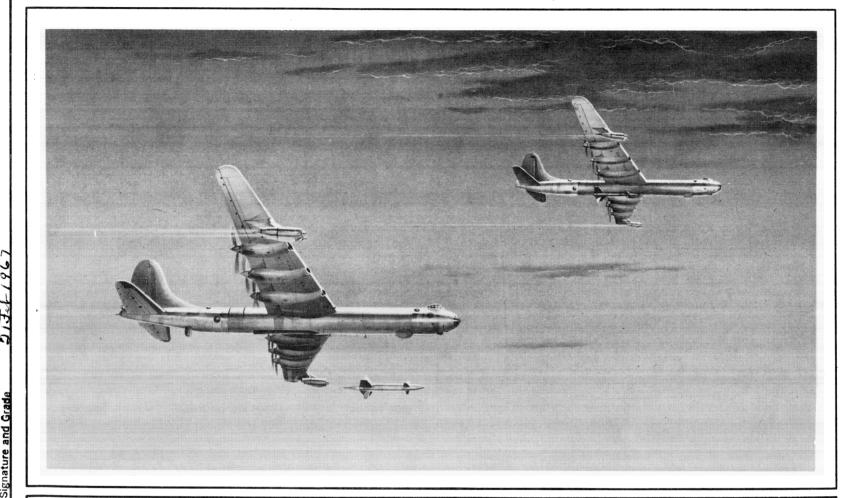
SERVICE



Standard Aircraft Characteristics

BY AUTHORITY OF THE SECRETARY OF THE AIR FORCE DB-36H

Consolidated-Vultee

SIX R-4360-53 PRATT & WHITNEY FOUR J47-GE-19 GENERAL ELECTRIC

20 APR 5

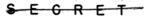
SECRET

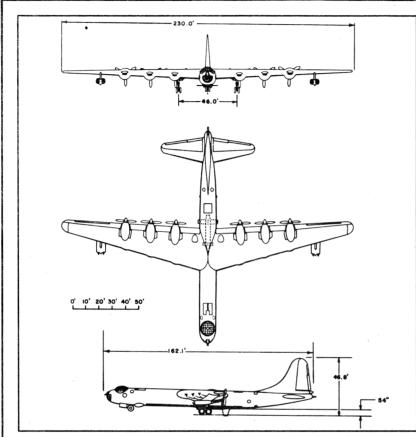
DB-36H

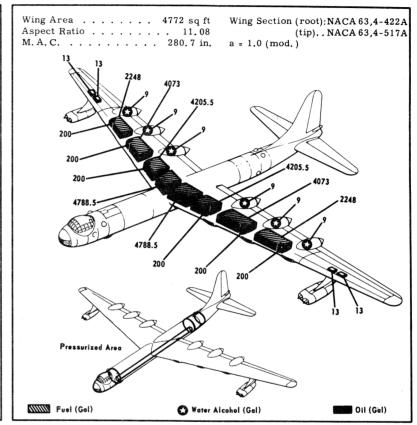
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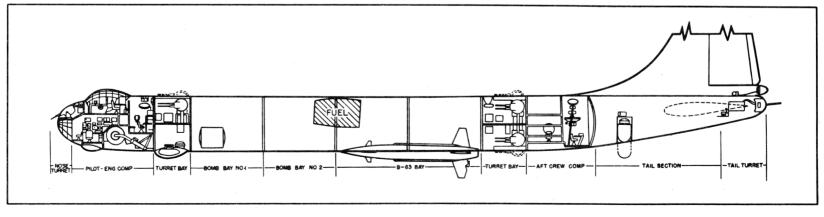
Jassification cancelled or changed to Kanela

53Wc/2001









DB-36H

SECRET

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POWER PLANT

No. & Model (6) R-4360-53
Mfr Pratt & Whitney
Engine Spec No A-7076-F
Superch 1. stg, 1 spd
Turbo Superch (2) BH-1
Turbo Mfr General Electric
Red. Gear Ratio 0.375
Prop. Mfr *Curtiss Blade Design No 1129-17C6-24
Blade Design No 1129-17C6-24
Prop. Type C.S., FF, Reverse
No. Blades 3
Prop. Dia 19'0"
Augmentation Water/Alcohol
plus
No. & Model (4) J47-GE-19 Mfr General Electric
Mfr Genéral Electric
Engine Spec No E-589
Type Axial
Length 144"
Diameter
Weight (dry)
Weight (dry) 2495
Tail Pipe Fixed Area
*Alternade blades; A.D. Smith, · ·
SP-36D

ENGINE RATINGS

	BHP	- R	PM	- I	ALT	-	MIN
T.O:	*3800	- 2	800	-	SL	-	5
Mil:	*3800	- 2	800	- T	urbo	-	30
	3500	- 2	800	- T	urbo	-	30
Nor:	2800	- 2	600	- T	urbo	-	Cont
* We	t						
S. L.	Static		LB	-	RPM	٠	MIN
Max:			5200	-	7950	-	5
Mil:			5200	_	7950	-	30
Nor:			4730	-	7630	-	Cont

Mission and Description

Navy Equivalent: None

Mfr's Model:

The principal mission of the DB-36H is transporting, launching, and directing the B-63 pilotless aircraft for the destruction of ground and naval material objectives,

The crew of 15 consists of pilot, co-pilot, engineer, navigator, radar-director, nose turret gunner, radio operator, (2) upper forward gunners, (2) upper aft gunners, (2) lower aft gunners, APG-41A operator, and auxiliary crew member.

Crew compartment heating; enclosure and blister de-frosting, and propeller, wing and tail anti-icing are accomplished by heated air obtained from heat exchangers installed in the reciprocating engine exhaust system.

A modified K-3A Bombing-Navigational System and radar equipment are provided for launching and directing the B-63.

The defensive armament consists of eight 20mm gun turrets, six of which are retractable. The tail turret is controlled by AN/APG-41A Radar.

The airplane has a single-point fueling, manifold type fuel system. Major differences of the DB-36H from the B-36H are fairings in lieu of aft bomb bay doors, removal of all bomb racks, and the installation of B-63 supporting structures, release mechanism, and guidance equipment in the bomb bays.

Conversion of the DB-36H to a conventional bomber can be accomplished in approximately twelve hours.

For additional characteristics and performance data for the B-63, see "XB-63 Standard Aircraft Characteristics", dated 1 Sep 53.

Development

First Flight Prototype w	ith B-63	 	 			Jul 53
First Delivery		 	 	 		(est) Mar 56
Production Completion		 	 			(est) Aug 56

Class(lb)

WEIGHTS

Loading	g Lb	L. F.
Empty	168,624 (C)	
Basic	174, 331 (C)	
Design	. 370,000	. 2.0
Combat	. *251,000	
Max T.	O. **370,000	. 2.0
Max La	nd **357,500	
(C) Cal	lculated	
* For	r Basic Mission	
** Lir	mited by strength	

F U E L
Location No. Tanks Gal
Wg, outbd* 2 4496
Wg, ctr* 2 8146
Wg, inbd 2 8411
Center sec 2 9577
*Part. self sealing Total 30,630
Grade 115/145
Specification MIL-F-5572
OIL
Outboard (Jet) 4 (tot)52
Wing (Recip) 6 1200
Grade (Recip) 1100
(Jet) 1005
Specification (Recip)MIL-L-6082A
(Jet) MIL-L-6081A
WATER/ALCOHOL
Eng Nacelle 6 (tot)54
Note: Bomb bay fuel tank removed.

DIMENSIONS

Wing	
Span	230.01
Incidence (root)	3 ^o
(tip)	1º
Dihedral	20
Sweepback (LE)	
Length	162.1'
Height	46.81
Tread	46,0'
Prop. Grd. Clearance	. 54"

B O M B S

B-63 Pilotless Aircraft	
Gross Weight Warhead	

No.

G U N S

Location

No. Type Size Rdsea

• •
2M24A1/20mm/400Fus, nose
4M24A1/20mm/600 .Fus, up, fwo
4M24A1/20mm/600 . Fus, up, af
4M24A1/20mm/600.Fus, lwr, af
2M24A1/20mm/600 Fus, tai

ELECTRONICS

UHF Command AN/ARC-27
VHF Command AN/ARC-3
Liaison AN/ARC-8
Radio Compass AN/ARN-6
Marker Beacon AN/ARN-12
IFF AN/APX-6
Omni-Range AN/ARN-14
Glide Path AN/ARN-5B
Bombing-Nav Radar K-3A
Loran AN-APN-9A
Gun-Laying Radar AN/APG-41A
Interphone USAF Combat
Range Recv'r BC-453B
Defensive ECM
DB-36H/B-63 Guidance Equipment

Loading	an	ed i	Perfor	mane	e-7	ypica	l Mi	ission	
CONDITIO	N S		BASIC MISSION	HIGH ALTITUDE	HIGH SPEED	BASIC STRIPPED DB-36H	FERRY RANGE DB-36H ONLY	BASIC MISSION	HIGH SPEED
TAKE-OFF WEIGHT		(lb)	370,000	11 370,000	111 370,000	IV 370,000	V 370,000	VI 357,500	VII 357, 500
Fuel at 6.0 lb/gal (grade 115/145)		(lb)	161,940	161,940	161,940	180,680	181,860	149,445	149,445
Payload (B-63)	(5)	(lb)	18,500	18,500	18,500	18,500	None	18,500	18,500
Payload (Chaff)	•	(lb)	1408	1408	1408	None	None	1408	1408
Wing loading	(lb/sq ft)	77.5	77.5	77.5	77.5	77.5	74.9	74.9
Stall speed (power off)		(kn)	107	107	107	107	107	105	105
Take-off ground run at SL	(1)	(ft)	3990	3990	3990	3990	3990	3630	3630
Take-off to clear 50 ft	(1)	(ft)	5110	5110	5110	5110	5110	4640	4640
Rate of climb at SL	(3)	(fpm)	910	910	910	930	910	965	965
Rate of climb at SL (one eng. out)	<u> </u>	(fpm)	920	920	920	940	920	985	985
Time: SL to 10,000 ft	3	(min)	12.5	12.5	12.5	12.5	12.5	11.5	11.5
Time: SL to 20,000 ft	3	(min)	27	27	27	26	27	25	25
Service ceiling (100 fpm)	<u> </u>	(ft)	32,550	32,550	32,550	33,550	32,800	34,300	34,300
Service ceiling (one eng. out)	ð	(ft)	30, 150	30,150	30, 150	30,750	30,250	31,500	31,500
COMBAT RANGE (Director only)	<u> </u>	(n. mi)					6640		
COMBAT RADIUS (Director & Missile)	\sim	(n. mi)	2600	2355	1280	3255		2450	1220
Director average speed		(kn)	199.5	221.0	342.5	201.0	190.0	203.0	347.0
Director initial cruising altitude		(ft)	5000	25,000	30,000	5000	5000	5000	31,500
Launch speed	2	(kn)	346	348	340	350		347	342
Launch altitude	٩	(ft)	39.900	40,300	38,700	41,500		40,200	39,200
Missile maximum altitude		(ft)	60,000	60,000	60,000	60,000		60,000	60,000
Missile maximum speed		(kn/M)	1380/2.4	1380/2.4	1380/2.4	1380/2.4		1380/2.4	1380/2.
Missile range		(n. mi)	100	100	100	100		100	100
Missile endurance		(min)	7	7	7	7		7	7
Director final cruise altitude		(ft)	28,000	25,000	40,000	31,800	27,900	28,200	40,000
Director total mission time		(hr)	24.7	20.1	7. 3	31.0	35.0	22.9	6.8
COMBAT WEIGHT (Director only)		(lb)	251,000	245,200	257,600	241,300	198,623	246,900	253,30
Combat altitude		(ft)	39,900	40,300	38,700	41,500	27,900	40,200	39,200
Combat speed	(2)	(kn)	357	358	356	360	353	358	357
Combat climb	(<u>2</u>)	(fpm)	600	610	650	590	1960	610	640
Combat ceiling (500 fpm)	(2)	(ft)	40,800	41,400	40,350	42,350	45,150	41,100	40,700
Service ceiling (100 fpm)	<u> </u>	(ft)	44,200	44,700	43,700	45,700	48,700	44,550	44,050
Service ceiling (one eng. out)	(3)	(ft)	41,600	41,800	41,300	43,200	46,000	41,750	41,500
Max rate of climb at SL	<u>(2)</u>	(fpm)	2065	2155	1995	2265	2755	2125	2050
Max speed at optimum altitude	<u> </u>	(kn/ft)	360/36,500	362/37,000	358/36,400	366/37,500	372/39,000	362/36,800	359/36,5
Basic speed at 25,000 ft	$\overline{2}$	(kn)	341	342	340	344	347	342	341
LANDING WEIGHT		(lb)	197,553	197,553	197,553	181,145	198,623	196,930	196,93
Ground roll at SL		(ft)	1920	1920	1920	1770	1930	1910	1910
Ground roll (auxiliary brake)	(7)	(ft)	1680	1680	1680	1550	1690	1670	1670
Total from 50 ft	·	(ft)	3360	3360	3360	3210	3370	3350	3350
Total from 50 ft (auxiliary brake)	(7)	(ft)	3140	3140	3140	3000	3150	3130	3130
1 otal 11 oni oo it (auxiliai j bi ake)	\cdot	(10)		"""		4	1		1

	1	Т.	O.	power
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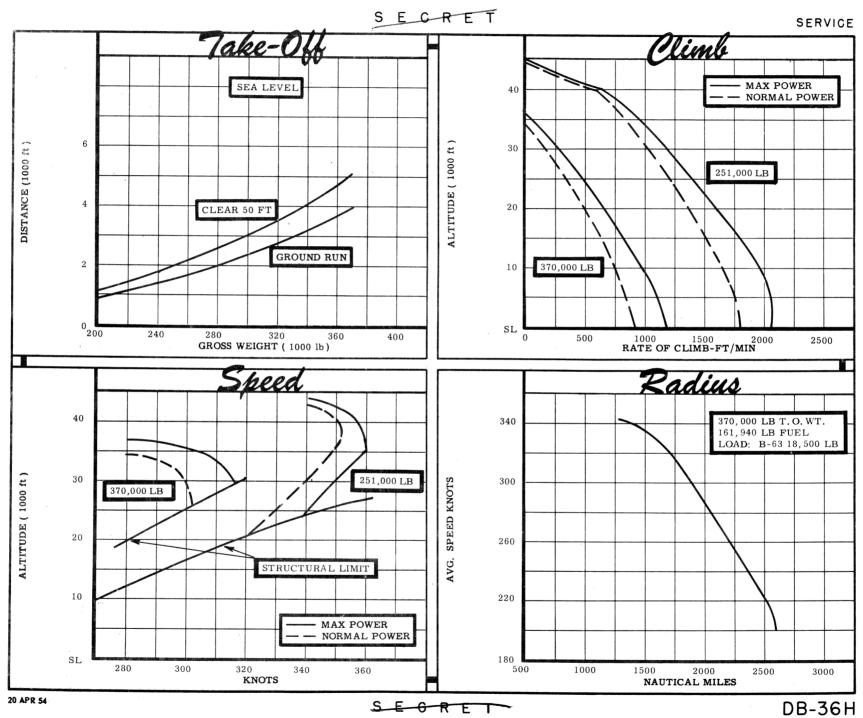
Performance Basis:

- (a) Data source: Calculations based on flight test of B-36F with configuration adjustments.
- (b) Performance is based on powers shown on page 6.

N (1) T.O. power (2) Max power (3) Normal power (4) Detailed descriptions of Radius and Range missions given on page 6.

^{(5) 3000} lb warhead (6) Director radius is 100 n. mi. less than combat radius

⁷ Props reversed.



NOTES

FORMULA: RADIUS MISSIONS I, IV & VI

Warm-up, take-off and climb on course to 5000 feet at normal power, cruise out at long range speeds to point of cruise climb operation. Climb so as to arrive at cruise ceiling 400 nautical miles before release of B-63. Cruise at long range speeds at launch altitude, using best engine (jet-reciprocating) combination; 15 minutes from target, conduct 10 engine normal power run-in, launch B-63, conduct 2 minutes evasive action and 8 minutes escape at normal power. After leaving launch area, cruise back at long range speeds using best engine combination until 400 nautical miles from point of launch; descend to optimum cruise altitude and cruise climb back to base. Range free allowances include 10 minutes normal power fuel consumption for reciprocating engines and 5 minutes normal power fuel consumption for jet engines for starting and take-off, 2 minutes normal power fuel consumption at sea level for long range speeds (reciprocating engines only) plus 5% of initial fuel load for landing and endurance reserve.

FORMULA: RADIUS MISSION II

Warm-up, take-off and climb on course to 25,000 feet at normal power, cruise out at long range speeds at this altitude to point of climb so as to arrive at cruise ceiling 400 nautical miles before release of B-63. Conduct mission within 400 nautical mile zone the same as for Radius Mission I. Descend to 25,000 feet and cruise back to base. Range free allowances are the same as for Radius Mission I.

FORMULA: RADIUS MISSIONS III & VII

Entire mission is flown at normal power, Warm-up, take-off and climb on course to optimum altitude for high speed, cruise at optimum altitude for high speed to point where climb is made so as to arrive at cruise ceiling 400 nautical miles before release of B-63. Cruise at launch altitude to point of release, launch B-63, conduct 2 minutes of evasive action and cruise back 400 nautical miles. Descend to optimum altitude for high speed and return to base. If, after launching B-63, the flight path is above combat altitude, climb is begun after 2 minutes of evasive action. Range free allowances are the same as for Radius Mission I.

FORMULA: RANGE MISSION V

Warm-up, take-off and climb on course to 5000 feet at normal power, cruise climb at long range speeds until all usable fuel ts consumed. Range free allowances are the same as for Radius Mission I except for omission of 2 minutes evasive action.

GENERAL DATA

- (a) Total fuel capacity is usable only for special loading with equipment removed from the aircraft.
- (b) Engine ratings shown on page 3 are manufacturer's guaranteed ratings. Power values used for performance calculations are as follows:

(6) R-4360-53 an	d (4) J47-19
BHP - RPM - ALT - MIN	S. L. STATIC LB - RPM - MIN
T.O. *3800 - 2800 - SL - 5	T.O. 5010 - 7950 - 5
Max: 3500 - 2800 - Up to _ 30	Max: 5010 - 7950 - 30
Nor: 2800 - 2600 - Up to -Cont 39,000**	Nor: 4700 - 7630 - Cont
*Wet ** Turbo supercharger limitation	

(c) Take-off at 370,000 lb gross weight is authorized only for airplanes on which structural modifications to the main landing gear have been accomplished in accordance with ECP 1890B and ECP 1890L.

PERFORMANCE REFERENCE:

Consolidated Vultee Aircraft Corp. Report FZA-36-300, dated 1 Dec 1953.

REVISION BASIS: Initial Issue.

DEC 53