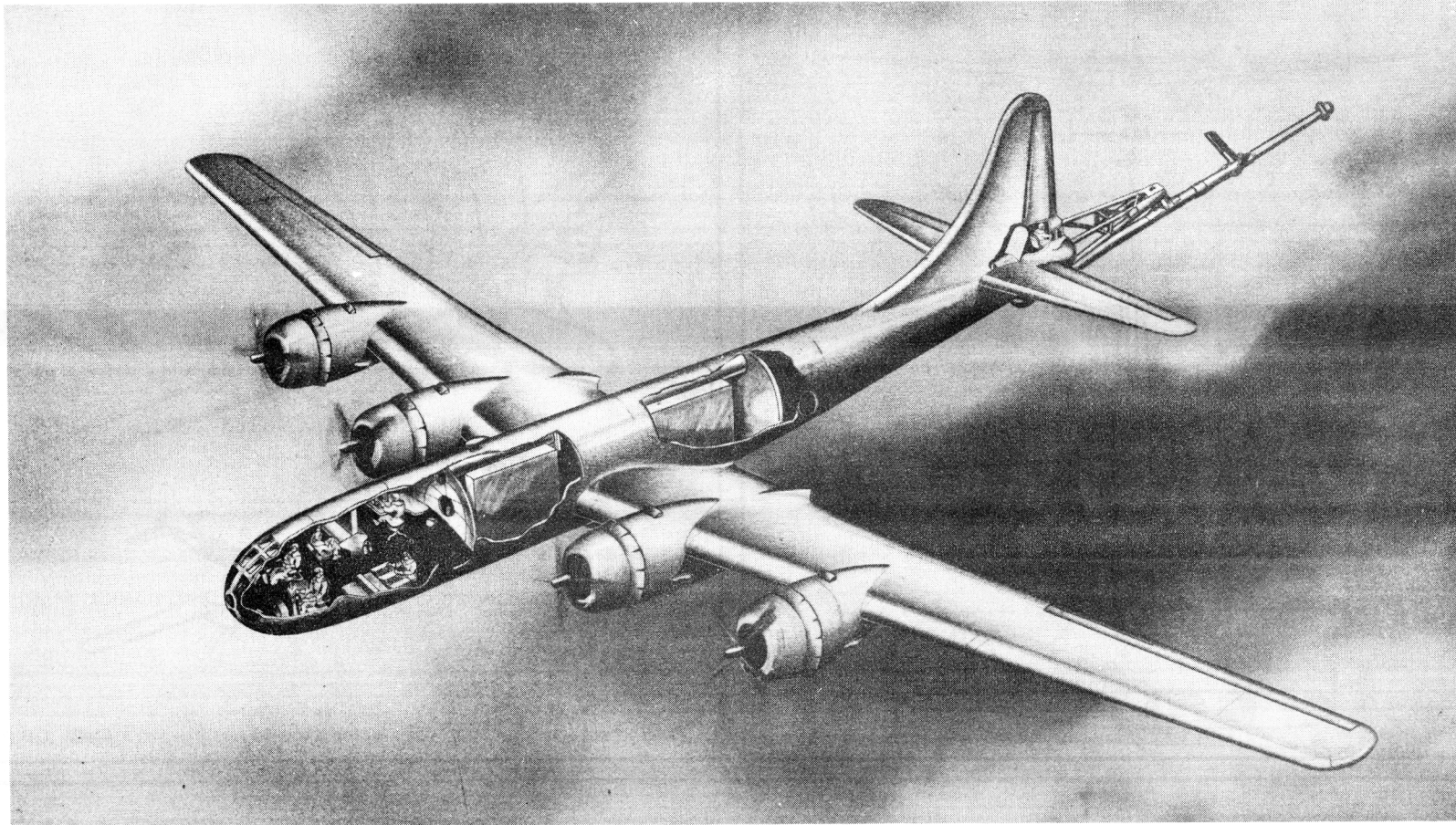


~~R E S T R I C T E D~~

A-1  
CK) B-29P/ckm  
SERVICE



## *Standard Aircraft Characteristics*

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

**KB-29P**  
**SUPERFORTRESS**  
Boeing

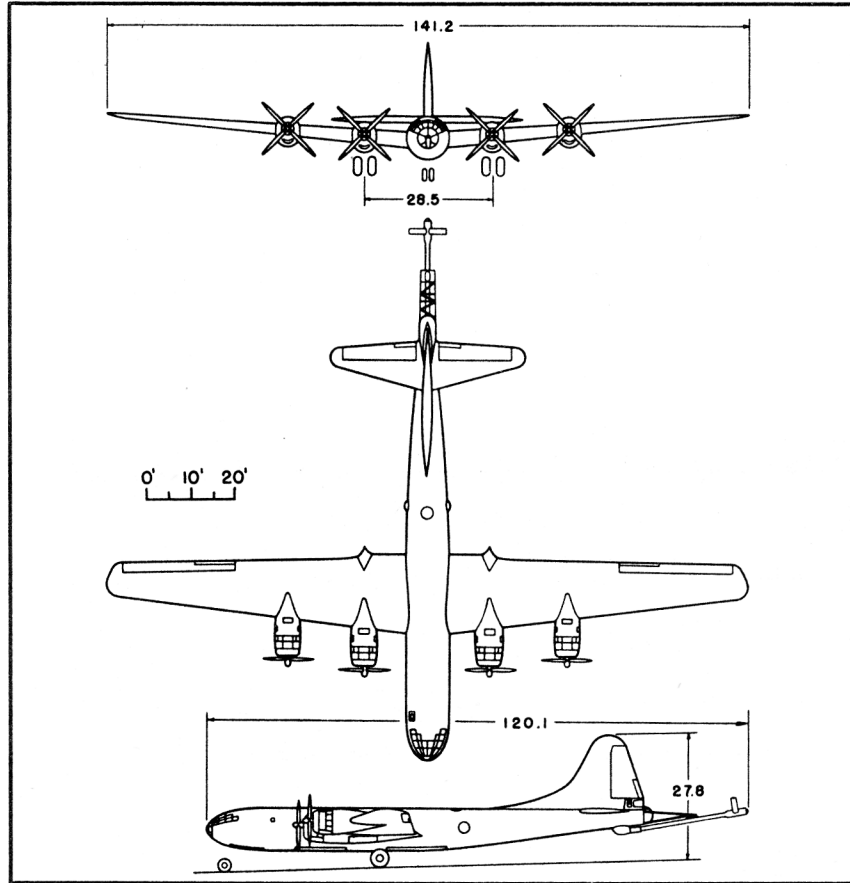
FOUR R-3350-57 or -57A

WRIGHT

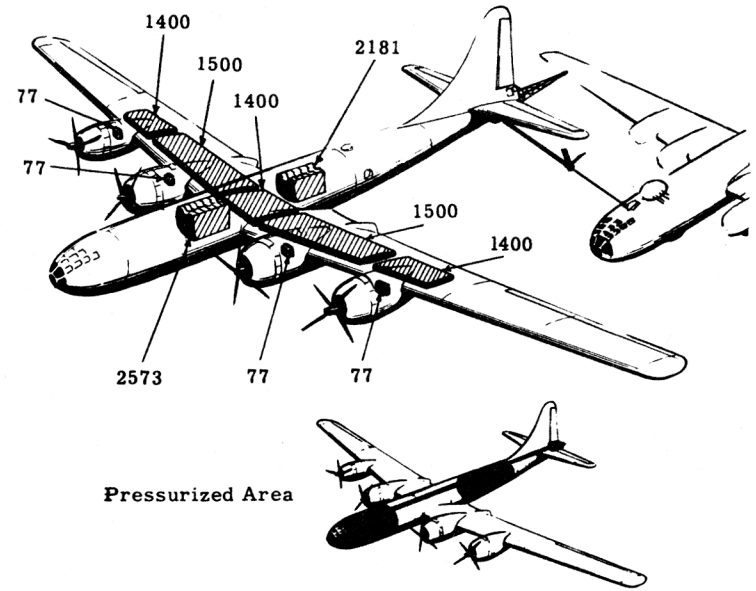
8 MARCH 1951

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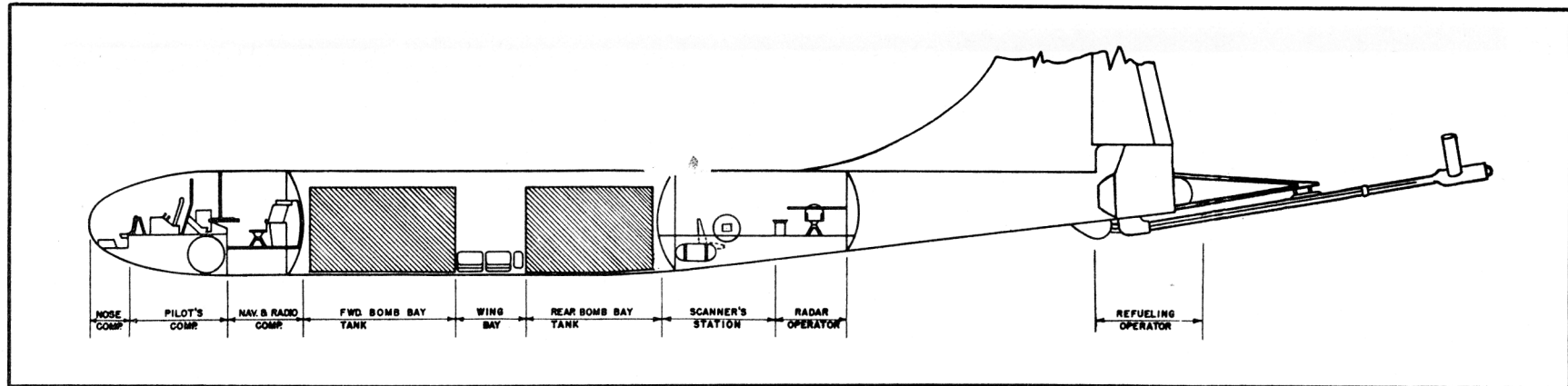
KB-29P



Wing area ..... 1720 sq ft  
 Aspect Ratio ..... 11.5  
 Wing Section..... Boeing 117  
 M. A. C. .... 154.41"



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



**POWER PLANT**

No. & Model\*(4)R-3350-57 or -57A  
 Mfr.....Wright  
 Spec No.....95-28266-5  
 Turbo.....(2) B-31  
 Turbo Mfr.....General Elect.  
 Red. Gear Ratio..... 0.35  
 Prop Mfr.....Curtiss  
 Blade Design No.....1016-4C4-18  
 Prop Type..... CS, FF, Reverse.  
 No. Blades..... 4  
 Prop Dia..... 16'-8"  
 \*Modernized

**ENGINE RATINGS**

BHP - RPM - ALT - MIN  
 T.O: 2200 - 2800 - S.L. - 5  
 Mil: 2200 - 2600 - Turbo - 30  
 Nor: 2000 - 2400 - Turbo - Cont.

**DIMENSIONS**

Wing  
 Span ..... 141.2'  
 Incidence ..... 4°  
 Dihedral..... 4°29'23"  
 Sweepback (LE)..... 7°1'26"  
 Length ..... 120.1'  
 Height ..... 27.8'  
 Tread ..... 28.5'  
 Prop. Grd Clearance ..... 1.2'

*Mission and Description*

Navy Equivalent: None Mfr's Model: 345  
 The basic mission of the KB-29P is the In-Flight Refueling of other aircraft utilizing the flying boom method. It differs from the basic B-29 airplane in that all defensive armament is removed and In-Flight Refueling equipment is installed. A maneuverable, telescoping boom with an articulated nozzle, attached to the bottom of the fuselage near the tail, provides a connection and fuel transfer medium between the tanker and receiver. Hydraulic and aerodynamic controls for the boom are in the boom operator's compartment (formerly the tail gunner's compartment). The fuel system includes a manifold system for normal operations and a high capacity pump system for refueling operations. All equipment is operated electrically except the hydraulically operated brakes and boom.

During the time contact is being established, the tanker is flown at a constant altitude to provide a stable platform for accurate operation of the boom and to facilitate contact position. The boom is aligned with the receiver by ruddvator flight surfaces controlled by the boom operator with a conventional control stick. A signal amplifier senses contact and controls equipment according to airplane positions, rate of change of positions and refueling line fuel pressure. Exceeding any pre-set limits automatically effects an involuntary disconnect. A voluntary disconnect, initiated by the boom operator or receiver pilot, results in a fuel shut-off and boom disconnect. The tanker is adapted to supply fuel to a receiver airplane at a selective rate up to 600 gpm. A manually controlled nitrogen system purges the boom.

*Development*

Modified B-29 aircraft to serve as tankers utilizing the flying boom method (American system) in-flight refueling.

**WEIGHTS**

Loading	Lb	L. F.
Empty.....	69,011 (E)	
Basic.....	70,645 (A)	
Operating.....	74,705	
Design.....	135,000	
Combat.....	*84,665	
Max T.O. ....	†138,500	
Max Land....	†135,000.....	2.35

(A) Actual  
 (E) Estimated  
 \* For Basic Mission  
 † Limited by performance  
 ‡ Limited by gear strength

**F U E L**

Location	No. Tanks	Gal
Wg, outbd*.....	2	2800
Wg, inbd*.....	2	3000
Wg, ctr*.....	1	1400
Bomb bay, fwd*..	1	2573
Bomb bay, aft*..	1	2181
*Nylon cells	Total	11,954

Grade (see General Notes, page 6)

**OIL**

Cap. (gal) ..... 308  
 Grade ..... S-1120;W-1100

**C R E W**

Pilot  
 Co-pilot  
 Flight Engineer - Pumping System Operator  
 Navigator  
 Radio Operator  
 Radar Operator  
 Flying Boom Operator

**REFUEL. EQUIP.**

Telescopic Flying Boom  
 Articulated Boom Nozzle  
 Ruddvators for Aerodynamic Control  
 Signal Amplifier  
 Radar equipment necessary for rendezvous with receiver.

**ELECTRONICS**

VHF Command ..... AN/ARC-3  
 Command ..... SCR-274N  
 Liaison ..... AN/ARC-8  
 Interphone ..... AN/AIC-2  
 Radio Compass ..... AN/ARN-7  
 Marker Beacon..... RC-193A  
 IFF ..... SCR-695B  
 Lorán ..... AN/APN-9  
 Radar ..... AN/APQ-13A  
 Rendezvous Radar ..... AN/APN-2B  
 AN/APN-68  
 and AN/APN-11

# Loading and Performance — Typical Mission

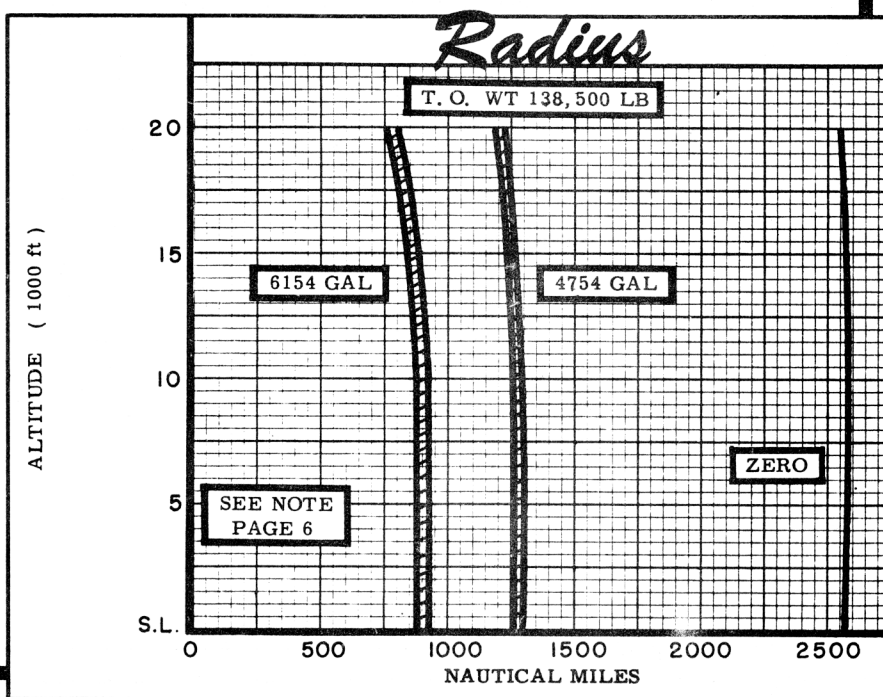
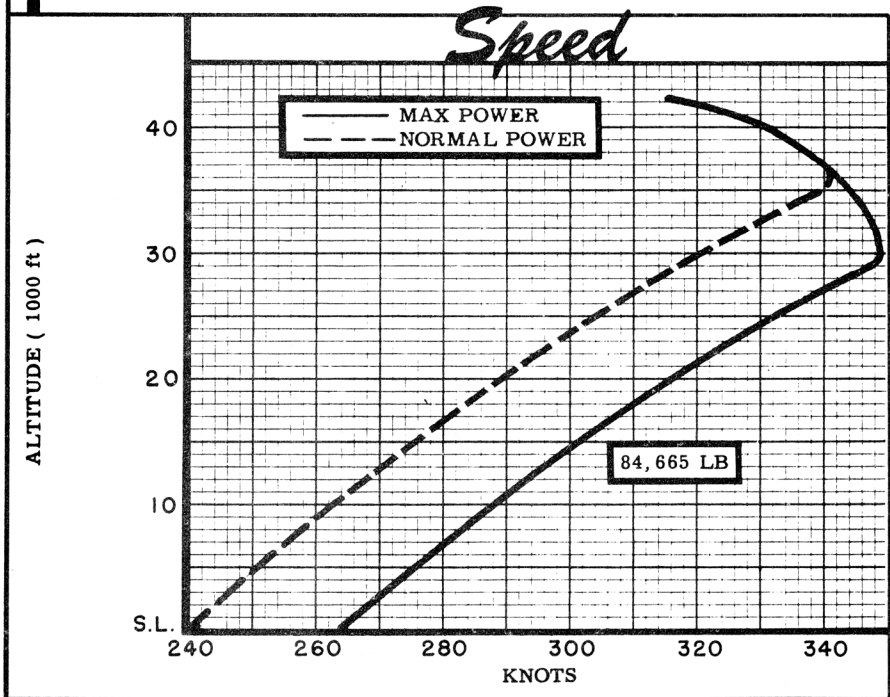
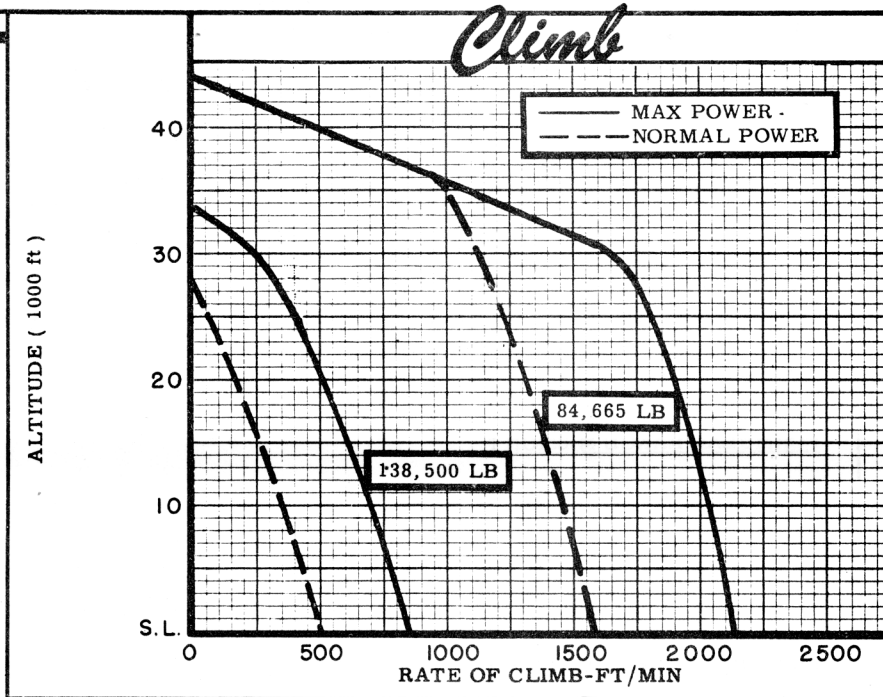
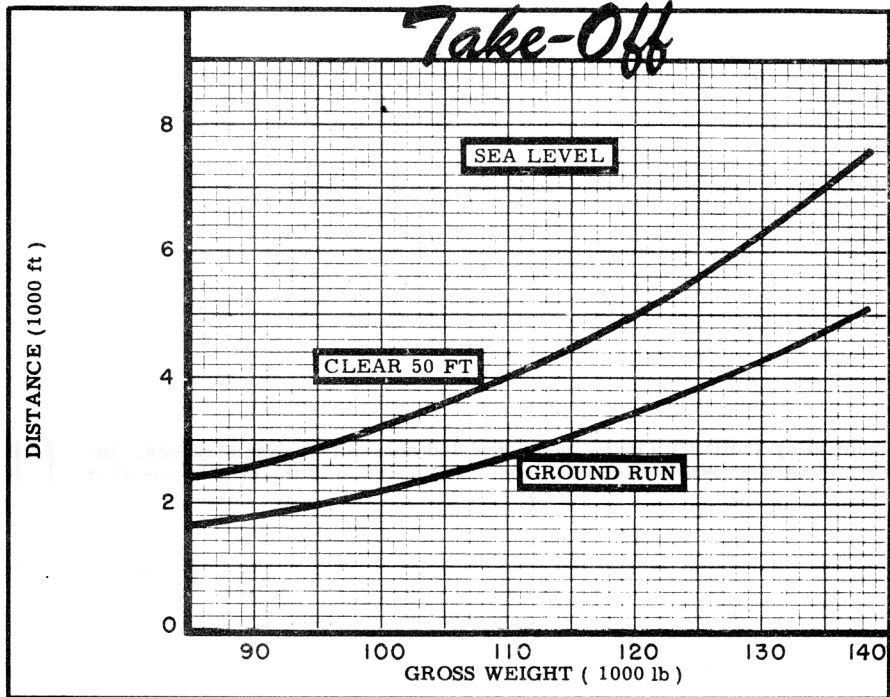
C O N D I T I O N S			BASIC MISSION	HIGH ALT REFUEL	FERRY RANGE
			I	II	III
TAKE-OFF WEIGHT		(lb)	138,500	138,500	138,500
Fuel at 6.0 lb/gal (grade 100/130)		(lb)	28,795	35,271	63,795
Military load (transfer fuel)		(lb)	35,000	28,524	None
Wing loading		(lb/sq ft)	80.5	80.5	80.5
Stall speed (power off, landing configuration)		(kn)	103	103	103
Take-off ground run at SL	①	(ft)	5075	5075	5075
Take-off to clear 50 ft	①	(ft)	7570	7570	7570
Rate of climb at SL	③	(fpm)	500	500	500
Time: SL to 10,000 ft	③	(min)	23.8	23.8	23.8
Time: SL to 20,000 ft	③	(min)	61.8	61.8	61.8
Service Ceiling (100 fpm)	③	(ft)	23,500	23,500	23,500
Service Ceiling (one engine out)	②	(ft)	19,000	19,000	19,000
COMBAT RANGE	④	(n. mi.)	1594	1957	4987
Average speed		(kn)	204	204	192
Initial cruising altitude		(ft)	10,000	10,000	10,000
Final cruising altitude		(ft)	10,000	25,000	10,000
Total mission time		(hr)	9.00	10.74	26.13
COMBAT RADIUS	④	(n. mi.)	1000	1154	————
Average speed		(kn)	190	211	————
Initial cruising altitude		(ft)	10,000	10,000	————
Refueling altitude		(ft)	10,000	25,000	————
Refuel speed	⑥	(kn)	248	311	————
Final cruising altitude		(ft)	10,000	25,000	————
Total mission time		(hr)	11.71	12.08	————
COMBAT WEIGHT	⑤	(lb)	84,665	86,120	81,085
Combat altitude		(ft)	10,000	25,000	10,000
Combat speed	②	(kn)	288	332	290
Combat climb	②	(fpm)	2025	1735	2160
Combat ceiling (500 fpm)	②	(ft)	39,500	39,200	40,450
Service ceiling (100 fpm)	③	(ft)	42,900	42,500	43,800
Service ceiling (one engine out)	③	(ft)	38,800	38,450	39,700
Max rate of climb at SL	②	(fpm)	2135	2080	2275
Max speed at 30,000 ft	②	(kn)	349	348	350
LANDING WEIGHT	⑤	(lb)	76,145	76,469	81,085
Ground roll at SL		(ft)	2060	2075	2175
Total from 50 ft		(ft)	2750	2760	2890

**NOTES**

- ① Take-off power
- ② Max power
- ③ Normal power
- ④ Detailed descriptions of RADIUS and RANGE missions are given on page 6.

- ⑤ For Radius Mission if radius is shown
- ⑥ At normal rated power but not exceeding 250 MPH (EAS) as per T. O. AN 01-20EJAB-1

**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

Warm-up, take-off, climb on course to 10,000 ft at normal power, cruise at long range speeds to rendezvous point where boom connection is made with receiver (one hour at long range speed for rendezvous and hook-up, no distance credit), transfer fuel at rate of 600 gallons per minute while proceeding toward bomber target at normal power but not exceeding 250 mph equivalent airspeed (EAS), disengage and return to base at long range speeds. Mission is planned so that radius at end of transfer is 1000 nautical miles. Range free allowances include 10 minutes normal power at sea level for warm-up and take-off, 1 hour long range speeds for rendezvous, and 5% initial fuel for reserve

FORMULA: RANGE MISSION I

Warm-up, take-off, climb on course to 10,000 ft at normal power, cruise at long range speeds to rendezvous point. Mission is planned so that fuel transfer ends when 90% of flight fuel has been consumed. Range free allowances include 10 minutes normal power at sea level for warm-up and take-off, 1 hour long range speed for rendezvous, and 10% of initial fuel for landing reserve. Fuel transfer same as for Radius Mission I.

FORMULA: RADIUS MISSION II

Warm-up, take-off, climb on course to 10,000 ft at normal power, cruise at long range speeds to point where climb is made to arrive at 25,000 ft immediately prior to rendezvous where boom connection is made with receiver (one hour at long range speeds for rendezvous and hook-up, no distance credit), transfer fuel at rate of 600 gallons per minute while proceeding toward bomber target at normal power, disengage and return to base at long range speeds, altitude 25,000 ft. Range free allowances include 10 minutes normal power at sea level for warm-up and take-off, 1 hour long range speeds for rendezvous, and 5% of initial fuel for reserve.

FORMULA: RANGE MISSION II

Warm-up, take-off, climb on course to 10,000 ft at normal power, cruise at long range speeds to point where climb is made to arrive at 25,000 ft immediately prior to rendezvous. Mission is planned so that fuel transfer ends when 90% of flight fuel has been consumed. Range free allowances include 10 minutes normal power at sea level for warm-up and take-off, 1 hour long range speeds for rendezvous, and 10% of initial fuel for landing reserve. Fuel transfer same as for Radius Mission II.

FORMULA: RANGE MISSION III

Same as Range Mission I except no rendezvous or fuel transfer is made.

Landing reserve is 10% of initial fuel.

GENERAL DATA:

(a) Fuel grade shall correspond to grade specified for use in receiver aircraft unless such grade is less than 100/130 in which case 100/130 fuel will be loaded in outer wing tanks for use by the KB-29P and fuel for the receiver loaded in bomb bay tanks and center wing tanks.

(b) In planning missions, bomb bay tanks are assumed to be carried the entire distance. These tanks are relatively light, consisting of aluminum alloy shells with three interconnected non-self-sealing bladders. Information is not available on the structural limitation of the airplane or what unusual flight characteristics may occur when the bomb bay tanks are dropped.

(c) For detailed planning refer to Technical Order AN 01-20EJA-1.

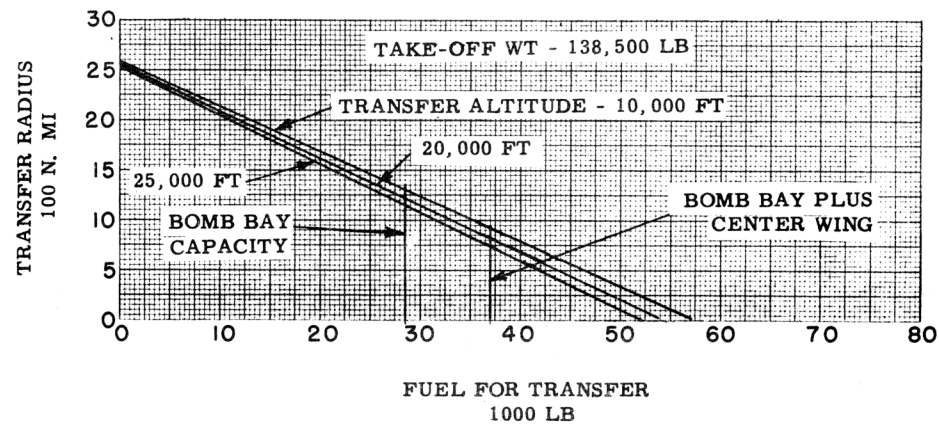
(d) Engine ratings shown on page 3 are manufacturer's guaranteed ratings. Power values used for performance calculations are as follows:

R-3350-57 or -57A			
	BHP	RPM	CRIT ALT*
T. O:	2200	2800	
Max:	**2500	2800	31,400
Nor:	2000	2400	35,600
*With Turbo			
**As established by T. O. AN 01-20EJ-92 dated 15 June 1944.			

(e) The R-3350-57 and -57A are modernized to increase engine strength and improve reliability.

RADIUS BLOCK - Page 5

This plot is for constant volumes of fuel (6.0 lb/gal) transferred at various altitudes assuming take-off at 138,500 pounds. Shaded area represents distance traveled during fuel transfer. Initial climb is to 10,000 ft with climb or descent to transfer altitude immediately prior to rendezvous. Return is at refuel altitude if higher than 10,000 ft. If altitude is lower, climb is made back to 10,000 feet cruising altitude. All allowances are as for radius missions.

**SUPPLEMENTAL**

This data is to supplement the data shown in the first six pages of this document and presents a plot of transfer fuel against radius for three transfer altitudes. The fuel is transferred at the rate of 600 gallons per minute with the aircraft flying at normal power but not exceeding 250 mph equivalent airspeed (EAS) during the transfer operation. The range free allowances are as follows:

- (a) 10 minutes for warm-up and take-off at normal power.
- (b) 1 hour at long range speeds for rendezvous and hook-up.
- (c) 5% of fuel used for flight as landing and endurance reserve.
- (d) Climb to refuel altitude (if necessary) is made from initial cruise altitude so as to arrive at refuel altitude immediately prior to rendezvous. Return at refuel altitude.

NOTE: Transfer radius is end point of transfer.