POWER PLANT

Same as B-29B

ENGINE RATINGS

Same as B-29B

DIMENSIONS

Same as B-29B

G U N S

No.	Cal	Rds ea	Location
2	.50	1000	Tail, tur

B O M B S

No.	Size	Type
2	4000	G. P.
4	2000	G. P.
6	1600	A. P.
6	1000	G. P.
20	500	G. P.

Max Bomb Load .... 10,000 lb

Mission and Description

The B-29 GEM aircraft is a long range, bombardment type aircraft the prime mission of which is the destruction of enemy materiel and installations beyond the range of standard bombardment aircraft.

This aircraft is modified to permit in-flight refueling with the British hose system. A refueling operator's station is located in the aft unpressurized compartment. A windlass, containing approximately 350 feet of line for pulling hose from tanker (KB-29M) into receiver, is located in the starboard side fuselage under the tailplane. The refueling procedure is to fill the wing tanks first and then the bomb bay tank. Rate of transfer is 95 gallons per minute for the gravity feed method and up to 200 gallons per minute for the pump method.

B-29B

GEM RECEIVER MODIFICATION
(MAJOR ADDITIONS)

ELEVATORS REWORKED TO ELIMINATE AERO-DYNAMIC OVERBALANCE

WINDLASS (HAULING LINE)

REFUELING COUPLING

SIGHTING BLISTERS
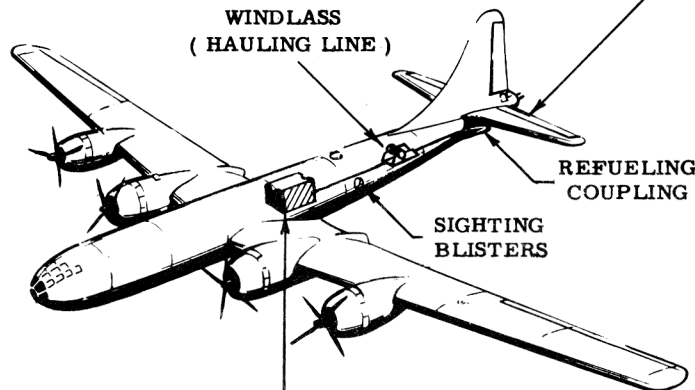
2193 GAL BOMB BAY RECEIVING TANK.

W E I G H T S

Loading	Lb	L. F.
Empty	68,288(E)	
Basic	74,480(A)	
Design	120,000	2.67
Combat		
Max T.O.	*142,250	
Max In Flight	‡146,784	
Max Land	†135,000	

(A) Actual   (E) Estimated
* Limited by performance
† Limited by strength
‡ Limited by space

F U E L

Location	No. Tanks	Gal
Wg, outbd*	2	2780
Wg, inbd*	2	2976
Wg, ctr*	1	1400
Bomb bay	1	2193
*s.s.	Total	9349

Grade 100/130

OIL Same as B-29B

ELECTRONICS

|	
VHF Command	AN/ARC-3
Interphone	AN/AIC-2A
Liaison	AN/ARC-8
Radio Compass	AN/ARN-7
Homing Adapter	AN/ARR-1
Marker Beacon	RC-193A
Loran	AN/APN-9 or AN/APN-9A
Localizer	RC-103
Glide Path	AN/ARN-5A
Radio Altimeter	SCR-718C
IFF	SCR-695
Interrogator	SCR-729
Radar	*AN/APQ-13A
Raven	RCM
Range Receiver	BC-453B
Radio Sets	AN/ARW-9 & AN/ARW-10A
Radar	AN/APN-2B & AN/APN-68

*Modified AN/APQ-23

Supplemental

The curve below presents the combat radius potentialities of the B-29B Gem Receiver airplane when operating with the KB-29M tanker airplane. The right side of the curve presents combat radius versus refuel radius while the left side presents transfer fuel requirements and capabilities versus refuel radius. For example, in order to strike a target 3500 n. mi from base, these curves are to be used together as follows to present refueling radius data:

The combat radius section indicates 3500 n. mi may be made good by both refueling techniques, refueling outbound only at 2550 n. mi or refueling outbound at 460 n. mi and inbound at 2100 n. mi; however, reading from the requirements section, the double refuel requires two tankers, one outbound at 460 n. mi transferring approximately 15,500 lb fuel and one inbound at 2100 n. mi transferring 20,000 lb fuel.

For outbound refuel only, it is noted that the bomber requires a transfer of 38,500 lb fuel while a single tanker can deliver only 13,000 lb fuel at 2550 n. mi from base; thus, $38,500/13,000 = 2.9$ so three tankers would be required.
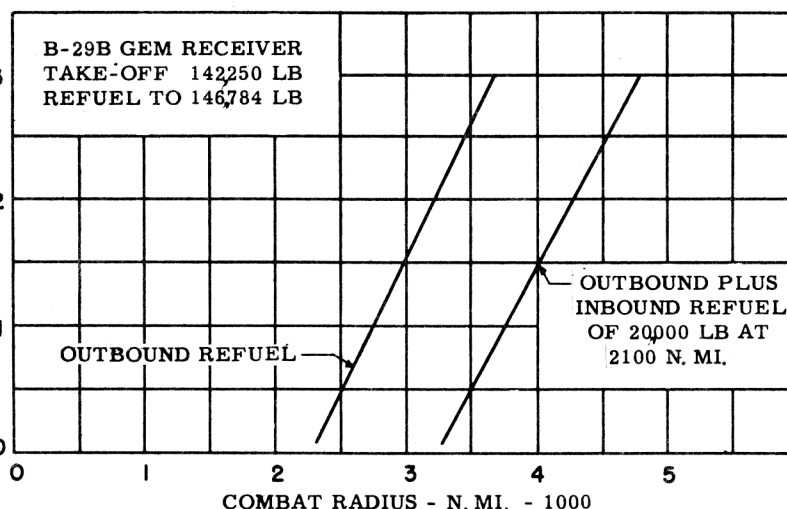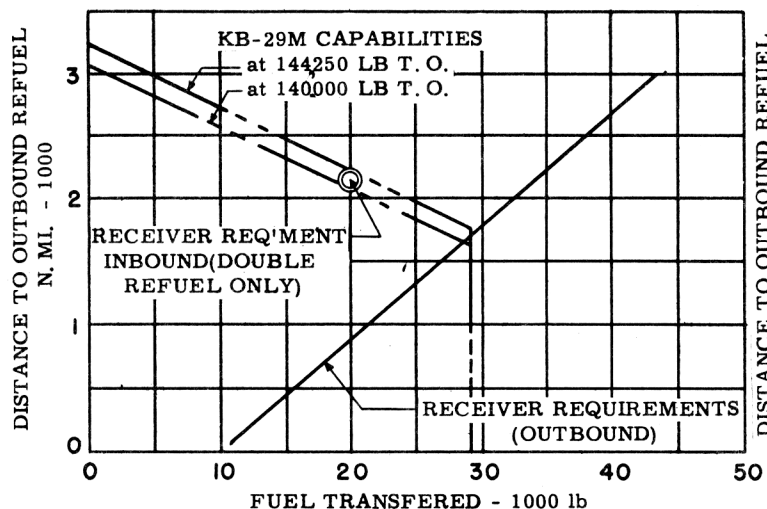
FORMULA FOR RADIUS DATA SHOWN

Warm-up, take-off, climb on course at normal power to 10,000 ft, cruise long range speeds (except when refueling) to point where normal rated power climb is made to arrive at 25,000 ft 30 minutes prior to bomb drop, cruise long range speeds 15 minutes followed by 15 minute bomb run at normal power, drop bombs, conduct 5 minute normal power evasive action plus 10 minute normal power escape. When only outbound refuel is used return to base at long range speeds at 25,000 ft; on inbound refuel return at long range speeds at 25,000 ft to point 2100 n. mi from base, descend to 10,000 ft, refuel with 20,000 lb fuel and continue to base at 10,000 ft. Range free allowances include: 10 minutes normal power fuel consumption for warm-up and take-off, plus 5 minutes normal power evasive action and 5% of take-off fuel for landing reserve. All refuel operations allow 1 hour rendezvous per refuel at long range speeds (no distance credit) followed by refuel at 190 calibrated airspeed (CAS) at 180 gpm on course.

NOTE: Inbound refuel is assummed to be 20,000 lb of fuel at 2100 N. Mi. from base for all double refuel missions. This assumption gives best radius.