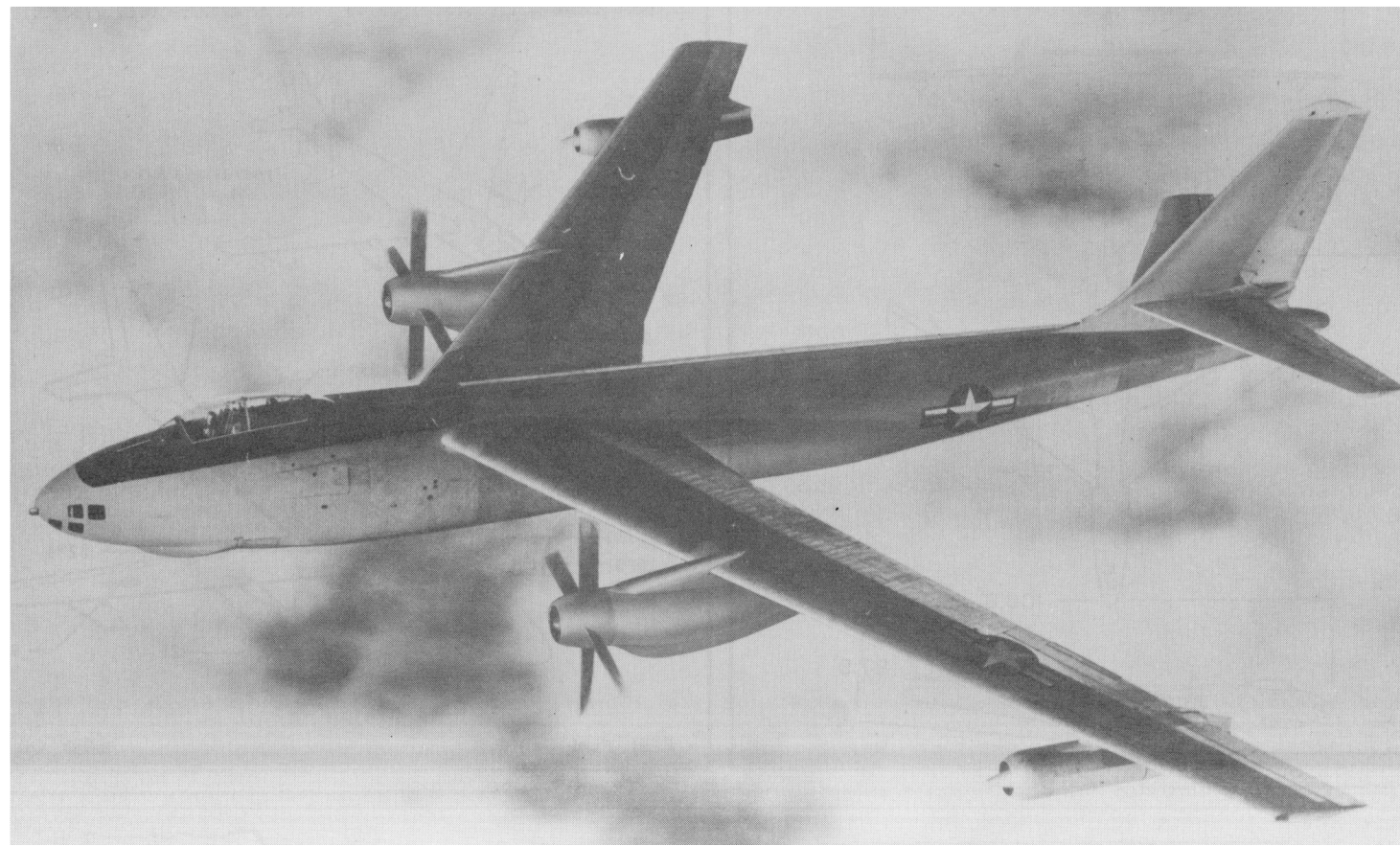


Unclassified
~~SECRET~~

A-1
(X) B-47D/CAN

EXPERIMENTAL



Standard Aircraft Characteristics

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

XB-47D

Boeing

TWO YT49-W-1
WRIGHT
AND
TWO J47-GE-23
GENERAL ELECTRIC

13 JUL 53
REVISED

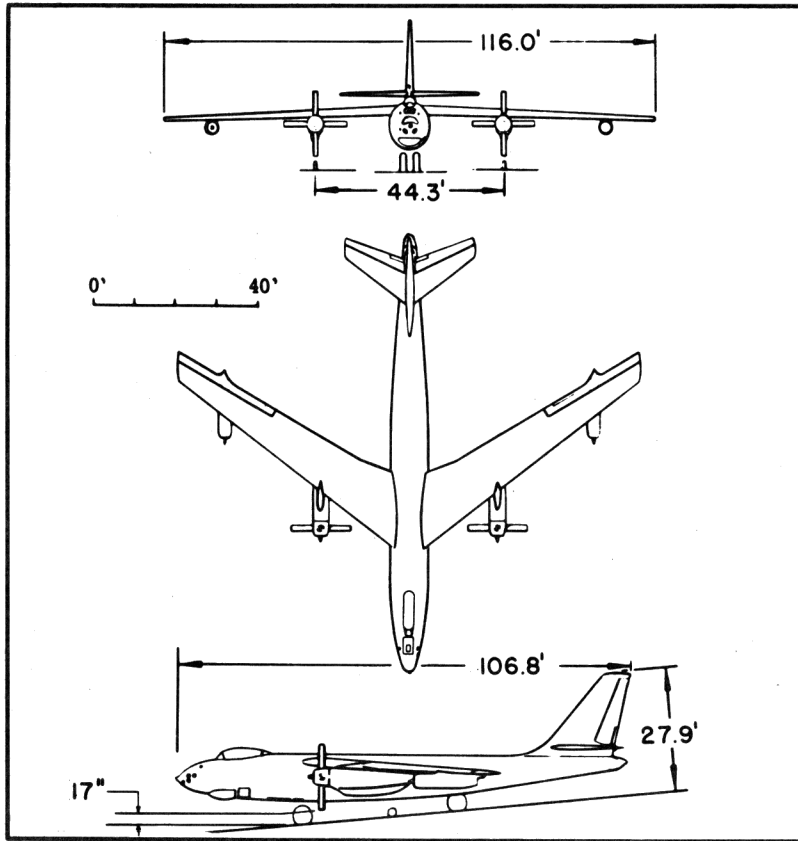
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XB-47D

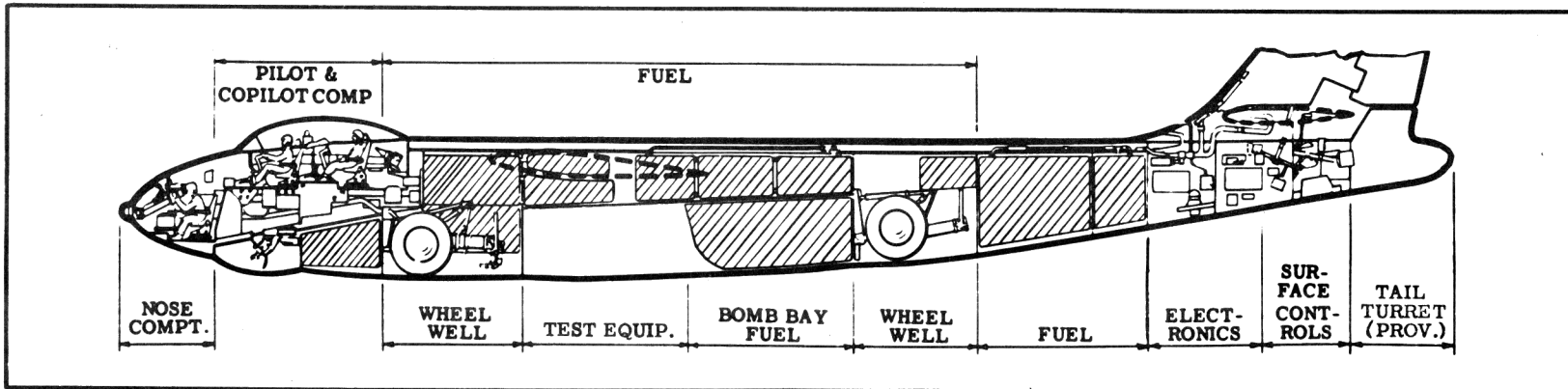
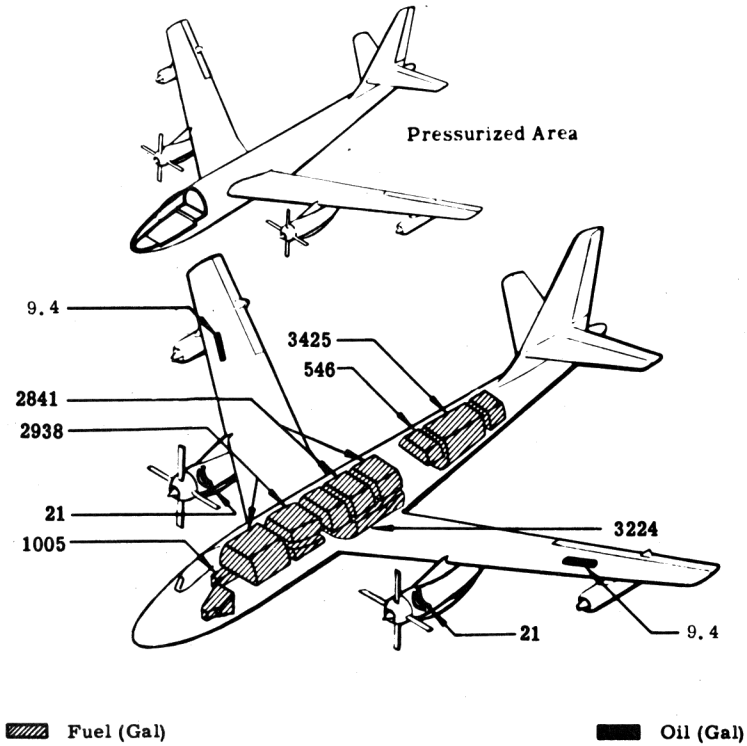
Classification cancelled
or changed to Unclassified
AUTH: AFSC AF of Sec Class Guide 1 Jan 64
BY: a P. Sonnerborn 1 Apr 64 DOD Dir 5 Dec 10
Signature and Grade 10 Dec 67

Volume One 14 July 1953

537C-12001A



Wing Area1428 sq ft Wing Section Boeing 145
 Aspect Ratio.....9.43 M. A. C. 156"



POWER PLANT

No & Model.....(2) YT49-W-1
 MfrWright
 Engine Spec No. 875C
 TypeAxial
 Red. Gear Ratio.....0.143
 Prop MfrCurtiss
 Blade Design No. C-846SA
 Prop Type.....Reversible
 No. Blades4
 Prop Diameter15'0"
 Plus
 No. & Model(2) J47-GE-23
 Mfr General Electric
 TypeAxial
 Length.....145"
 Diameter 39.5"
 Weight (dry)2512 lb

ENGINE RATINGS

(2) YT49-W-1
 S. L. S. ESHP - SHP- LB-RPM-MIN
 T. O. 10,380 - 9000 - 3450-8000-5
 Mil: 10,380 - 9000 - 3450-8000-30
 Nor: 9,450 - 8250 - 3000-7700-Con

Plus
 (2) J47-GE-23
 S. L. Static LB - RPM - MIN
 Max: *6090 - 7950 - 5
 Mil: *5850 - 7800 - 30
 Nor: *5590 - 7630 - Cont

* No inlet screens

DIMENSIONS

Wing
 Span116.0'
 Incidence (root) 2°40'
 (tip) 2°45'
 Dihedral 0°
 Sweepback (LE).....36°38'
 Length106.8'
 Height 27.9'
 Tread (outrigger) 44.3'
 Prop Grd Clearance17.0"

Mission and Description

Navy Equivalent: None Mfr's Model: 450-162-28

The XB-47D is a high speed, long range composite turbo-prop, turbo-jet bomber whose mission is to serve as a test bed for determining feasibility of turbo-prop utilization.

The normal crew consists of pilot, co-pilot-gunner, and bombardier-navigator.

Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, and pressurization; hydraulic boost on all control surfaces.

Reversible propellers as well as an emergency braking parachute are used to decrease landing roll distance.

Single-point ground refueling is provided.

Development

Design Initiated Feb 51
 Contract Approval Apr 51
 Mock-up Jan 52
 First Flight Mar 54 (est)
 First Acceptance Jul 54 (est)
 Phase II contract for one prototype only
 XB-47D developed from B-47B

WEIGHTS

Loading	Lb	L. F.
Empty	79,800(E)	
Basic	82,409(E)	
Design	125,000	3.0
Combat	*121,850	
Max T. O.	+184,428	2.0
Max Land	+180,000	

(E) Estimated
 * For Basic Mission
 † Limited by space
 ‡ Limited by structure
 See note (b) page 6

F U E L

Location	No. Tanks	Gal
Fwd, Main*	1	2938
Fwd, Main Aux*	1	1005
Ctr, Main*	1	2841
Aft, Main*	1	3425
Aft, Aux*	1	546
Bomb Bay*	1	3224
See note (d) page 6.		Total 13,979
Grade		JP-4
Specification		MIL-F-5624A

OIL

(YT49-W-1)
 Nacelle 2 42
 Grade Synthetic; WS-2463
 Specification MIL-L-7808A
 (J47-GE-23)
 Wing 2 18.8
 Grade 1005
 Specification MIL-L-6081A
 *Self-Sealing

ELECTRONICS

UHF Command AN/ARC-27
 Omni-Dir. Rec'v'r AN/ARN-14
 Radio Compass AN/ARN-6
 Interphone USAF Combat
 Marker Beacon AN/ARN-12
 Identification AN/APX-6
 Liaison AN/ARC-21
 Loran AN/APN-9A
 ECM AN/APT-5A

B O M B S

See note (c) page 6

G U N S

See note (c) page 6

Loading and Performance - Typical Mission

C O N D I T I O N S	BASIC MISSION	FERRY RANGE
	I	II
TAKE-OFF WEIGHT (lb)	184,428	174,428
Fuel at 6.5 lb/gal (grade JP-4) (lb)	90,865	90,865
Payload (bombs) (lb)	10,000	NONE
Wing loading (lb/sq ft)	129.2	122.1
Stall speed (power off) (kn)	144	140
Take-off ground run at SL ① (ft)	4850	4230
Take-off to clear 50 ft ① (ft)	7320	6500
Rate of climb at SL ③ (fpm)	2910	3200
Rate of climb at SL (one engine out) ⑤ ② (fpm)	1490	1640
Time: SL to 20,000 ft ③ (min)	9.8	8.9
Time: SL to 30,000 ft ③ (min)	19.7	17.7
Service ceiling (100 fpm) ③ (ft)	33,750	35,000
Service ceiling (one engine out) ② (ft)	19,750	21,800
COMBAT RANGE ④ (n. mi.)	5759	5759
COMBAT RADIUS ④ (n. mi.)	2717	2717
Average cruise speed (kn)	402	402
Initial cruising altitude (ft)	24,250	26,100
Target speed ③ (kn)	437	437
Target altitude (ft)	40,000	40,000
Final cruising altitude (ft)	42,400	42,400
Total mission time (hr)	13.7	14.5
COMBAT WEIGHT (lb)	121,850	90,670
Combat altitude (ft)	40,000	42,400
Combat speed ② (kn)	461	476
Combat climb ② (fpm)	720	1400
Combat ceiling (500 fpm) ② (ft)	41,500	47,300
Service ceiling (100 fpm) ③ (ft)	42,500	48,100
Service ceiling (one engine out) ⑤ ③ (ft)	34,800	41,600
Max rate of climb at SL ② (fpm)	5140	7460
Max speed at 13,500 ft ② (kn)	519	519
Basic speed at 35,000 ft ② (kn/ft)	479	487
LANDING WEIGHT (lb)	90,670	90,670
Ground roll at SL ⑥ (ft)	2750	2750
Ground roll (auxiliary brake) ⑦ (ft)	1330	1330
Total from 50 ft ⑥ (ft)	3750	3750
Total from 50 ft (auxiliary brake) ⑦ (ft)	2330	2330

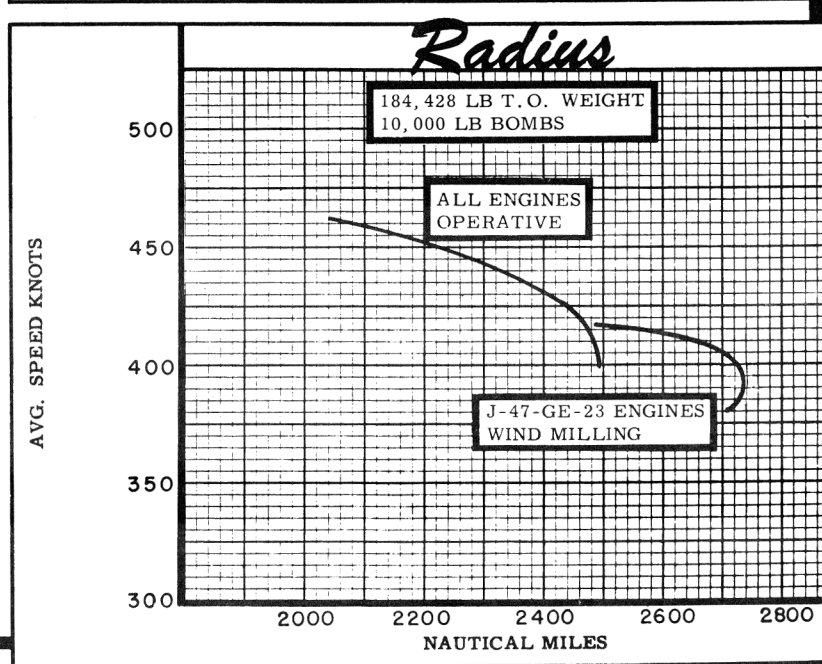
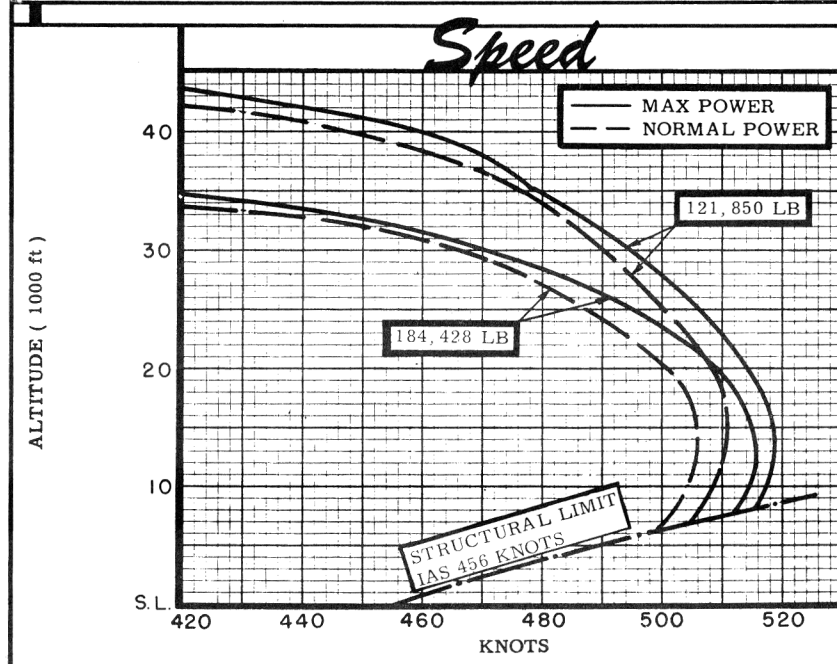
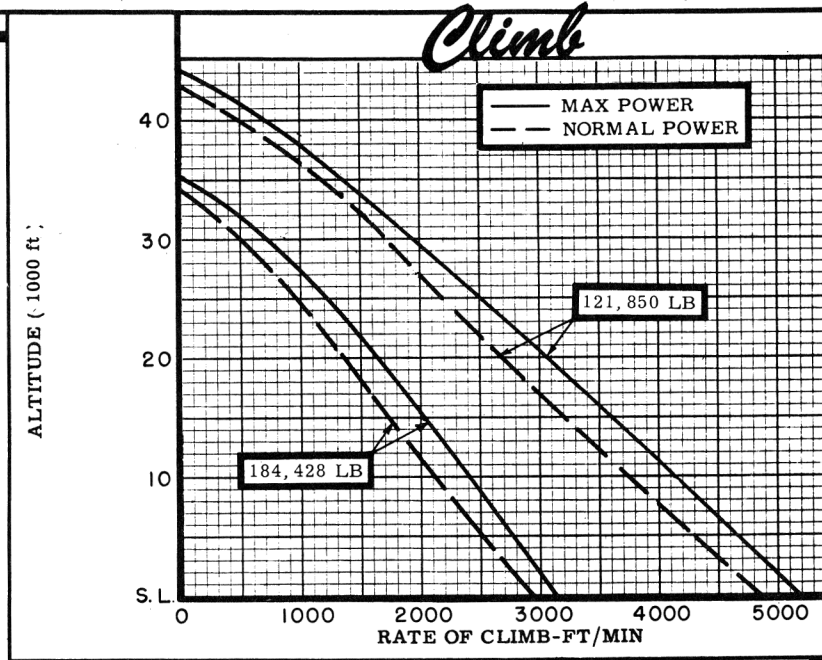
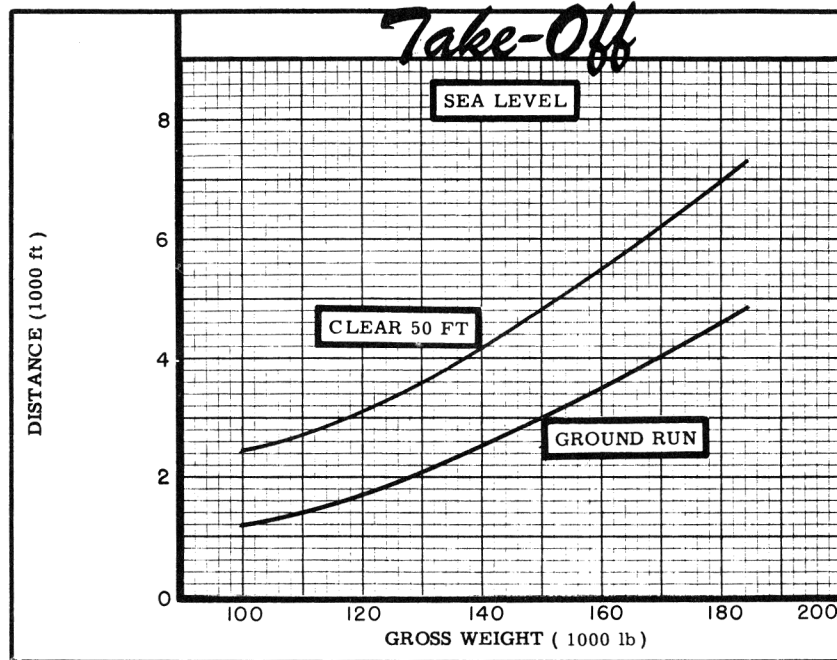
NOTES

- ① T. O. Power
- ② MAX Power
- ③ Normal Power
- ④ Detailed descriptions of RADIUS and RANGE missions given on page 6.

- ⑤ One YT-49 feathered
- ⑥ Turbo-props at full reverse
- ⑦ With drag chute and reverse thrust

PERFORMANCE BASIS:

- (a) Data source: Estimated data plus B-47B Flight Test.
- (b) Performance is based on powers shown on page 3.



N O T E SFORMULA: RADIUS MISSION I

Take-off and climb on course to optimum cruise altitude with turbo-props and turbo-jets at normal power. Cruise out at long range speeds increasing altitude with decreasing airplane weight (turbo-jets windmilling). Climb so as to reach cruise ceiling fifteen (15) minutes from target and run into target at normal power, drop bombs, conduct two (2) minutes evasive action and eight (8) minutes escape from target at normal power. Cruise back to home base at long range speeds increasing altitude with decreasing airplane weight (turbo-jets windmilling). Range free allowances include five (5) minutes normal power fuel consumption for starting engines and take-off, two (2) minutes normal power fuel consumption at combat altitude for evasive action and thirty (30) minutes of maximum endurance (turbo-jets windmilling) fuel consumption at sea level plus 5% of initial fuel load for landing reserve.

FORMULA: RANGE MISSION II

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed increasing altitude with decreasing airplane weight until all usable fuel is consumed. Range free allowances include five (5) minutes normal power fuel consumption for starting engines and take-off and thirty (30) minutes of maximum endurance (turbo-jets windmilling) fuel consumption at sea level plus 5% of initial fuel load for landing reserve.

GENERAL NOTES

- (a) All cruise is performed with turbo-jets windmilling.
- (b) Take-off weight as per Detail Specification D-12250 dated 1 February 1952 but as yet not substantiated by WADC.
- (c) The XB-47D is to be delivered as a test bed with no tactical equipment. However, for comparative purposes, performance shown herein is based on the airplane with the tactical equipment installed.
- (d) Provisions are incorporated to permit installation of 2 wing drop tanks (3316 gal tot).

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