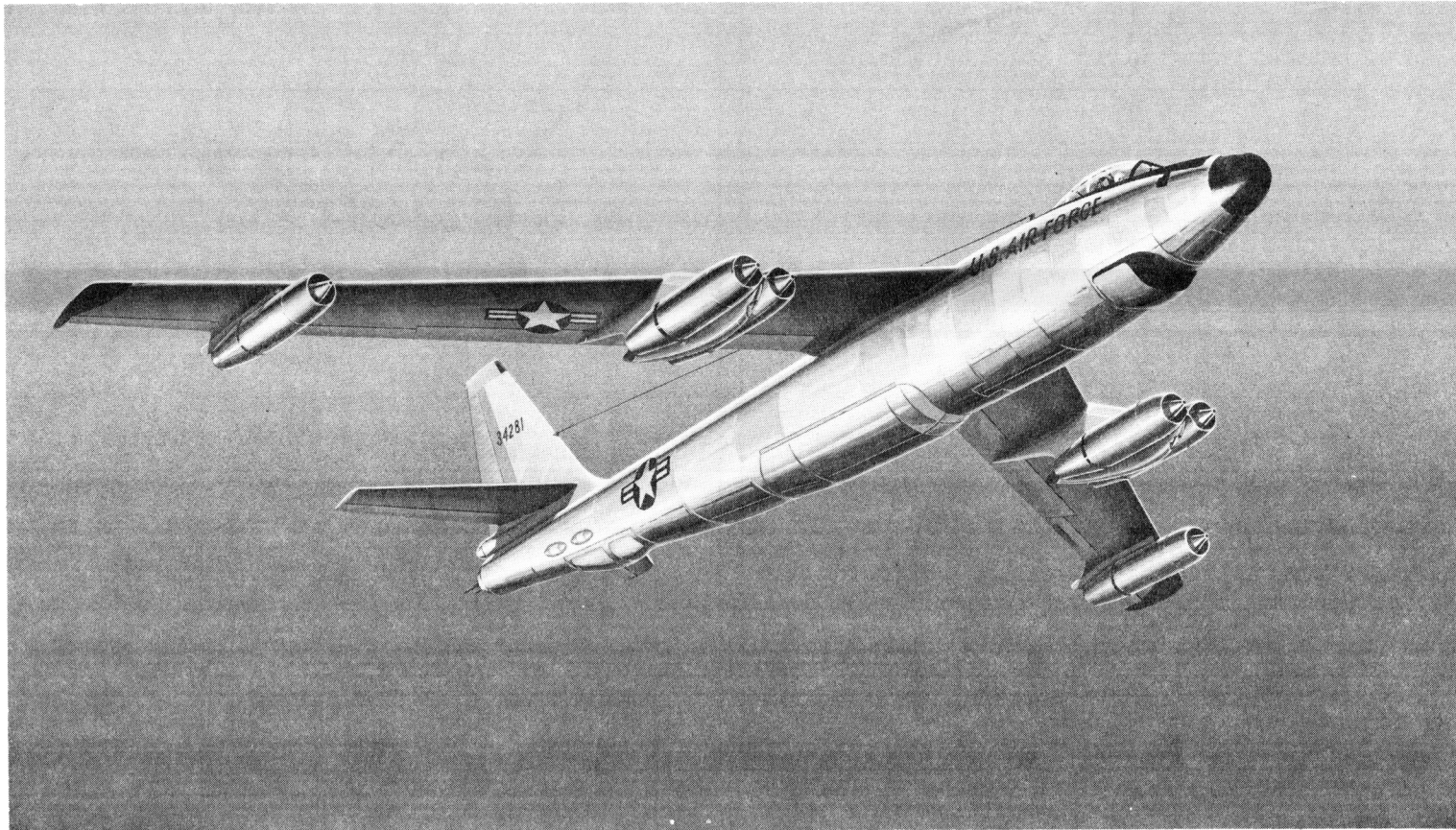


UNCLASSIFIED

SERVICE

2

A1  
(R) B-47H/char



# *Standard Aircraft Characteristics*

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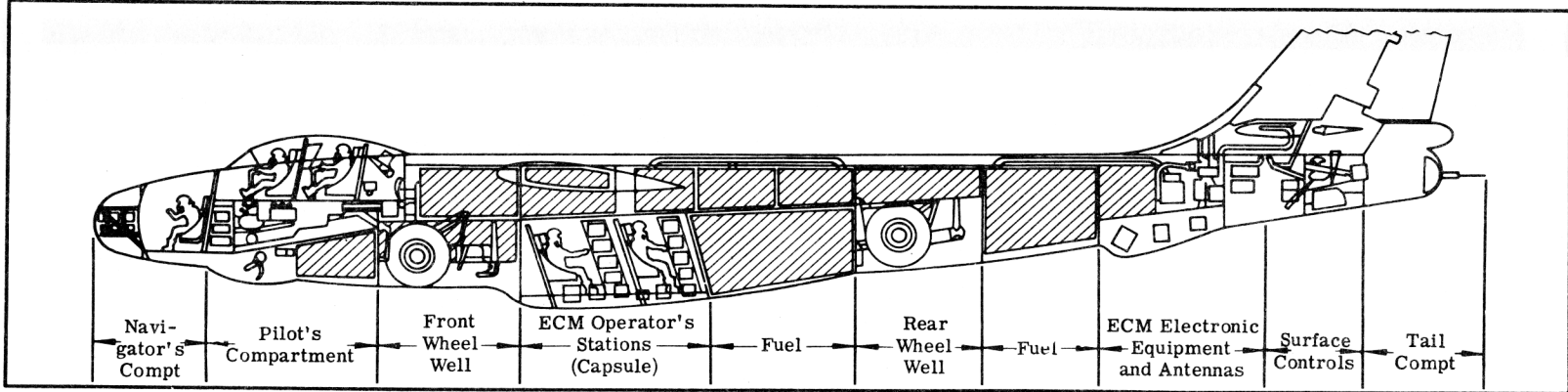
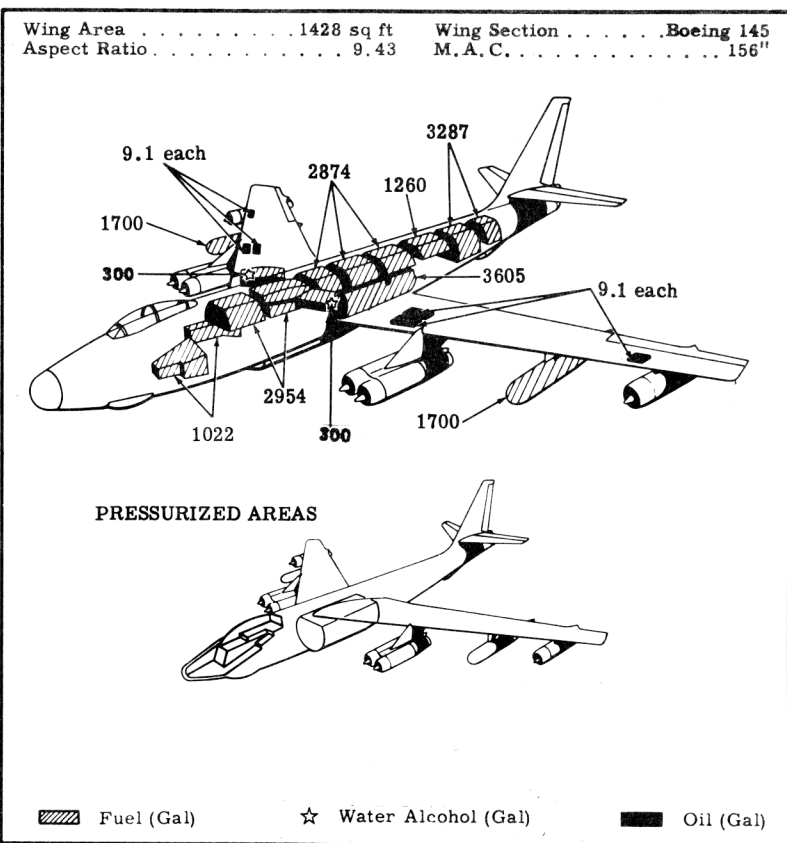
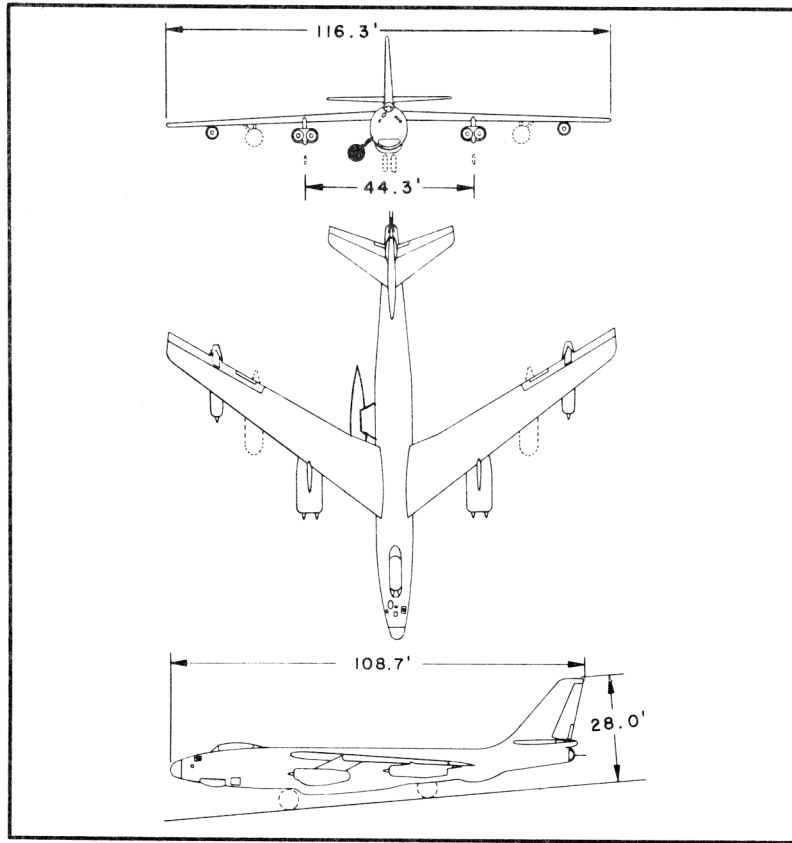
## **RB-47H**

**STRATOJET**

**Boeing**

SIX J47-GE-25

GENERAL ELECTRIC



**POWER PLANT**

Nr & Model . . . . . (6)J47-GE-25  
 Mfr . . . . . General Electric  
 Engine Spec Nr . . . . . E-597a  
 Type . . . . . Axial Flow  
 Length . . . . . 144"  
 Diameter . . . . . 39.3"  
 Weight (dry) . . . . . 2707 lb  
 Tail Pipe . . . . . Fixed Area  
 Augmentation . . . . . Water/Alcohol

No requirement for ATO

**ENGINE RATINGS**

S. L. Static	LB- RPM -	MIN
Max:	*7200- 7950 -	No
	5970- 7950 -	Time
Mil	5670- 7800 -	Limit
Nor	5320- 7630 -	

\*wet  
 water flow of 650 lb/min

**DIMENSIONS**

Wing Span . . . . .	116.3'
Incident . . . . .	2°45'
Dihedral . . . . .	0°
Sweep (LE) . . . . .	36°37'
Length . . . . .	108.7'
Height . . . . .	28.0'
Tread (outrigger) . . . . .	44.3'

**GUNS**

Nr.	Type	Size	Rds ea.	Loc
2 .	M24A1 . .	20mm .	350 . .	Tail

*Mission and Description*

Navy Equivalent: None Mfr's Model: 450-172-52

The tactical mission of this airplane is the detection and location of land and naval surface radar stations. Three ELREC crew stations are housed in a separate pressurized compartment located in the area formerly occupied by the short bomb bay. The airplane is designed to attain range, high speed, and tactical operating altitude in that order of preference.

The normal RB-47H crew consists of pilot, co-pilot, observer, and three ELREC operators, one operator each for the high, medium, and low frequencies.

Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, and pressurization; nesa glass de-icing 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 inflight escape. The pilot and co-pilot are ejected upward, the observer and three ELREC operators downward.

A two-gun turret incorporating a radar computer at the co-pilot's station is installed. 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*

Design Initiated: . . . . .	Jan 59
Mock-up Inspection: . . . . .	Sep 59
CTCI: . . . . .	Aug 60
First Flight: . . . . .	Aug 60
First A/P Delivered: . . . . .	Nov 61

**ELECTRONICS**

VHF Command . . . . .	AN/ARC-27	Radar Set . . . . .	AN/APD-4
Interphone . . . . .	AN/AIC-10	Analyzer . . . . .	AN/ALA-5
Omni-Direc Recv'r . . . . .	AN/ARN-14	Analyzer . . . . .	AN/APA-74
Bomb Nav Sys . . . . .	AN/ASQ-51	Tape Recorder . . . . .	AN/ALH-2
Radio Nav Sys . . . . .	AN/APN-102	ECM . . . . .	AN/ALT-6B
Fire Control System . . . . .	MD-4 or A-5	IFF . . . . .	AN/APX-6A & -25A
Rendezvous Equip . . . . .	AN/APN-76C	Radio Compass . . . . .	AN/ARN-6
	or	Glide Path Recv'r . . . . .	AN/ARN-18
	AN/APN-69	Marker Beacon . . . . .	AN/ARN-12
Radar Set . . . . .	AN/ALD-4	Emergency Keyer . . . . .	AN/ARA-26
Radar Set . . . . .	AN/APR-17	Warning Equip . . . . .	AN/APS-54
Radar Set . . . . .	AN/ASQ-32	Liaison Radio . . . . .	AN/ARC-65
Radar Set . . . . .	AN/ALA-6	Chaff Dispenser . . . . .	AN/ALE-1
Radar Set . . . . .	QRC-91		

cont'd on page 6 note (d)

**WEIGHTS**

Loading	LB	L. F.
Empty . . . . *	89,230 (E)	
Basic . . . . *	90,350(E)	
Design . . . . .	125,000 . . . .	3.0
Combat . . . . .	**139,000	
Max T. O. . . . .	†218,728 . . . .	2.0
Max Inflight . . . .	‡221,000 . . . .	2.0
Max Inflight . . . .	***198,000	
Design Land . . . .	125,000	

(E) Estimated  
 \*\* For basic mission  
 † Capacity limited  
 ‡ With external tanks  
 \*\*\* Without external tanks  
 \* Includes pod and strut

**F U E L**

Location	Nr. Tanks	Gal
Fwd Main* . . . . .	5 . . . . .	2954
Fwd Aux . . . . .	2 . . . . .	1022
Ctr Main* . . . . .	3 . . . . .	2874
Bomb Bay . . . . .	1 . . . . .	3605
Aft Main* . . . . .	2 . . . . .	3287
Wing Drop . . . . .	2 . . . . .	3400
Aft Aux . . . . .	1 . . . . .	1260
	Total	18,402

Grade . . . . . JP-4  
 Specification . . . . . MIL-F-5624A  
 \*Self-sealing except for three wing cells of forward main tank

**OIL**

Wing Panel . . . . .	6 . . . . .	Total 54.6
Grade . . . . .		1005
Specification . . . . .		MIL-L-6081A

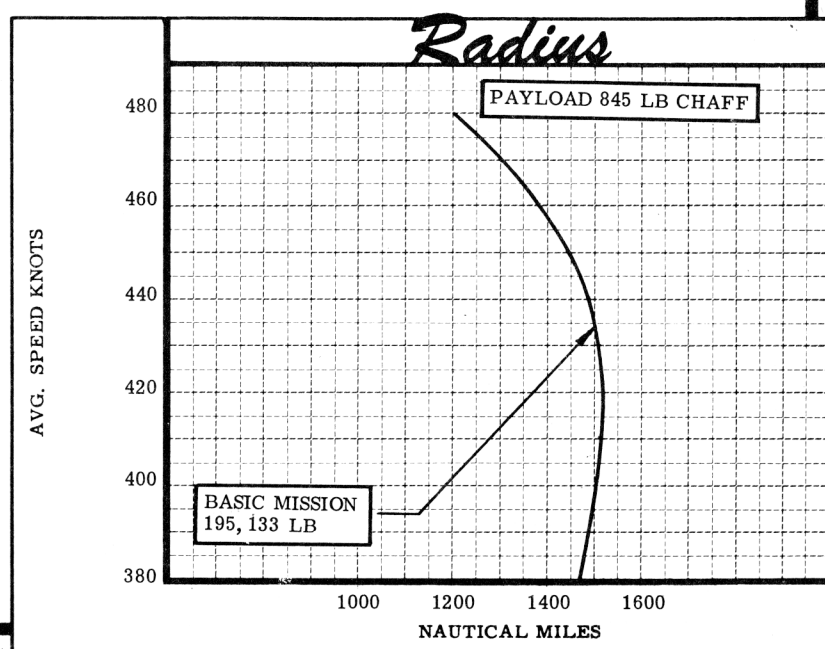
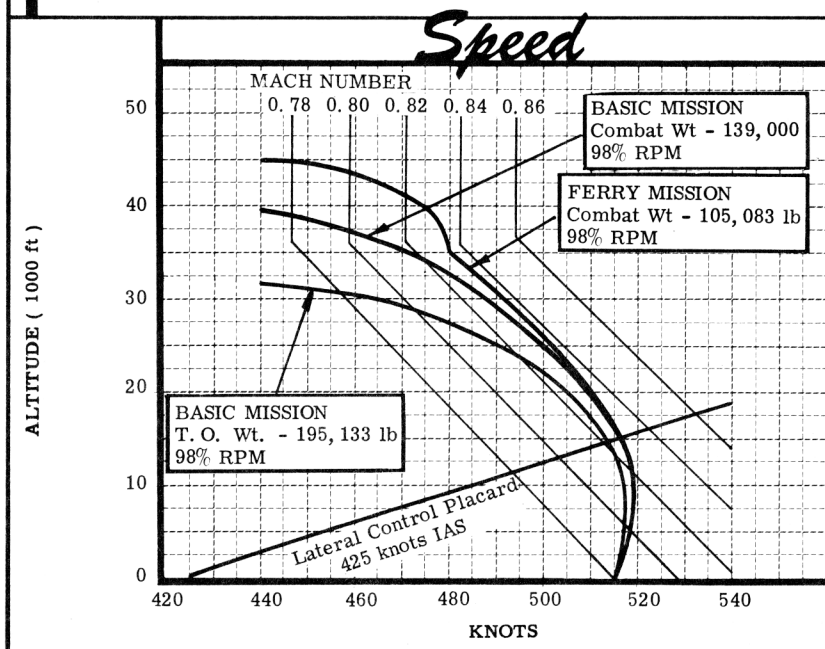
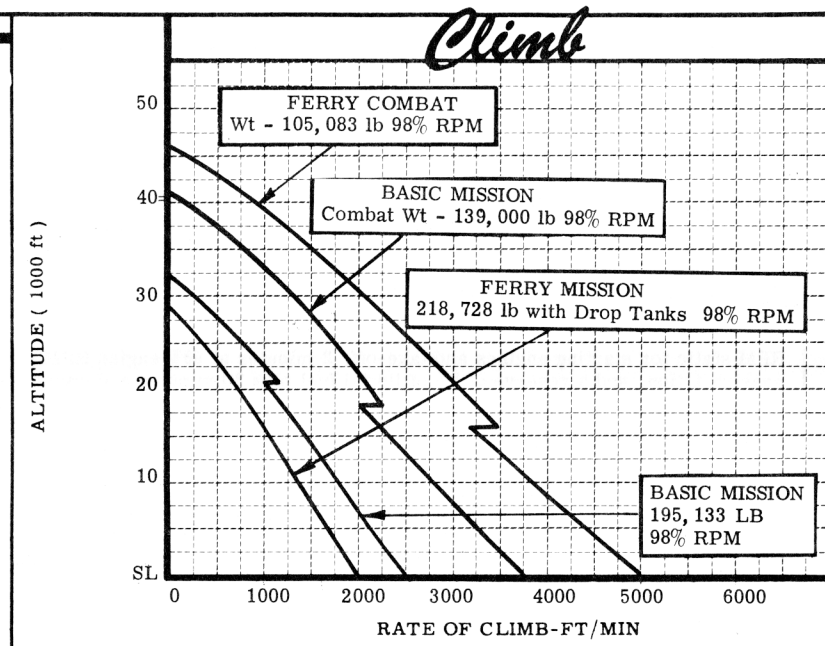
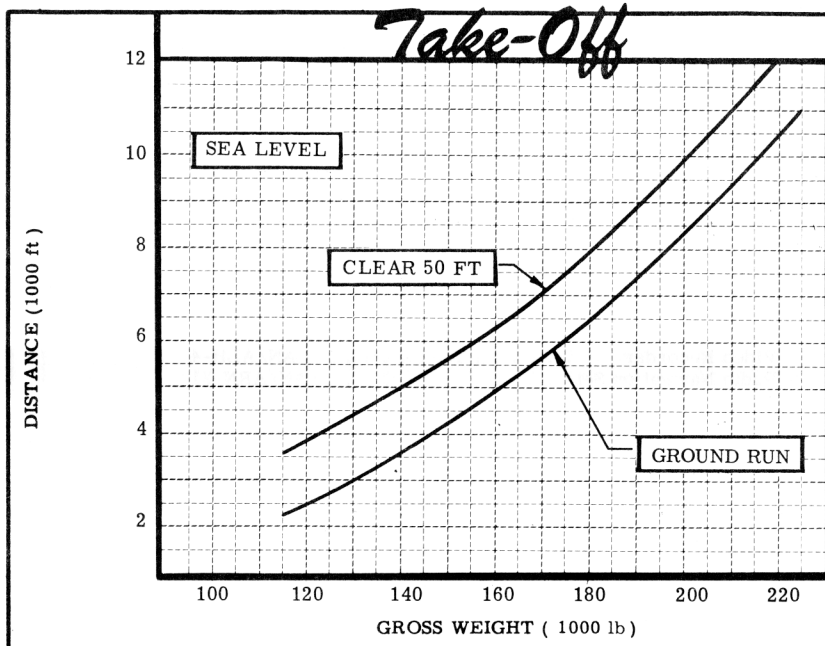
**WATER/ALCOHOL**

Wing Inboard . . . . .	6 . . . . .	600
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# Loading and Performance—Typical Mission

C O N D I T I O N S	BASIC MISSION	FERRY MISSION
TAKE-OFF WEIGHT (lb)	195,133 <sup>(12)</sup>	218,728
Fuel at 6.5 lb/gal (Grade JP-3) <sup>(1)</sup> (lb)	96,401	118,436
Payload (lb) <sup>(2)</sup>	845	845 <sup>(11)</sup>
Wing Loading <sup>(3)</sup> (lb/ft <sup>2</sup> )	131	147
Stall Speed (Power off) <sup>(3)</sup> <sup>(4)</sup> (kn)	156	165
Take-off Ground Run at Sea Level <sup>(5)</sup> (ft)	7800	10,300
Take-off to Clear 50 feet (ft)	9300	11,950
Rate of Climb at Sea Level <sup>(6)</sup> (fpm)	2500	2070
Rate of Climb at Sea Level (one engine out) <sup>(7)</sup> <sup>(6)</sup> (fpm)	450	250
Time - Sea level to 20,000 ft (min)	13	16
Time - Sea level to 27,600 ft (service ceiling) (min)	26	36
Service Ceiling (100 ft/min) (ft)	31,500	28,000
Service Ceiling (one engine out) (ft)	26,000	23,200
COMBAT RANGE (n m)	3403	3403
COMBAT RADIUS <sup>(10)</sup> (n m)	1520	1520
Average speed (kn)	424	429
Initial Cruising Altitude (ft)	28,500	25,000
Target Speed <sup>(6)</sup> (kn)	460	429
Target Altitude (ft)	37,200	41,000
Final Cruising Altitude (ft)	41,600	41,000
Total Mission Time (hr)	6.4	7.51
COMBAT WEIGHT (lb)	139,000	105,083
Combat Altitude (ft)	37,200	41,000
Combat Speed <sup>(6)</sup> (kn)	460	472
Combat Climb (fpm)	550	750
Combat Ceiling (500 fpm) (ft)	37,600	42,600
Service Ceiling (100 fpm) (ft)	40,200	45,000
Service Ceiling (one engine out) (ft)	35,500	40,500
Maximum Rate of Climb at Sea Level <sup>(6)</sup> (fpm)	3700	5000
Maximum Speed at Optimum Altitude <sup>(6)</sup> (kn/ft)	516/15,000	516/15,000
Basic Speed at 35,000 ft (kn)	419	480
LANDING WEIGHT (lb)	102,977	105,083
Ground Roll at Sea Level (ft)	6200	6300
Ground Roll (Drag chute) <sup>(8)</sup> (ft)	4200	4250
Total from 50 ft (ft)	7350	7450
Total from 50 ft (Drag chute) <sup>(8)</sup> (ft)	5350	5400

- |       |   |  |   |   |
|-------|---|--|---|---|
| NOTES | <sup>(1)</sup> Useable fuel                   | <sup>(6)</sup> 98% RPM                             | <sup>(11)</sup> Not dropped during mission (chaff)                      | PERFORMANCE BASIS:  |
|       | <sup>(2)</sup> Dropped in target area (chaff) | <sup>(7)</sup> Gear & flaps down at T. O. velocity | <sup>(12)</sup> Includes pod and strut no tanks                         | (a) Data source: Calculated data based on flight test of R-47H (Silver King) AF53-4280 per WFT 896, July 1960 |
|       | <sup>(3)</sup> Based on unstick weight        | <sup>(8)</sup> Planned                             | <sup>(13)</sup> Includes pod & strut, wing tanks on, dropped when empty | (b) T. O. 1R-47H-1  |
|       | <sup>(4)</sup> Out of ground effect           | <sup>(9)</sup> Normal                              |   |   |
|       | <sup>(5)</sup> With water augmentation        | <sup>(10)</sup> Detailed mission (page 6)          |   |   |



**N O T E S**

FORMULA: RADIUS MISSION I

Take-off, climb on course to optimum cruise altitude at 98% engine RPM, and cruise out at long range speeds and altitudes. Climb so as to reach cruise ceiling 15 minutes before reaching the target area. Run into the target area at 98% engine RPM, release chaff, and take photos during run. At 98% engine RPM conduct 2-minute evasive action and 8-minute 98% engine RPM escape, Attain optimum cruise altitude during escape. Cruise to home base at optimum speeds and altitudes. Range free allowances are 5 minutes at 98% engine RPM static for starting engines and take-off, 2 minutes at 98% engine RPM evasive action, and a reserve of 5% of initial fuel plus 30 minutes endurance fuel at sea level.

FORMULA: FERRY RANGE MISSION II

Take-off, climb on course to optimum cruise altitude at 98% engine RPM, and cruise out at long range speeds and altitudes. Release drop tanks when empty. Arrive over destination with 5% of initial fuel plus fuel for 30 minutes endurance at sea level. Range free allowance are 5 minutes at 98% engine RPM for starting engines and take-off and reserve fuel. (Ferry range mission is computed for a pod strut and wing tanks on configuration to show max range. The gross weight includes 845 pounds chaff and 700 rounds of ammunition, neither of which is used in flight).

GENERAL NOTES

- (a) Performance is based on R-47H flight test per WFT 896, July 1960.
- (b) For detailed mission planning, refer to T. O. IR-47H-1.

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

Note (d) Electronics continued from page 3

Electronic Timing Set . . . . .	AN/USQ-18
PRF Discriminator Unit . . . . .	QRC-63
Video Recorder . . . . .	AN/ALH-4
Radio Navigation Set . . . . .	AN/ARN-21
Astro Navigation Set . . . . .	AN/AVN-1

(6) J47-GE-25

S. L. Static	Thrust (lb)	RPM	Minutes Allowable
Take-off	6700	*7950 (100%)	No
Military	5640	7800 ( 98%)	time
Normal	5270	7630 ( 96%)	limit

\*water/alcohol

REVISION BASIS:

Data reCOORDINATED by OCAMA Jul 64. Additional electronics shown, page 6.

PERFORMANCE REFERENCE:

- (1) WFT 896 flight test report
- (2) Boeing Document D3-3600-8-47 Aerodynamics Analysis of the Silver King Flight Test.
- (3) T. O. IR-47H-1 Flight Manual

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