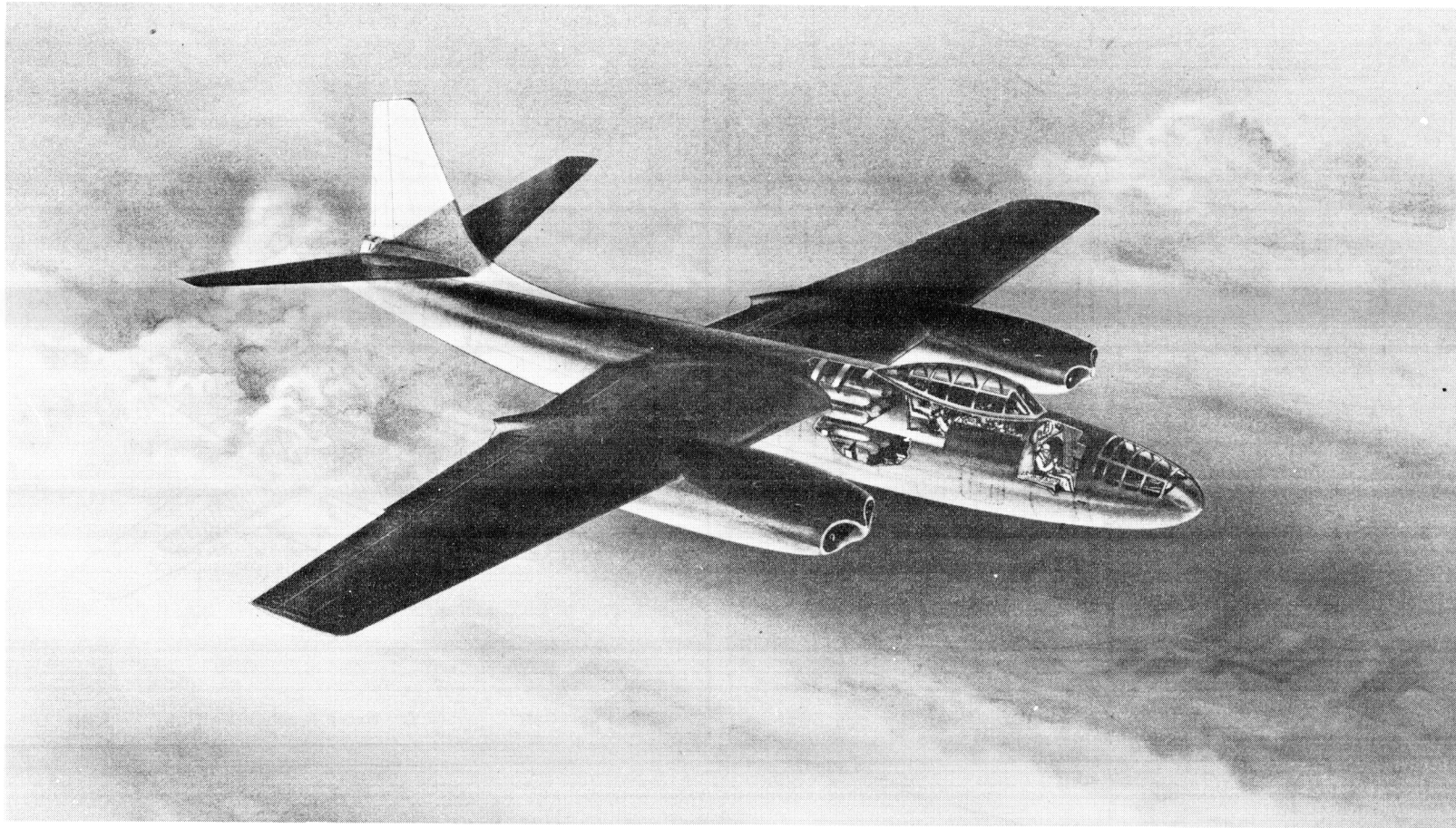


A-1  
B-45A/c/p



## *Standard Aircraft Characteristics*

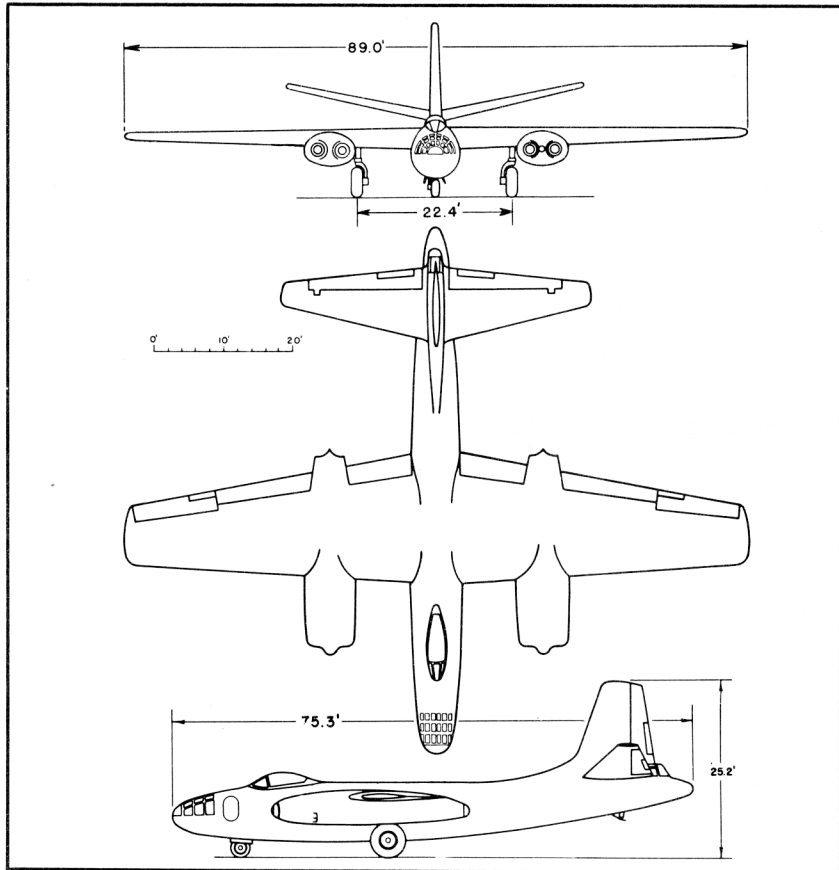
BY AUTHORITY OF  
COMMANDING GENERAL  
WRIGHT AIR DEVELOPMENT CENTER  
U. S. AIR FORCE

# **B-45A**

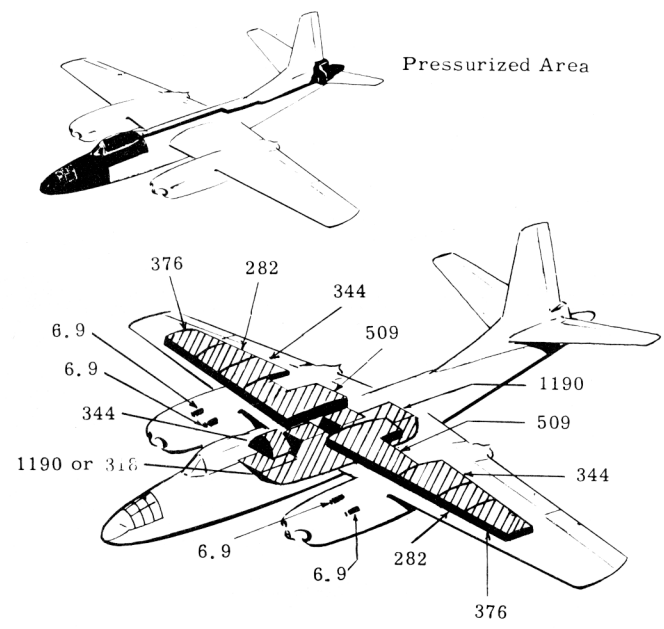
## **TORNADO**

**North American**

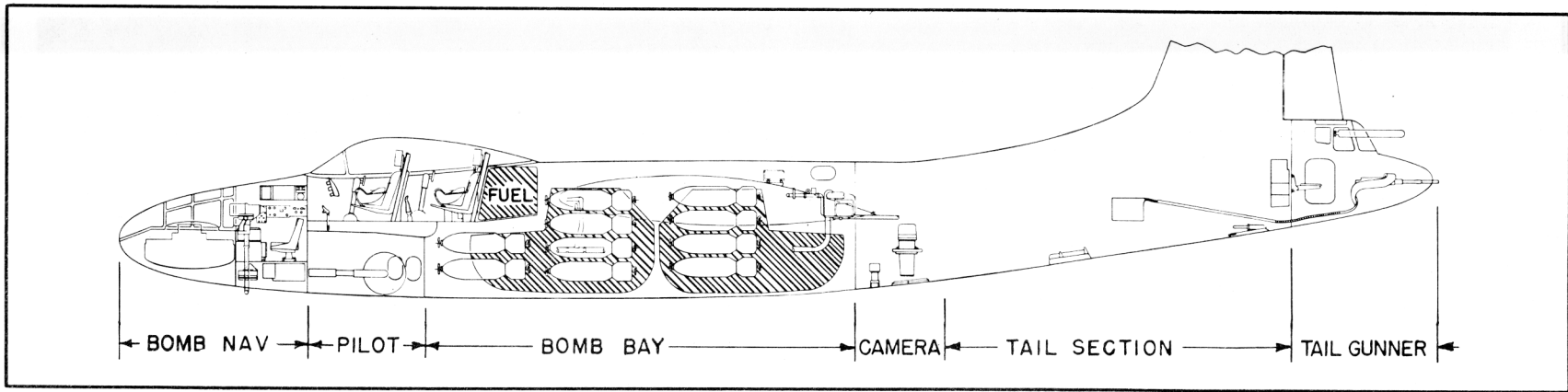
TWO J47-GE-7 or -13  
AND  
TWO J47-GE-9 or -15  
GENERAL ELECTRIC



Wing Area ..... 1175 sq ft      Wing Section  
 M. A. C. .... 168.18 in.      Root..... N. A. C. A. 66, 2-215  
 Aspect Ratio..... 6.74      Tip..... N. A. C. A. 66, 1-212



▨ Fuel (Gal)      ☆ Water Alcohol (Gal)      ■ Oil (Gal)



### POWER PLANT

No. & Model (2)J47-GE-7 or -13 and  
(2)J47-GE-9 or -15  
Mfr ..... General Electric  
Engine Spec No. .... E-581 & E-582  
Type ..... Axial  
Length ..... 144"  
Diameter ..... 39"  
Weight (dry) ..... 2525 lb

ATO  
No. & Model ..... (2) XLR13-AJ-1  
Mfr ..... Aerojet  
Spec No. .... S60ALD-4000  
Weight (dry) ..... 800 lb ea

### ENGINE RATINGS

S. L. S.	LB - RPM - MIN
Max:(wet)	*6000 - 7950 - 5
(wet)	**5820 - 7950 - 5
Mil:	*5200 - 7950 - 30
	**5000 - 7950 - 30
Nor:	*4320 - 7370 - Cont
	**4250 - 7370 - Cont

\*-13 and -15 engines  
\*\*-7 and -9 engines

(Water injection not utilized in B-45A's)

ATO  
Thrust (lb ea.) ..... 4000 lb  
Duration(sec.) ..... 60

## Mission and Description

Navy Equivalent: None Mfr's Designation: NA-147

The primary mission of the B-45A airplane is the destruction by bombs of land or naval materiel objectives.

The crew of four consists of the pilot, co-pilot-radio operator, bombardier-navigator and tail gunner.

Special features provided in the B-45A include thermal anti-icing, cabinpressurization, heating and cooling, ejection type seats for pilot and co-pilot and emergency escape hatches for bombardier-navigator and tail gunner. Communication equipment, emergency flight controls and instruments are installed at the co-pilot's station.

A type E-4 Auto Pilot, bombing-navigation radar and A-1 Fire Control System are installed as standard equipment.

## Development

E. O. initiated (XB-45): ..... Aug 44  
First flight: ..... 24 Feb 48  
First acceptance: ..... Apr 48  
Production completed: ..... Mar 50

### WEIGHTS

Loading	Lb	L. F.
Empty	45,694 (A)	
Basic	46,101 (A)	
Operating	48,055	
Design	82,600	3.00
Combat	*56,400	
Max T. O.	†91,775	
Max. Land	‡90,428	2.00

(A) Actual  
\*For Basic Mission  
†Limited by space  
‡Limited by gear strength

### FUELS

Location	No. Tanks	Gal
Wing*	8	3022
Fus*	1	344
Bomb bay	2	2380
*s. s.	Total	5746
Grade		JP-3

See General Data, note d, page 6

### OIL

Cap. (gal) ..... 27.6  
Grade ..... 1010

### DIMENSIONS

Wing  
Span ..... 89.0'  
Incidence (root) ..... 3°  
(tip) ..... 0°30'  
Dihedral ..... 1°  
Sweepback (LE) ..... 3°30'  
Length ..... 75.3'  
Height ..... 25.2'  
Tread ..... 22.4'

### BOMBS

No.	Size	Type
1	22,000	Grand Slam
1	12,000	Tall Boy
2	4000	G. P.
4	2000	G. P.
14	1000	G. P.
27	500	G. P.
16*	500	G. P.

Max Bomb Size: ..... 22,000 lb  
\*Loading allows for one bomb bay tank

### GUNS

No.	Cal	Rds.ea.	Location
2	.50	600	Tail,tur

### ELECTRONICS

VHF Command ..... AN/ARC-3  
Liaison ..... \*AN/ARC-8  
Radio Compass ..... AN/ARN-6  
Interphone ..... USAF Combat  
IFF ..... \*\*SCR-695B  
Marker Beacon ..... RC-193A  
Localizer ..... RC-103A  
Glide Path ..... AN/ARN-5A  
Range Receiver ..... BC-453  
Bomb. -Nav. Radar ..... AN/APQ-24  
ECM ..... \*\*AN/APT-5  
\*Provisions only, on some airplanes.  
\*\*Provisions only

# Loading and Performance - Typical Mission

C O N D I T I O N S			BASIC MISSION	MAXIMUM BOMBS	FERRY RANGE
			I	II	III
TAKE-OFF WEIGHT	(lb)		81,418	91,026	85,140
Fuel at 6.5 lb/gal (grade JP-3)	(lb)		23,900	21,900	37,350
Military load (bombs)	(lb)		10,000	22,000	—
Military load ( )	(lb)		—	—	—
Wing loading	(lb/sq ft)		69.3	77.5	72.4
Stall speed (power off, landing configuration)	(kn)		115	121	117
Take-off ground run at SL	① (ft)		3430	4400	3780
Take-off ground run (wet)	(ft)		—	—	—
Take-off to clear 50 ft	① (ft)		5000	6250	5460
Take-off to clear 50 ft (wet)	(ft)		—	—	—
Rate of climb at SL	① (fpm)		3600	3230	3450
Time: SL to 30,000 ft	① (min)		13.8	16.8	14.2
Time: SL to 20,000 ft	① (min)		7.5	12.0	7.8
Service Ceiling (100 fpm)	② (ft)		35,750	32,750	34,530
Service Ceiling (one engine out)	(ft)		—	—	—
COMBAT RANGE	③ (n. mi.)		1036	834	1886
Average speed	(kn)		377	383	375
Initial cruising altitude	(ft)		38,000	33,500	36,500
Final cruising altitude	(ft)		43,000	39,000	46,000
Total mission time	(hr)		2.75	2.18	5.04
COMBAT RADIUS	③ (n. mi.)		535	434	—
Average speed	(kn)		393	377	—
Initial cruising altitude	(ft)		38,000	33,500	—
Bombing altitude	(ft)		40,000	36,200	—
Bomb run speed	② (kn)		408	408	—
Final cruising altitude	(ft)		46,200	36,200	—
Total mission time	(hr)		2.72	2.34	—
COMBAT WEIGHT	④ (lb)		56,400	56,000	50,305
Combat altitude	(ft)		35,000	36,200	46,000
Combat speed	① (kn)		440	434	434
Combat climb	① (fpm)		1250	1300	350
Combat ceiling (500 fpm)	① (ft)		42,500	42,800	45,000
Service ceiling (100 fpm)	① (ft)		46,000	46,800	48,500
Service ceiling (one engine out)	(ft)		—	—	—
Max rate of climb at SL	① (fpm)		5200	5250	5400
Max speed at 4000 ft	① (kn)		492	492	492
LANDING WEIGHT	(lb)		49,910	49,316	50,305
Ground roll at SL	(ft)		2100	2050	2150
Ground roll (auxiliary brake)	(ft)		—	—	—
Total from 50 ft	(ft)		3970	3880	4050
Total from 50 ft (auxiliary brake)	(ft)		—	—	—

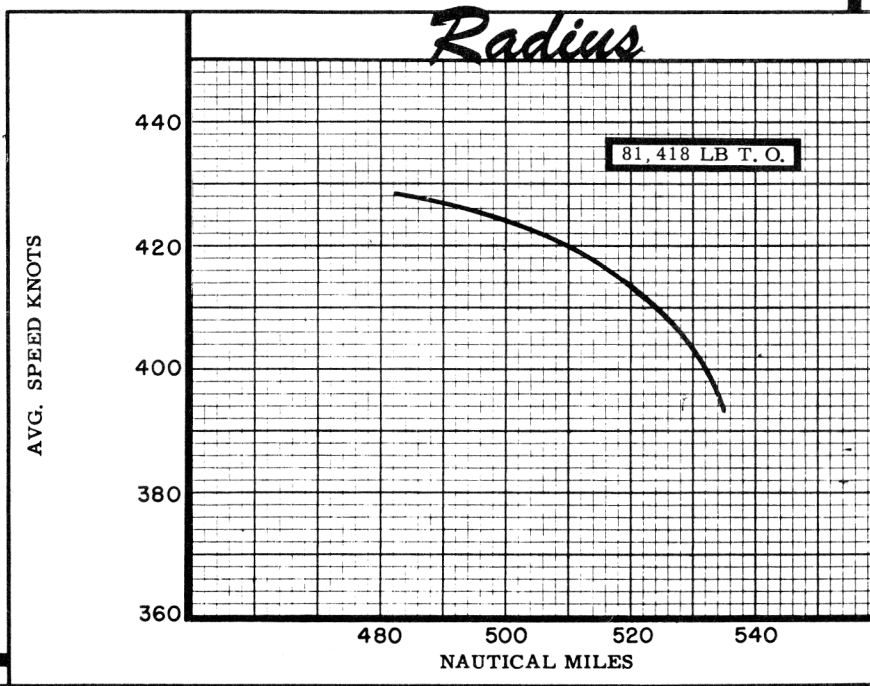
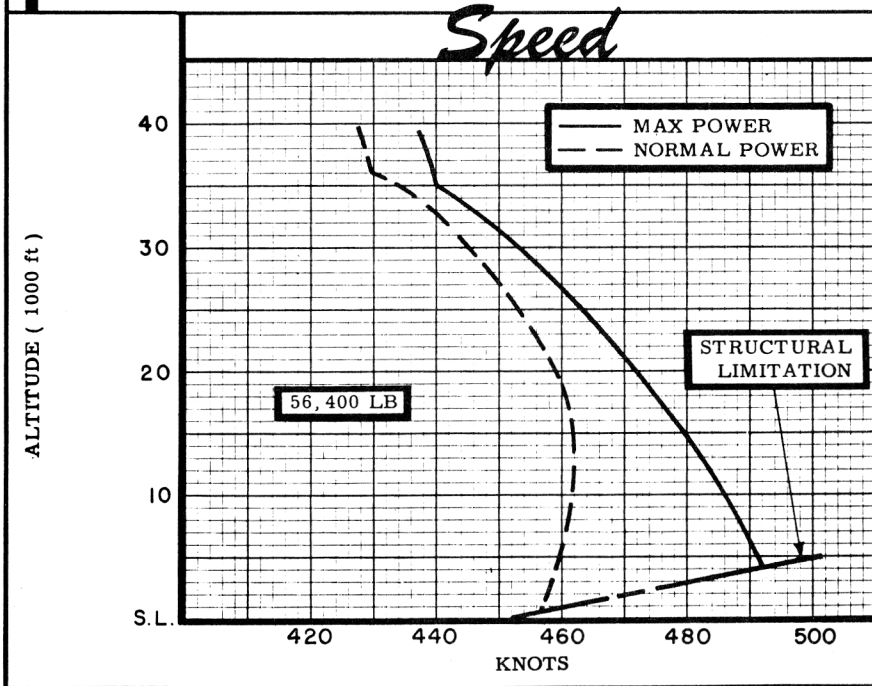
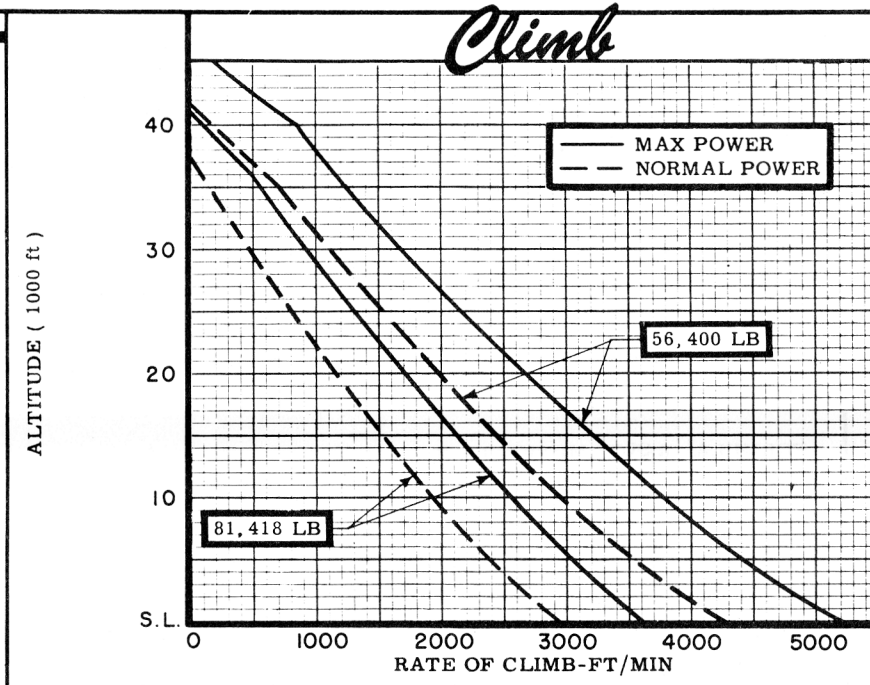
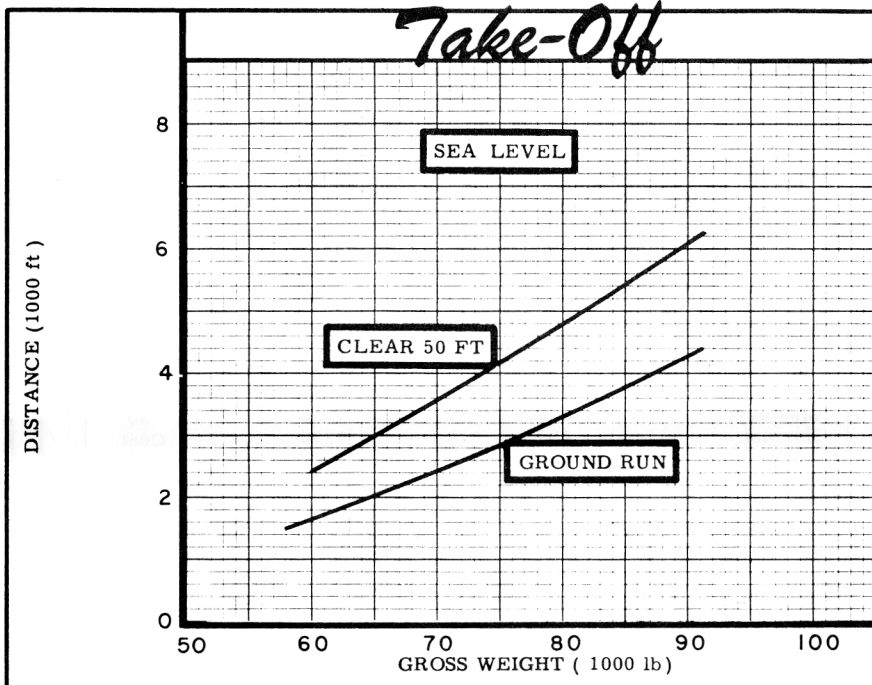
NOTES

- ① Max power
- ② Normal power
- ③ Detailed descriptions of RADIUS and RANGE missions are given on page 6.

- ④ For Radius Mission if radius is shown.

**PERFORMANCE BASIS:**

- (a) Data source: Flight Test
- (b) Performance is based on powers shown on page 6.



**N O T E S**

FORMULA: RADIUS MISSION I & II

Start engines, take-off, climb on course to cruise ceiling at max power, cruise at long range speeds at cruise ceiling (see note e), (droppable bomb bay tanks are dropped when empty), make bomb run at constant altitude for 6 minutes at normal power, drop bombs, conduct normal power evasive action, climb on course to cruise ceiling at maximum power, start cruise to home base at long range speeds at cruise ceiling. Range free allowances include 5 minutes normal power fuel consumption for starting engines and take-off, 6 minutes for normal power evasive action, plus 10% of initial fuel for reserve.

FORMULA: RANGE MISSION I & II

Start engines, take-off, climb on course to cruise ceiling at max power, cruise at long range speeds at cruise ceiling (see note e) until 90% of initial fuel has been used (droppable bomb bay tanks are dropped when empty). Range free allowances include 5 minutes normal power fuel consumption for starting engines and take-off, plus 10% of initial fuel for reserve.

FORMULA: RANGE MISSION III

Start engines, take-off, climb on course to cruise ceiling at max power, cruise at long range speeds at cruise ceiling (see note e) until 90% of initial fuel has been used (bomb bay tanks are carried the entire distance). Range free allowances include 5 minutes normal power fuel consumption for starting engines and take-off, plus 10% of initial fuel for reserve.

GENERAL DATA:

(a) Performance data are calculated from flight test results of service model.

(b) Performance data are based on average engine ratings obtained from flight test:

S. L. Static	LB	RPM	MIN
Max(wet)	5700	7950	5
Max(dry)	5000	7950	30
Normal:	4300	7370	Cont

(c) Weight data are based on the actual weight of B-45A-3 airplane No. 96, AF Serial 47-96 as shown in North American Report NA-50-1230, dated 12 October 1950, "Actual Weight and Balance Report for Model B-45A-5 Airplane NAA Model NA-147", with the exception that fuel weights have been corrected for JP-3.

(d) Recommended fuel - Spec. MIL-F-5624, JP-3, alternate fuel Spec. MIL-F-5616, JP-1, or gasoline (not to exceed grade 100/130) MIL-F-5572.

(e) Cruising ceiling as used herein is defined as the altitude at which the rate of climb is 300 FPM with normal power at momentary weight.

(f) For detailed planning, refer to Technical Order AN01-60GFA-1.

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