Vultee

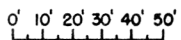
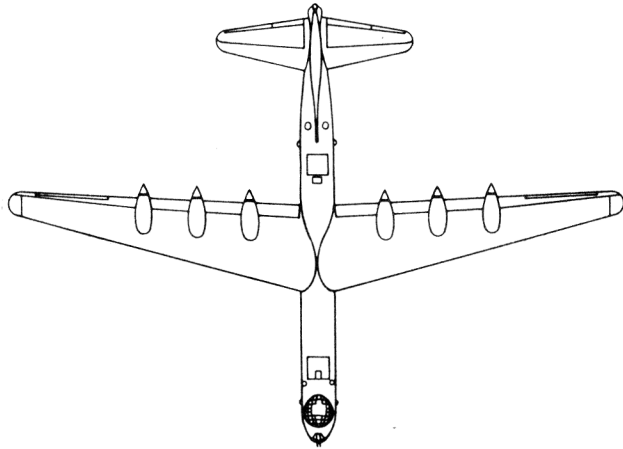
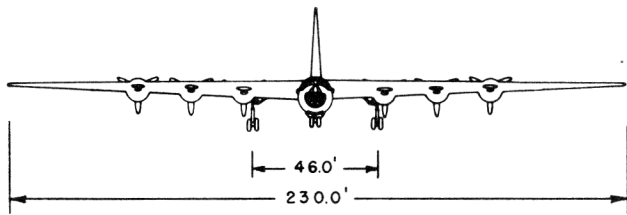


Standard Aircraft Characteristics

BY AUTHORITY OF
COMMANDING GENERAL
AIR MATERIAL COMMAND
U.S. AIR FORCE

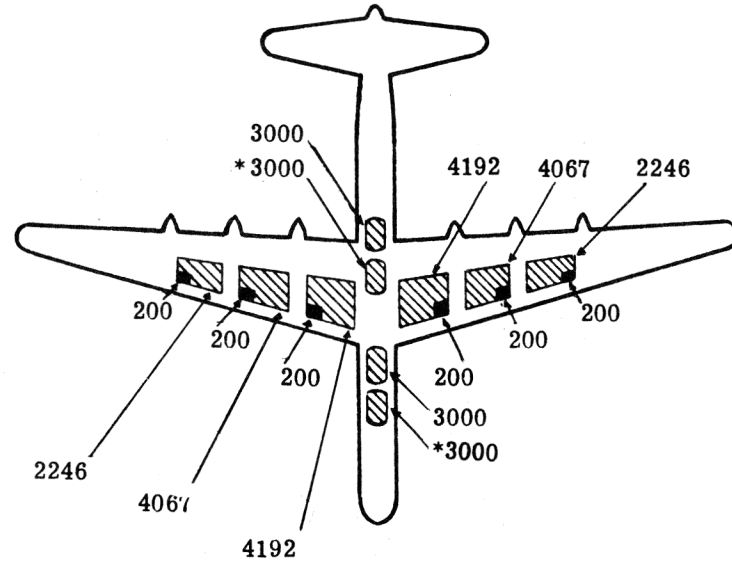
SIX R-4360-41

PRATT-WHITNEY



Wing Area 4772 sq ft
 Aspect 11.08
 M.A.C. 280.5'

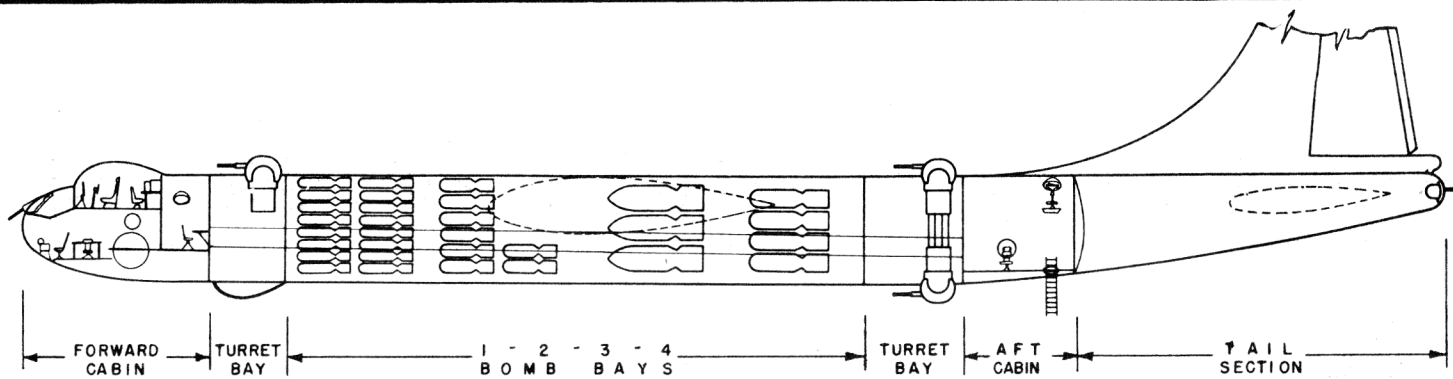
Wing Section Root NACA 63,4-422A
 Tip NACA 63,4-517A
 a=1.0 (mod.)



* Design has provision for two drop tanks only

Fuel

Oil



POWER PLANT

No. & Model (6) R-4360-41
 Mfr..... Pratt-Whitney
 Superch Dual Turbo
 Red. Gear 0.375
 Prop Mfr Curtiss
 Prop Dia 19.0'
 Prop Type Electric
 Blade Design 1129-8C6-24

ENGINE RATINGS

BHP - RPM - TURBO

T.O: *3500 - 2700 - S.L.
 3250 - 2700 - S.L.
 Mil: *3500 - 2700 -
 3250 - 2700 -
 Nor: 2650 - 2550 - S.L.

*Fluid injection

Mission and Description

The B-36B is a long range, high altitude, very heavy bombardment aircraft. The fuselage consists of a forward pressurized cabin, one non-pressurized turret bay, four non-pressurized bomb bays, aft pressurized cabin and the non-pressurized rear fuselage section.

Cabin heating, defrosting of blisters and enclosures; and propeller, wing and tail and anti-icing are accomplished by heated air.

The defensive armament consists of eight remotely controlled turrets, six of which are retractable.

Engine-driven alternators supply 3 phase, 400 cycle AC power for the primary electrical system. DC electrical requirements are fulfilled from DC rectifiers. Hydraulic power is used for landing gear actuation, brakes and nose-wheel steering.

Major differences of B-36B over B-36A are as follows: Change to engines with fluid injection, provisions for larger bombs, additional radio equipment.

Development

First Flight: 8 July 1948
 In production:

W E I G H T S

Loading	Gross	L.F.
Empty	137,165(A)	
Basic	145,180(E)	
Design	278,000	2.67
Combat*	221,400	
Max T.O.†	326,000	2.0
Max Land‡	326,000	2.0

*For basic mission

†Limited by performance

‡Limited by take-off weight

(A) Actual

(E) Estimated

F U E L

Loc.	Tanks	Gal.
Wings,outbd*..	2	4492
Wings,inbd	2	8384
Wings,crt*.....	2	8134
Bomb bay*....	*4	12000
*Self-sealing	Total	33,010
†See page 6		
Spec.	AN-F-48	
Grade	115/145	
plus		
Water/Alcohol(gal)		54

OIL

Cap.(gal)	1200
Spec.	AN-0-8
Grade	W-1100;S-1120

DIMENSIONS

Span 230.0'
 Length 162.1'
 Height 46.8'
 Tread 46'
 Prop Grd Clearance 4.46'

B O M B S

No.	Size	Type
2	43,000	G.P.
3	22,000	D.P.
4	12,000	D.P.
12	4,000	G.P.
28	2,000	G.P.
44	1,600	A.P.
72	1,000	G.P.
132	500	G.P.

Max Bomb Load: 86,000 lb

G U N S

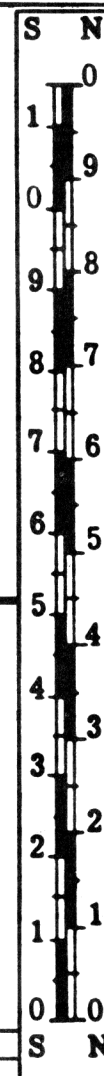
No.	Size	Rds ea.	Loc.
2	20mm	400	Fus,nose
4	20mm	600	Fus,up,fwd
4	20mm	600	Fus,up,aft
4	20mm	600	Fus,lwr,aft
2	20mm	600	Fus,tail

ELECTRONICS

VHF Command	AN/ARC-3
Liaison	AN/ARC-11
Radio Compass	AN/ARN-7
Interphone	AN/AIC-2A
IFF	SCR-695B
Blind Approach	RC-103A
Glide Path	AN/ARN-5A
Marker Beacon	RC-193
Altimeter	SCR-718
Bombing Nav. Radar	AN/APQ -24
Loran	AN/APN-9
ECM	AN/APQ-8
ECM	AN/APR-24
ECM	AN/APT-1,-4,-5
Gun Laying Radar	AN/APG-3
Range Recvr.	BC-453-B

Loading and Performance - Typical Mission

C O N D I T I O N S	B A S I C		M A X B O M B S	H I G H A L T.	M A X S P E E D	F E R R Y
	R A D I U S	R A N G E	R A D I U S	R A D I U S	R A D I U S	R A N G E
	I	II	III	IV	V	VI
TAKE-OFF WEIGHT (lb)	326,000	326,000	317,500	294,000	326,000	326,000
Fuel & Oil (gal)	25,880/1025	25,880/1025	12,646/506	21,067/844	25,880/1025	28,070/1123
Military Load (lb)	10,000	10,000	86,000	10,000	10,000	None
Total Ammunition (rds/cal)	9200/20mm	9200/20mm	9200/20mm	9200/20mm	9200/20mm	None
Wing Loading (lb/sq ft)	68.32	68.32	66.53	61.60	68.32	68.32
Stall Speed -(power off) (kn)	100	100	99	95	100	100
TAKE-OFF DISTANCE SL ④						
Ground Run (no wind) (ft)	5900	5900	5350	4170	5900	5900
To Clear 50 ft Obst (ft)	8000	8000	7250	5610	8000	8000
CLIMB FROM SL						
Rate of Climb at SL ③ (fpm)	500	500	540	670	500	500
Time To 10,000 Feet ③ (min)	23.2	23.2	19.8	16.7	23.2	23.2
Time To 20,000 Feet ③ (min)	59.5	59.5	46.5	36.7	59.5	59.5
Service Ceiling (100 f.p.m.) ③ (ft)	24,100	24,100	25,200	30,000	24,100	24,100
COMBAT RANGE (n.mi)	3710	6946	1610	2850	2462	8478
COMBAT RADIUS (n.mi)	3710	6946	1610	2850	2462	8478
Avg. Cruising Speed (kn)	193	185	195	260	288	192
Total Mission Time (hr)	38.45	37.55	16.5	21.92	17.1	44.35
Cruising Altitude (ft)	⑤	⑤	⑤	⑤	⑤	⑤
COMBAT WEIGHT (lb)	221,400	171,360	181,420	205,000	216,600	—————
Combat Altitude (ft)	25,000	25,500	25,000	40,000	35,000	—————
SPEED						
Max Speed (combat alt) ② (kn)	314	322	319	309	330	—————
Max Speed ② (kn/ft)	327/35,000	338/35,500	336/35,000	331/34,000	329/35,000	—————
CLIMB						
Rate of Climb (combat alt) ② (fpm)	1130	1720	1600	290	870	—————
Rate of Climb At SL ② (fpm)	1530	2160	2008	1710	1578	—————
CEILING						
Combat Ceiling ② (ft)	37,500	40,800	40,150	38,600	37,800	—————
Service Ceiling ③ (ft)	40,500	43,700	43,100	41,600	40,800	—————
LANDING WEIGHT SL (lb)	163,321	—————	156,918	159,530	163,321	160,401
Ground Roll ④ (ft)	1530	—————	1470	1500	1530	1510
From 50' Obst ④ (ft)	2720	—————	2680	2710	2720	2680



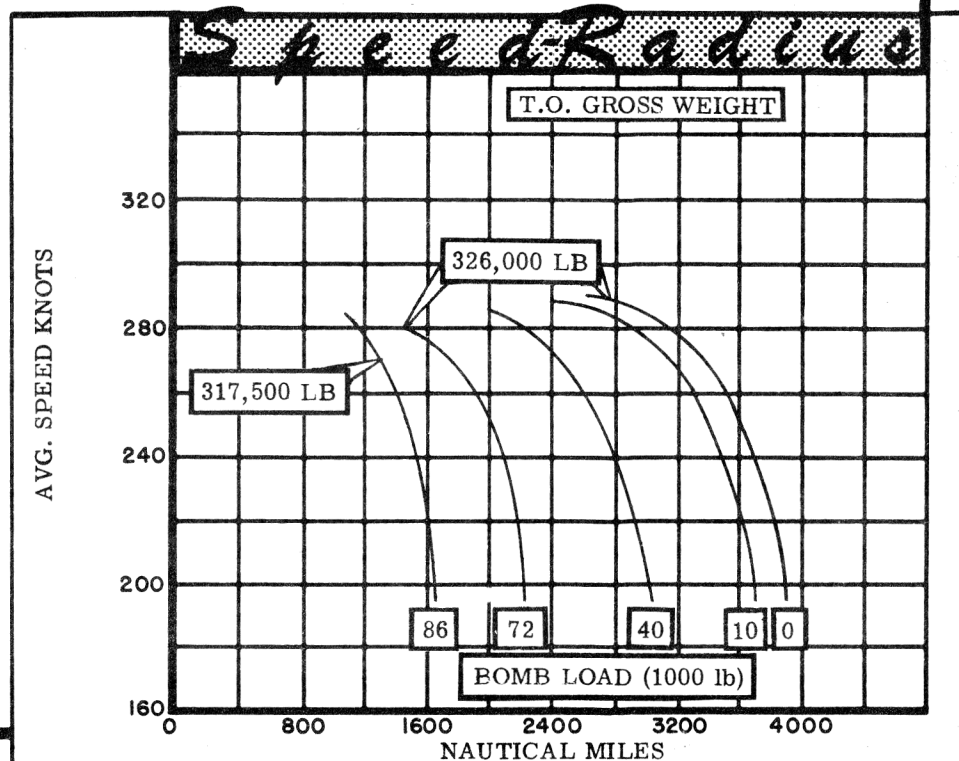
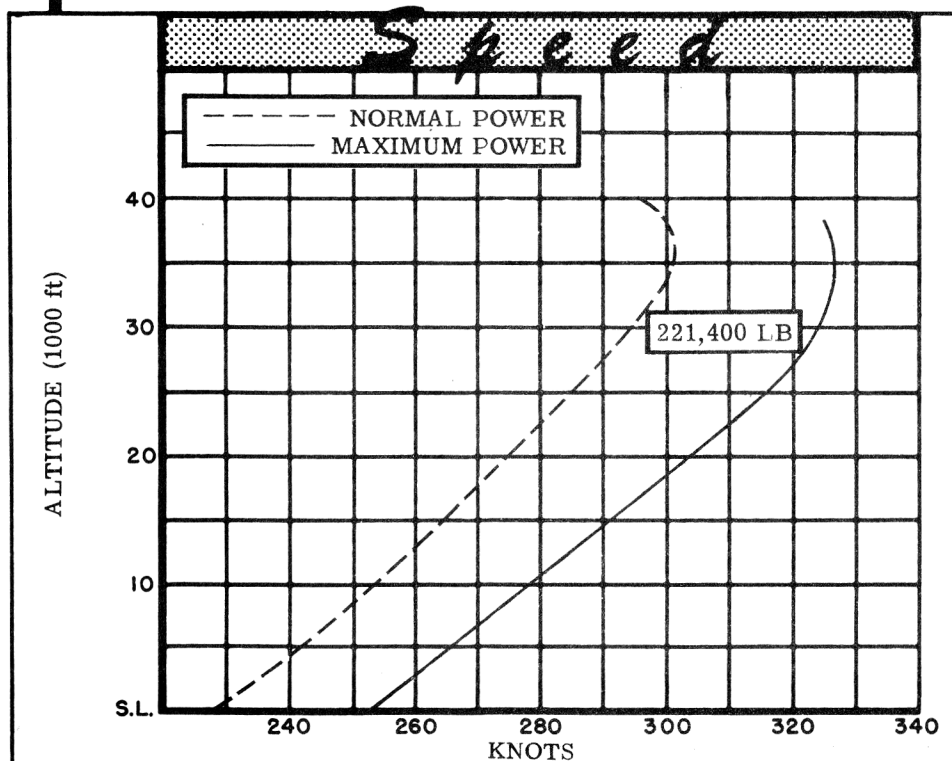
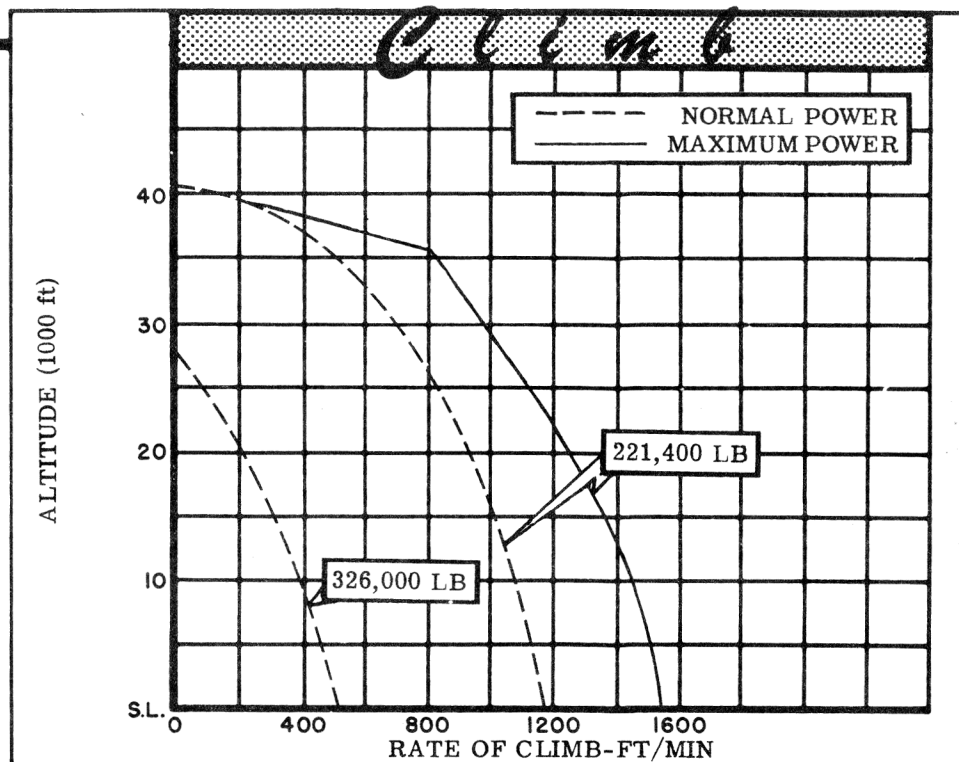
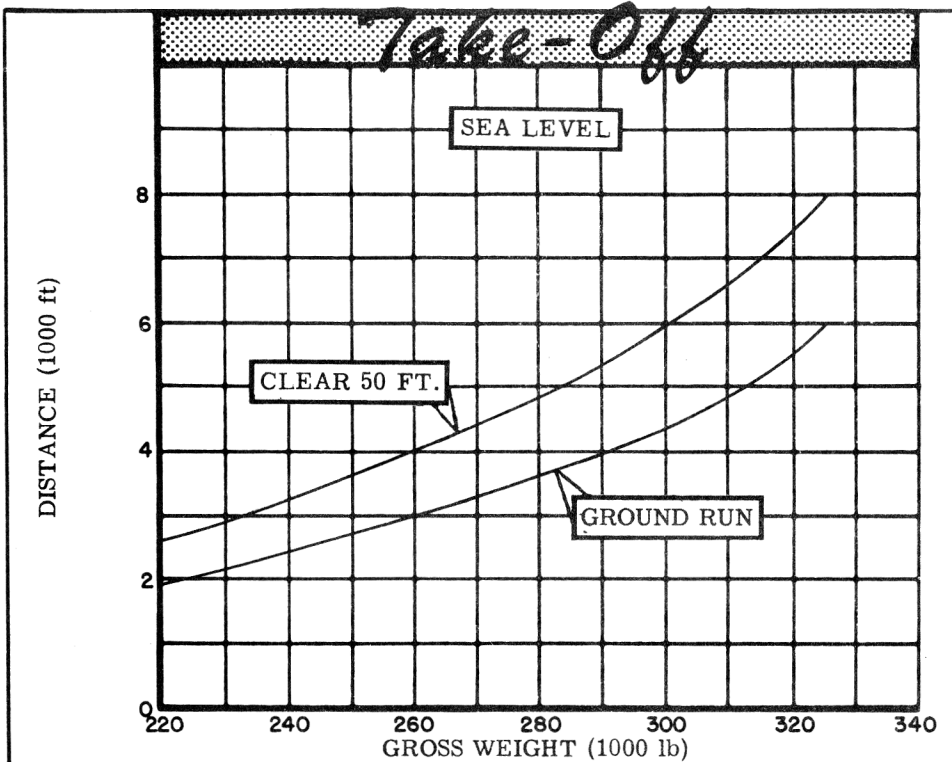
NOTES

- ① Take-off power
- ② Max power
- ③ Normal power
- ④ Take-off and landing distances are obtainable at sea level using normal

- technique. For airport planning add 25% to distances shown
- ⑤ Detailed descriptions of the RADIUS & RANGE missions are given on page 6
- ⑥ Radius mission if radius is shown

CONDITIONS:

- (a) Performance Basis: NACA standard day, no wind, single airplane
- (b) Fuel consumption used in computing RADIUS & RANGE is increased 5% based on manufacturer's estimates
- (c) Performance is based on powers shown on page 6.
- (d) RADIUS & RANGE are based on operation where maximum continuous BMEP (188.6 psi) is maintained in all normal power settings.



N O T E SRADIUS: MISSIONS I & III

Warm-up and take-off (allowing 10 min. normal rated power fuel consumption) and climb to 10,000 feet using normal rated power. Cruise at long range speeds at 10,000 feet to point where cruising climb is advantageous. Cruising climb is used to point where normal rated power climb is made to arrive at 25,000 feet thirty minutes prior to bomb drop. Long range speeds are flown for 15 minutes followed by a 15 minute normal rated power bomb run. Bombs are dropped and 5 minutes evasive action conducted (normal power, no distance credited); following evasive action a 10 minute normal rated power run out from the target area is made. Aircraft cruises toward base at long range speeds to point where cruising climb operation is entered to complete return to base. Endurance and landing reserve is 5% of the initial fuel loading.

RANGE: MISSIONS II & III

Warm-up and take-off (allowing 10 minutes normal rated power fuel consumption) and climb to 10,000 feet using normal rated power. At 10,000 feet the aircraft cruises at long range speeds to point where weight permits a gain by using a cruising climb. Cruising climb operation continues to point where a normal rated power climb is made to arrive at 25,000 feet 30 minutes prior to bomb drop. Aircraft cruises at long range speeds to point where 90% of initial fuel has been consumed; bombs are dropped. Endurance and landing reserve is 10% of initial fuel load.

RADIUS: MISSION IV

Allowances are the same as for missions I & III. Initial climb at normal rated power is to an altitude of 25,000 feet; climb is made to reach 40,000 feet 1000 nautical miles prior to target (instead of 30 min.). Following bomb drop aircraft cruises at long range speeds at 40,000 feet for 1000 miles: descent (no distance gained; no fuel used) is made to 35,000 feet from which point remainder of return flight is made in a cruising climb.

RADIUS: MISSION V

Allowances are the same as for missions I & III: initial climb at normal rated power is to 20,000 feet at which point a high speed cruising climb flight to a point 15 min. prior to bomb drop point is initiated.

Bomb run, drop, and escape operations are as for mission I, after which the aircraft returns to base at high cruising speeds using a cruising climb technique.

RANGE: MISSION VI

Warm-up and take-off (allowing 10 minutes normal rated power fuel consumption) and climb to 10,000 feet using normal rated power. Cruise at long range speeds at 10,000 feet to point where weight permits cruising climb techniques to be advantageous; continue flight in cruising climb to point where 90% of initial fuel load has been consumed. Endurance and landing reserve is 10% of initial fuel load.

GENERAL DATA:

The B-36B may be field modified to carry a total of four bomb bay tanks, however the present weight restriction of 326,000 pounds limits usage to 7060 gallons of bomb bay fuel requiring three bomb bay tanks.

For detail planning refer to T.O. ANOI-5EUB-1.

In computing all radius and range missions the aircraft is flown at speeds corresponding to 99% maximum miles per pound. Where analysis indicates an improvement in miles per pound by using a cruising climb, this procedure has been utilized.

ENGINE RATINGS:

The power values used for performance calculations are as follows:

R - 4360 - 41			
	BHP	RPM	ALT.**
T.O:	*3500	2700	S.L.
Max:	3250	2700	34,000
	+3250	2400	34,000
	2650	2550	38,700

*Fluid injection
 +War emergency (military power 2400 rpm, high BMEP)
 **With turbo