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26 JUN 59 (DATE)~~



# Standard Aircraft Characteristics

BY AUTHORITY OF  
THE SECRETARY  
OF THE AIR FORCE

**RB-47E**  
**STRATOJET**  
Boeing

SIX J47-GE-25  
GENERAL ELECTRIC

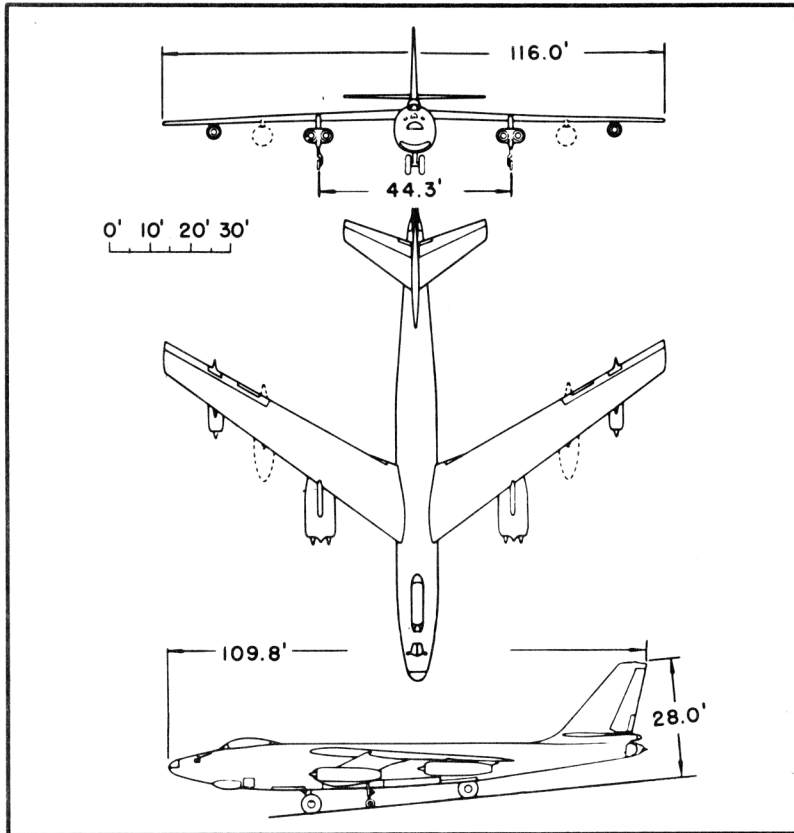
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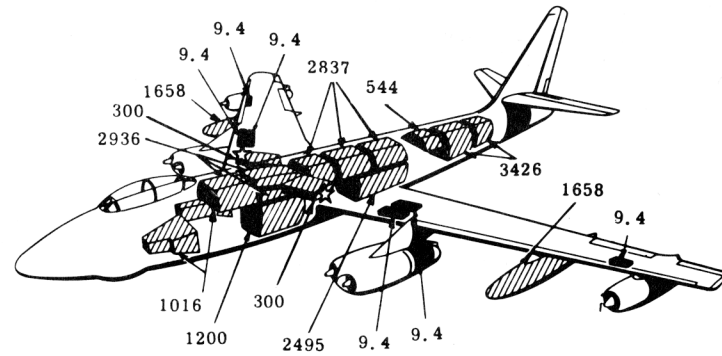
AUTH: AF 59 AF 5C Sec. Clear Guide 1 Jan 64  
By G.R. Somelborn 10pm 64 DOD DIR 520010  
Signature and Grade 13 Dec 1966

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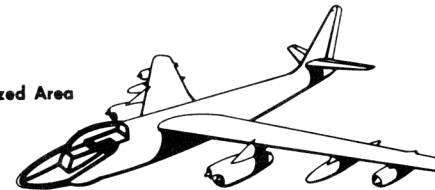
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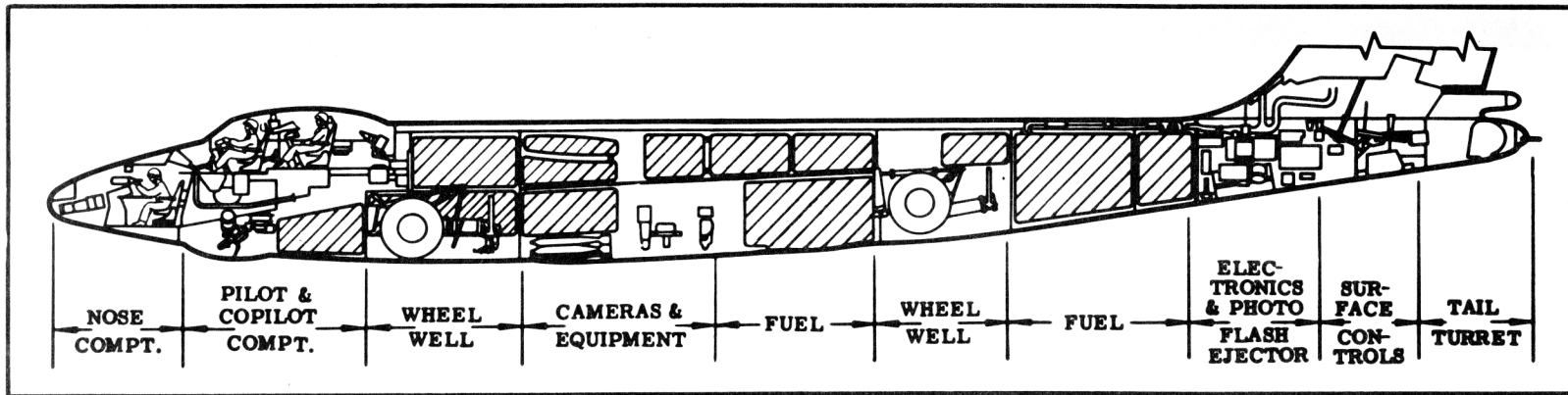
Wing Area . . . . . 1428 sq ft    Wing Section . . . . . Boeing 145  
 Aspect Ratio . . . . . 9.43    M. A. C. . . . . 156"



Pressurized Area



▨ Fuel (Gal)    ☆ Water Alcohol (Gal)    ■ Oil (Gal)



### POWER PLANT

No. & Model . . . . . (6)J47-GE-25  
 Mfr . . . . . General Electric  
 Engine Spec No. . . . . E-597  
 Type . . . . . Axial Flow  
 Length . . . . . 148"  
 Diameter . . . . . 39.5"  
 Weight (dry) . . . . . 2707 lb  
 Tail Pipe . . . . . Fixed Area  
 Augmentation . . . . . Water/Alcohol

ATO  
 No. & Model . . . . . (18)14DS1000  
 Mfr . . . . . Allegheny  
 Weight (loaded) . . . . . 200 lb ea

or  
 No. & Model . . . . . (18)15KS1000  
 Mfr . . . . . Aerojet  
 Weight (loaded) . . . . . 131 lb ea

### ENGINE RATINGS

S. L. Static	LB	-	RPM	-	MIN
Max: (wet)	6970	-	7950	-	5
	5970	-	7950	-	5
Mil:	5670	-	7800	-	30
Nor:	5320	-	7630	-	Cont

\*ATO  
 Thrust (lb) . . . . . 18,000  
 Duration (sec) . . . . . 14

or  
 Thrust (lb) . . . . . 18,000  
 Duration (sec) . . . . . 15

\*46th article and subsequent to be fitted with 33x1000 lb thrust external units. Present plans call for retrofitting the first 45 articles.

## Mission and Description

Navy Equivalent: None Mfr's Model: 450-158-36

The principal mission of the RB-47E is strategic photo-reconnaissance. Alternate missions are day and night mapping, charting and bomb damage assessment.

The normal crew consists of pilot, co-pilot and photo-navigator. Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, pressurization, NESA glass de-icing for the pilot's windshield, de-frosting 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 co-pilot are ejected upward and the photo-navigator downward.

The water/alcohol injection system utilizes a total tank capacity of 600 gallons which is divided into six individual bladder-type tanks, three each located in the inboard sections of the right and left wings.

Solid propellant rockets are installed internally for assist take-off. A two-gun tail 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.

The bicycle landing gear is electrically operated. There are provisions for a periscopic sextant and a bomb scoring device.

Major differences from the B-47E are that it can only carry photo flash bombs and incorporates four camera stations and associated structural changes.

## Development

Design Initiated . . . . . Mar 51  
 First Flight . . . . . Aug 53  
 First Delivery . . . . . Sep 53

### WEIGHTS

Loading	Lb	L. F.
Empty . . . . .	81,881 (E)	
Basic . . . . .	84,879 (E)	
Design . . . . .	125,000	3.0
Combat . . . . .	*127,600	
Max T. O. . . . .	†180,000	2.0
Max In Flt . . . . .	‡202,000	2.0
Max Land . . . . .	†180,000	

(E) Estimated  
 \* For Basic Mission  
 † Limited by strength  
 ‡ Limited by strength with ext. tanks  
 Max T. O. weight does not include ATO, fuel or water/alcohol.

### FUEL

Location	No. Tanks	Gal
Fwd, main* . . . . .	1	2936
Fwd, aux . . . . .	1	1016
Center, main* . . . . .	1	2837
Fwd, Bomb bay . . . . .	1	1200
Aft, Bomb bay . . . . .	1	2495
Aft, Main* . . . . .	1	3426
Wg, Drop † . . . . .	2	3316
ATO . . . . .	1	544
	Total	17,770
Grade . . . . .		JP-4
Specification . . . . .		MIL-F-5624A

**OIL**

Wing . . . . .	6	(tot) 56.4
Grade . . . . .		1005
Specification . . . . .		MIL-L-6081A

**WATER/ALCOHOL**

Wg, Inbd . . . . .	6	600
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\*Self-Sealing  
 †Provisions for Wg, drop tanks but not normally carried.

### DIMENSIONS

Wing  
 Span . . . . . 116.0'  
 Incidence . . . . . 2°45'  
 Dihedral . . . . . 0°  
 Sweepback (LE) . . . . . 36°37'  
 Length . . . . . 109.8'  
 Height . . . . . 28.0'  
 Tread (outrigger) . . . . . 44.3'

### BOMBS

No.	Class (lb)
10	Flash Bombs . . . . . (M-120) 154
200	Photo Flash Cart.: (M-112) 1

### GUNS

No.	Type	Size	Rds ea	Loc
2	M24A1	20mm	350	Fus, tail

### CAMERAS

No.	Type	Lens
	Forward Oblique Station	
1	K-38	24"
	Tri-Metrogon Station	
3	KA-3	6"
	Vertical Station	
1	K-38	24" or 36"
	or	
1	T-11	6"
	or	
1	K-37	12"
	Split Vertical Station	
2	K-38	24" or 36"
	or	
2	K-37	12"

### ELECTRONICS

VHF Command . . . . . AN/ARC-27  
 Liaison . . . . . \*AN/ARC-21  
 Interphone . . . . . AN/AIC-10  
 Radio Compass . . . . . AN/ARN-6  
 Marker Beacon . . . . . AN/ARN-12  
 Glide Path . . . . . AN/ARN-18  
 Fire Control . . . . . A-5  
 Omni-Direct, Recv'r: AN/ARN-14  
 Rendezvous Radar . . . . . AN/APN-76  
 ECM (2) . . . . . AN/APT-5A  
 IFF . . . . . AN/APX-6  
 Bombing Nav. Radar: AN/APQ-31A

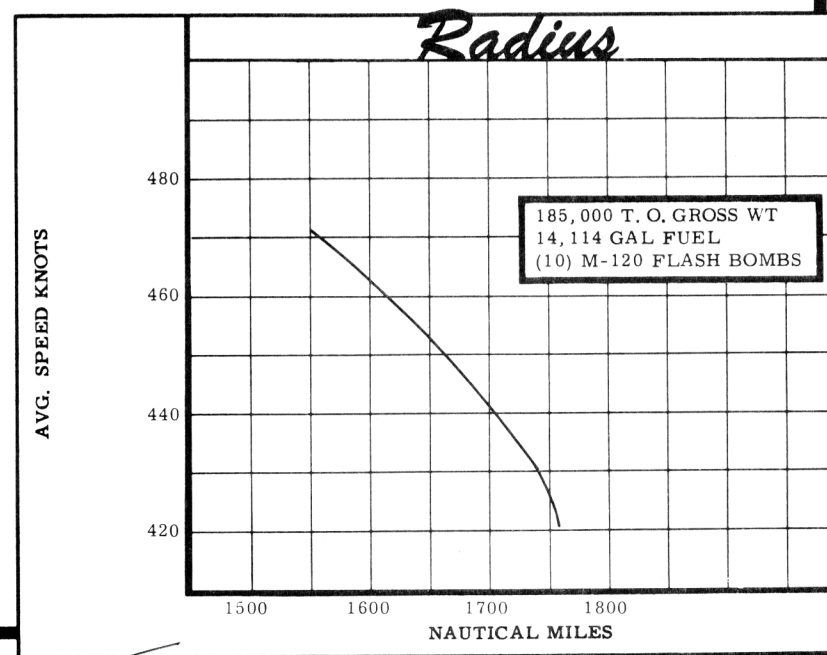
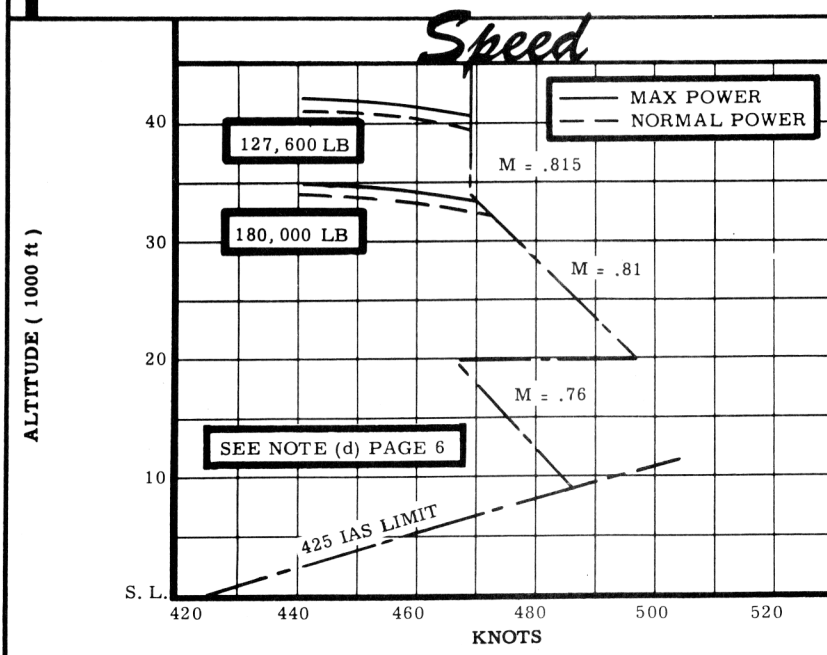
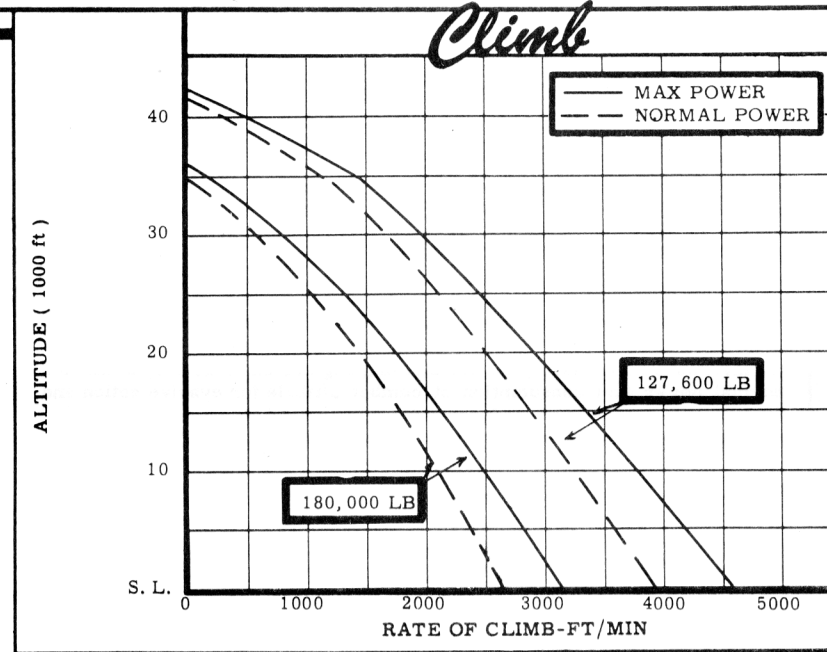
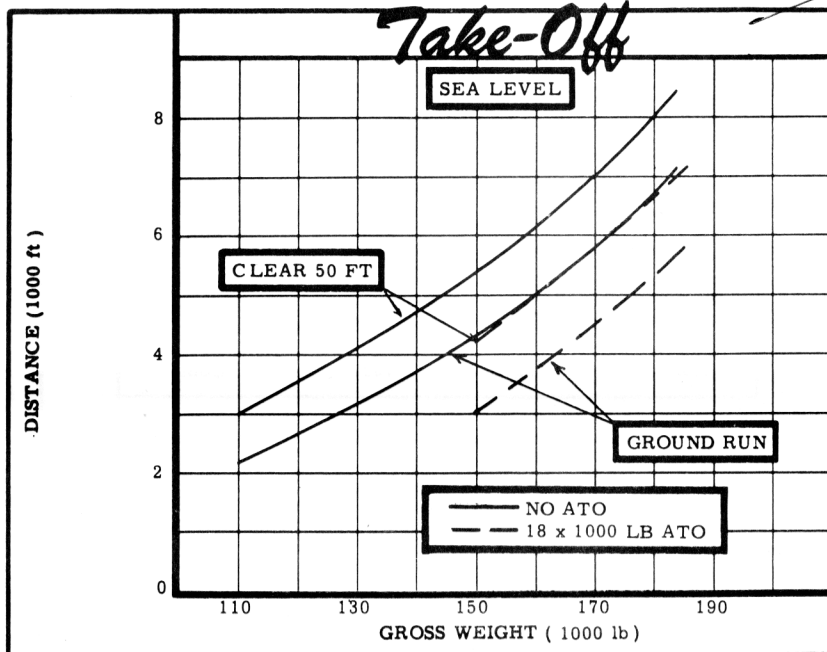
\*Provisions only

# Loading and Performance - Typical Mission

C O N D I T I O N S			BASIC MISSION	DAY RECONN	FERRY RANGE
TAKE-OFF WEIGHT	⑥	(lb)	185,000	185,000	185,000
Fuel at 6.5 lb/gal (grade JP-4)		(lb)	91,743	93,307	93,303
Payload (Camera)		(lb)	694	690	694
Payload (Flash Bombs)		(lb)	1500	None	None
Wing loading	⑧	(lb/sq ft)	126	126	126
Stall speed (power off)	⑧	(kn)	136	136	136
Take-off ground run at SL	①	(ft)	7100	7100	7100
Take-off ground run with ATO	⑤	(ft)	5800	5800	5800
Take-off to clear 50 ft	①	(ft)	8450	8450	8450
Take-off to clear 50 ft w/ATO	⑤	(ft)	7150	7150	7150
Rate of climb at SL	⑧	(fpm)	2630	2630	2630
Rate of climb at SL (one engine out)	⑧	(fpm)	2040	2040	2040
Time: SL to 20,000 ft	③	(min)	9.6	9.6	9.6
Time: SL to 30,000 ft	③	(min)	18.7	18.7	18.7
Service ceiling (100 fpm)	⑧	(ft)	34,200	34,200	34,200
Service ceiling (one engine out)	⑧	(ft)	31,600	31,600	31,600
COMBAT RANGE	④	(n. mi)	—	—	3601
COMBAT RADIUS	④	(n. mi)	1731	1765	—
Average cruise speed		(kn)	433	433	433
Initial cruising altitude		(ft)	31,100	31,100	31,100
Target speed	③	(kn)	467	467	—
Target altitude		(ft)	39,450	39,600	—
Final cruising altitude		(ft)	43,100	43,100	43,100
Total mission time		(hr)	8.02	8.17	8.33
COMBAT WEIGHT		(lb)	127,600	128,400	95,420
Combat altitude		(ft)	39,450	39,600	43,100
Combat speed	⑨	(kn)	469	469	469
Combat climb	②	(fpm)	610	560	1050
Combat ceiling (500 fpm)	②	(ft)	40,000	39,900	45,950
Service ceiling (100 fpm)	③	(ft)	41,350	41,200	47,250
Service ceiling (one engine out)	③	(ft)	38,950	38,800	44,650
Max rate of climb at SL	②	(fpm)	4580	4550	6090
Max speed at 20,000 ft	⑨	(kn)	497	497	497
Basic speed at 35,000 ft	⑨	(kn/ft)	469	469	469
LANDING WEIGHT		(lb)	95,410	95,416	95,420
Ground roll at SL		(ft)	4650	4650	4650
Ground roll (auxiliary brake)	⑦	(ft)	2675	2675	2675
Total from 50 ft		(ft)	5550	5550	5550
Total from 50 ft (auxiliary brake)	⑦	(ft)	3575	3575	3575

NOTES

- |                                   |  |  |
|-----------------------------------|--|--|
| ① T. O. power                     | and Range missions given on page 6                   | ⑦ With braking parachute   |
| ② Max power                       | ⑤ With 18,000 lb (ATO) thrust                        | ⑧ Values quoted are for T. O. weight less ATO, water and alcohol |
| ③ Normal power                    | ⑥ Includes 1332 lb ATO and 3668 lb water and alcohol | ⑨ Structural limit   |
| ④ Detailed descriptions of Radius |  |  |
- Performance Basis:  
(a) Data source: Flight Test  
(b) Performance is based on powers shown on page 6.



**NOTES**FORMULA: RADIUS MISSIONS I & II

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

FORMULA: RANGE MISSION III

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

GENERAL DATA:

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

(6)J47-GE-25			
S. L. Static	LB	RPM	MIN
T. O.:	6770	7950	5
Max:	5640	7800	30
Nor:	5270	7630	Cont

(b) For detailed planning refer to Technical Order AN01-20ENC-1 and latest applicable technical orders.

(c) Maximum landing weight of 180,000 lb based on approximately 8ft/sec ultimate rate of descent with 1G wing lift.

(d) Speed limitations shown were taken from "Safety of Flight Supplement AN01-20ENC-1," dated 15 July 1953.

PERFORMANCE REFERENCE:

Boeing Report No. D-13194, "B-47 Performance Substantiation, Models B-47B (-23 engine), B-47E and RB-47E," dated 3 June 1953.

REVISION BASIS:

Initial Issue.

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