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C. O. N. F. D. F. N. T. L. A. I.

A-1 (D) B-47E/CHAG SERVICE

# Standard Aircraft Characteristics

BY AUTHORITY OF THE SECRETARY OF THE AIR FORCE DB - 47E

**STRATOJET** 

Boeing

SIX J47-GE-25

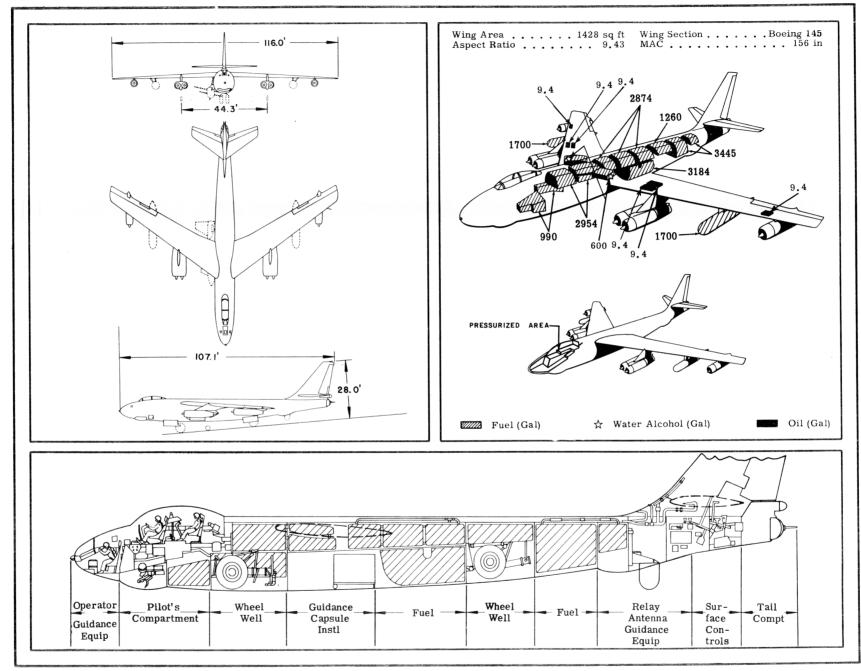
GENERAL ELECTRIC

1 FEB 56

CONFIDENTIAL

DB-47E

57WC-4984



## **POWER PLANT**

No. & Model (6) J47-GE-25
Mfr General Electric
Engine Spec No E-597
Type Axial Flow
Length 148"
Diameter
Weight (dry) 2707 lb
Tail Pipe Fixed Area
Augmentation Water/Alcohol
ATO
No. & Model (33)14AS1000
Mfr Aerojet
Weight(loaded) 200 lb ea
or
No & Model (19)15KS1000
Mfr Aerojet
Weight(loaded)

## **ENGINE RATINGS**

S. L. Static	LB	-	RPM	-	MIN
Max:	*7200	-	7950	-	5
	5970	-	7950	-	5
Mil:	5670	-	7800	-	30
Nor:	5320	-	7630	-	Cont
*Wet; water Thrust (lb) Duration (se	ATC				33,000
Thrust (lb)	or				
Duration (se					

## Mission and Description

Navy Equivalent: None

Mfr's Model: 450-172-52

The principal mission of the DB-47E is to carry the GAM-63A to a predetermined launch point, release the GAM-63A, direct portions of its flight to the target, and then return to base. The airplane shall be convertible to a Gravity Bomber or to an ECM capsule-carrying configuration,

The normal Director Bomber crew consists of pilot, co-pilot, and observer.

The observer's duties are navigation, releasing and directing the GAM-63A, and operating radar equipment.

Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, and pressurization, NESA glass decicing for the pilot's windshield; defrosting of windshield, nose window, and other transparent sections by recirculated cabin air; thermal anti-icing for wings and empennage; and hydraulic boost on all control surfaces. Crew ejection seats are provided for in-flight escape. The pilot and copilot are ejected upward and the observer downward.

The MA-8 Bombing-Navigational System is equipped with a 10 inch radar scope which replaces the 5 inch scope used in the K-4A System. A rotatable seat allows the co-pilot to face aft while functioning as the A-5 Fire Control System operator.

Other features are single-point and air refueling, an approach chute to increase drag, drag chute for decreasing landing roll distance, and an anti-skid braking device.

## Development

Mock-up Inspection					Mar 55
Deliver 1st Operational Suitability Test Airplane		,			(est) Apr 56
Deliver 2nd Operational Suitability Test Airplane					(est) May 56

## WEIGHTS

Loading	Lb	L.F.
Empty 82	,424(E)	
Basic 85	, 527(E)	
Design	,000	. 3.0
Combat *130	,995	
Max T.O †230	,000	. 2.0
Max In-Flight. 1221	,000	. 2.0
Max Land 125	,000	

- (E) Estimated
- \* For Basic Mission
- † Limited by strength
- t With external tanks

F	U	E	L

<b>A</b>	<u> </u>	#4 #4	<u> </u>
Location Fwd, Main Fwd, Aux* Ctr, Main* Bomb Bay Aft, Main* Aft, Aux Wing, Drop Grade Specification	* 1 * 1 1	Total	Gal 2954 990 2874 3184 3445 1260 3400 18,107 JP-4 -F-5624A
Wing Pane Grade W Wg, inbd . *Self-seal forward m	ATER/A	LCOHO t for 3	(tot)56.4 -L-6081A L 600 cells in

## **DIMENSIONS**

Wing	
Span	116.0'
Incidence	2 <sup>0</sup> 45'
Dihedral	0°
Sweepback (LE)	36 <sup>o</sup> 37 <sup>1</sup>
Length	107.1'
Height	
Tread (outrigger)	
, 38 , , , , , , ,	

## B O M B S

GAM-63A & Guidance Equipment
or Same bombing capabilities as B-47E

## G U N S

No.	Туре	Size	Rds ea	Loc
2.	. M24A1	 20mm	n.350.Tail	, Tri

## **ELECTRONICS**

VHF Command AN/ARC-27
Interphone AN/AIC-10
Omni-Dir AN/ARN-14
Bombing-Nav.Radar
Fire Control
Radio Compass AN/ARN-6
Glide Path AN/ARN-18
Marker Beacon AN/ARN-12
Liaison AN/ARC-21X
Warning Radar AN/APS-54
Emergency Keyer AN/ARA-26
Rendezvous Equip AN/APN-76C
GAM-63A Guidance Equipment
IFF AN/APX-6A
ECM AN/ALT-7, $AN/APT-9$ ,
AN/APT-16A,
AN/ALT-6 and AN/ALT-8
Chaff Dispenser AN/ALE-1

Loading and f	BASIC MISSION (DIRECTOR)	BASIC MISSION (BOMBER)	COMBAT RANGE (DIRECTOR)	BASIC MISSION (ECM)	FERRY RANGE	
AKE-OFF WEIGHT Fuel at 6.5 lb/gal (grade JP-4) Payload Wing loading Stall speed (power off) Take-off ground run at SL Take-off ground run with ATO Take-off to clear 50 ft Take-off to clear 50 ft with ATO Take-off ground run at SL Take-of	1 230,000 109,910 18,200/845 155.5 167 11,250 7830 12,850 9250 1595 1400 17.7/33.5 24,800 21,000 1715 426 25,000/42,950 458/33,600 8.1	11 227,016 116,669 10,000/845 153,0 166 10,850 7550 12,450 9000 1700 1615 1500/29.0 28,000 23,000 2040 431 27,500/43,300 463/37,150 9,7	230,000 109,912 18,200/845 155,5 167 11,250 7830 12,850 9250 1595 1400 17,7/33,5 24,800 21,000 3140 ® 426 25,000/38,850 454/38,850 7,4	1V  220,014  116,669  845  148,3  164  10,000  6850  11,600  8260  1800  1740  13.7/33.0  29,300  25,000  1982  426  28,150/42,600  463/38,000  9.25	V 217, 278 ③ 116, 669 None 146,5 163 9700 6600 11, 300 8000 1800 1458 13.0/26.8 27, 750 22, 100 4095 431 28, 450/43, 000	
COMBAT WEIGHT Combat altitude/speed Combat climb Combat climb Combat ceiling (500 fpm) Combat ceiling (100 fpm)/one engine out (3) Service ceiling (100 fpm)/one engine out (3) Max rate of climb at SL Max speed at optimum alt Basic speed at 35,000 ft ANDING WEIGHT Ground roll at SL/aux brake Total from 50 ft/Aux brake (1b) (1b) (1c) (1c) (1c) (1c) (1c) (1c) (1c) (1c	130,955 (10) 33,600/485 985 38,100 38,400/35,700 3465 513/14,600 482 96,675 4700/2700 (11) 5710/3710 (11)	134,655 37,150/484 830 39,100 40,400/37,900 4340 527/16,700 490 95,483 4630/2660 (11) 5640/3670 (11)	96,675 (1) 38,850/485 1280· 44,500 44,800/42,100 5790 518/14,800 488 96,675 4700/2700 (11 5710/3710 (11		96,580 43,000/483 1000 45,600 47,000/43,600 6400 526/15,800 493 96,580 4700/2700 (11) 5710/3710	

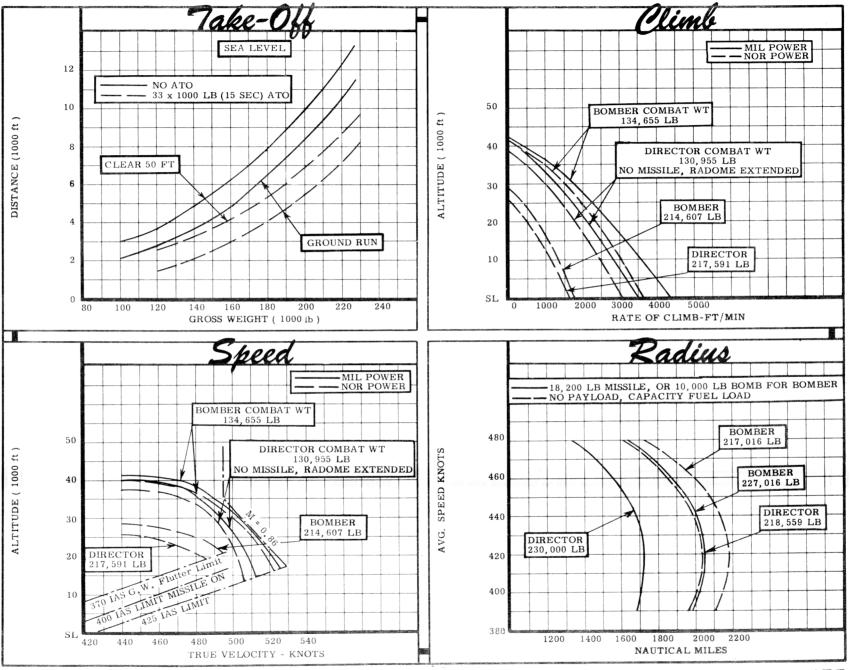
## NOTES:

- 1 Take-off power (with med. flow water injection)
  2 Military power
  3 Normal power
  4 With 33 x 1000 lb thr ext. ATO
  5 Includes 7109 lb ATO & 5300 lb water/alcohol
  6 18, 200 lb = GAM-63; 10,000 lb = Bomb load;
  845 lb = Cheff
- 845 lb = Chaff
- 7 Detailed descriptions of RADIUS and RANGE missions given on page 6.

  8 Does not include Missile Range
- Configuration for Ferry Mission includes missile strut (Director config. less Missile)

- (10) Radome extended for combat performance items for Director Missions
- With 32 ft brake-chute deployed at touchdown
- 11) With 32 ft brake-chute deployed at touchuo.
  12) Based on take-off wt. minus water/alcohol and 2706 lb ATO fuel.
  13 and 2706 lb ATO fuel.
  15 and 2706 lb ATO fuel. 13 Based on take-off wt. minus 5300 lb water/alcohol and 7109 lb ATO.
- (14) Based on take-off wt. minus 5000 lb (average weight during take-off run).

- PERFORMANCE BASIS:
  (a) Data source calculated data based on flight tests of YDB-47E (AF 51-5219).
- (b) Performance is based on powers shown on page 6.



## FORMULA: DIRECTOR RADIUS MISSION I

Take off, climb on course to optimum cruise altitude at normal rated power, and cruise out at long range speeds and altitudes. Release droptanks when empty. Climb so as to reach cruise ceiling (radome down) 15 minutes before reaching the missile release point. Extend the radome and run into missile release point at normal rated power; release missile and chaff. Conduct 2 minute normal rated power evasive action and 8 minute normal rated power escape. Attain optimum cruise altitude during escape. Cruise to home base at long range speeds and altitudes with radome retracted. Range free allowances are 5 minutes at normal rated power for starting engines and take-off, 2 minutes normal rated power for evasive action, and 5% of initial fuel plus 30 minute endurance at sea level for reserve.

## FORMULA: BOMBER RADIUS MISSION II

Take off, climb on course to optimum cruise altitude at normal rated power, and cruise out at long range speeds and altitudes. Release droptanks when empty. Climb so as to reach cruise ceiling 15 minutes before reaching the target. Run into target, release bombs, and conduct 2 minute evasive action and 8 minute escape at normal rated power. Attain optimum cruise altitude during escape. Cruise to home base at long range speeds and altitudes. Range free allowances are the same as those of Mission I.

## FORMULA: DIRECTOR RANGE MISSION III

Take off, climb on course to optimum cruise altitude at normal rated power, and cruise out at long range speeds and altitudes. Release droptanks when empty. Climb so as to reach cruise ceiling (radome down) 15 minutes before reaching the missile release point. Extend the radome and run into the missile release point arriving there with only reserve fuel remaining. Release missile and chaff. Range free allowances are 5 minutes at normal rated power for starting engines and take-off, and reserve fuel as in Mission I.

## FORMULA: ECM RADIUS MISSION IV

Take off in Bomber configuration, except with no bomb and with the ECM pod installed. Climb on course to optimum cruise altitude at normal rated power. Cruise out at long range speeds and altitudes. Release drop tanks when empty. Climb so as to reach cruise ceiling 15 minutes before reaching the target. Run into target, release chaff, and conduct 2 minute evasive action and 8 minute escape at normal rated power. Attain optimum cruise altitude during escape. Cruise to home base at long range speeds and altitudes. Range free allowances are the same as those of Mission I.

## FORMULA: DIRECTOR FERRY RANGE MISSION V

Take off in Director configuration without missile and climb on course to optimum cruise altitude at normal rated power. Release drop-tanks when empty. Cruise out at long range speeds and altitudes. Land at remote base with only reserve fuel remaining. Range free allowances are 5 minutes at normal rated power for starting engines and take-off, and reserve fuel as in Mission I.

## GENERAL NOTES:

- (a) Performance is based on B-47E flight test data adjusted per YDB-47E flight tests.
  - (b) For detailed mission planning refer to T.O. 1B-47E-1.
- (c) Normal ATO technique is for ATO rockets of 15 second duration fired 10 seconds before take off.
- (d) Thrust values shown on page 3 are engine manufacturers guaranteed ratings. Thrust values used in performance calculations are as follows:

(6) J47-GE-25								
S. L. Static	Thrust-Lb	RPM	Minutes Allowable					
Take-off	6770	7950	5					
Military	5640	7800	30					
Normal	5270	7630	Continuous					

## PERFORMANCE REFERENCE:

Boeing Document WD-13355, "Phase I Flight Testing of the YDB-47E Airplane".

### REVISION BASIS:

Initial Issue

(5 NOV 55)

1 FEB 56

Olgio 45433