

Unclassified  
~~Confidential~~  
SECRET

A-1  
(GR)B-36D/char  
SERVICE



Unclassified  
Classification cancelled ~~Confidential~~  
or changed to ~~Unclassified~~  
AUTH: AFSA-AFEC Security Clearance Audit 1 Jan 64  
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By A R Somelorn 31 Dec 64  
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# Standard Aircraft Characteristics

BY AUTHORITY OF  
THE SECRETARY  
OF THE AIR FORCE

**Consolidated GRB-36D III**  
**Republic RF-84F**

GRB-36D (III) { SIX R-4360-41  
PRATT & WHITNEY  
Plus  
FOUR J47-GE-19  
RF-84F { ONE J65-W-3 or B-3  
WRIGHT or BUICK

GRB-36D(III) / RF-84F

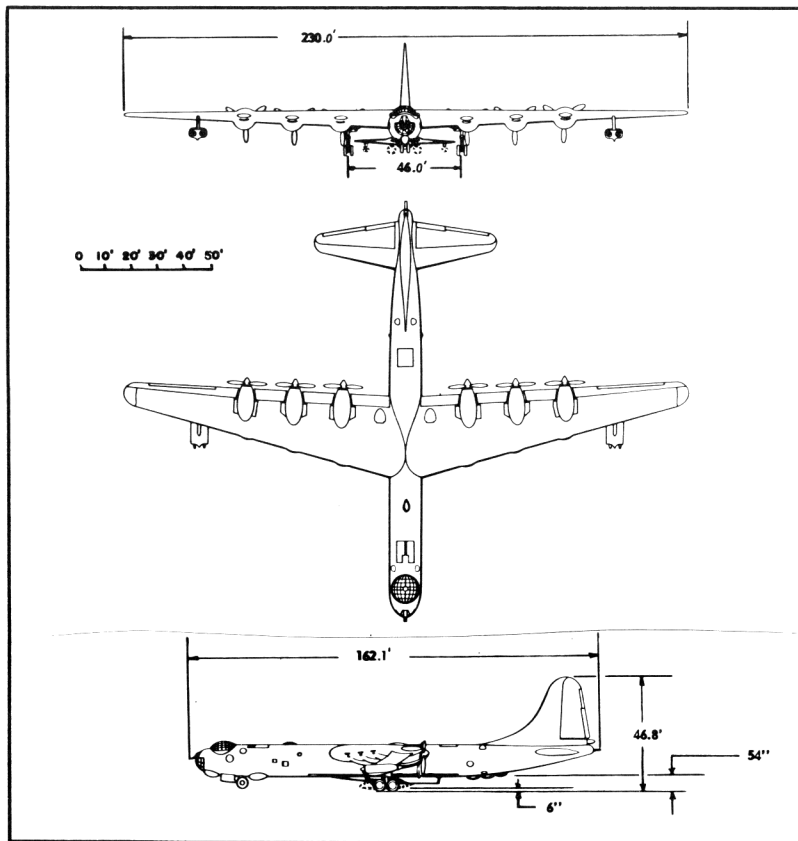
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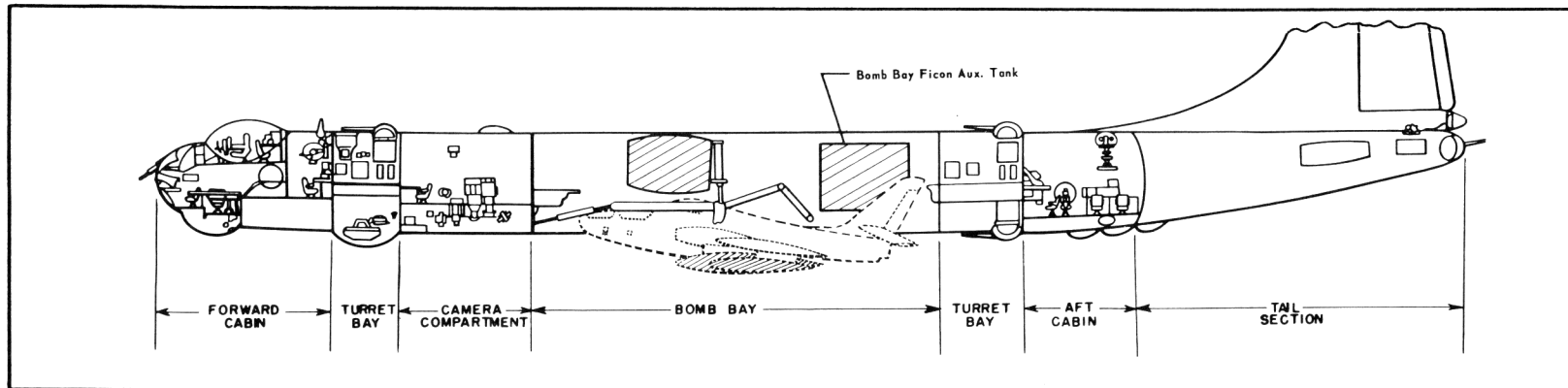
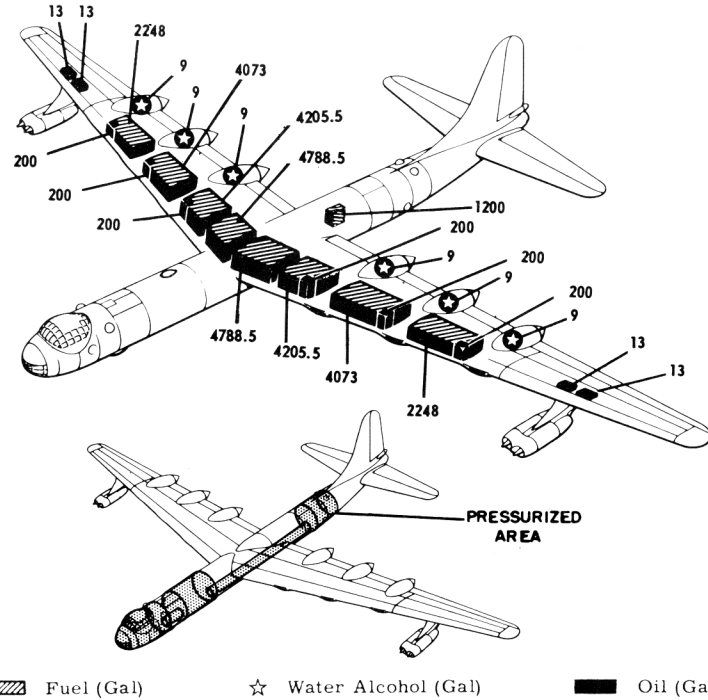
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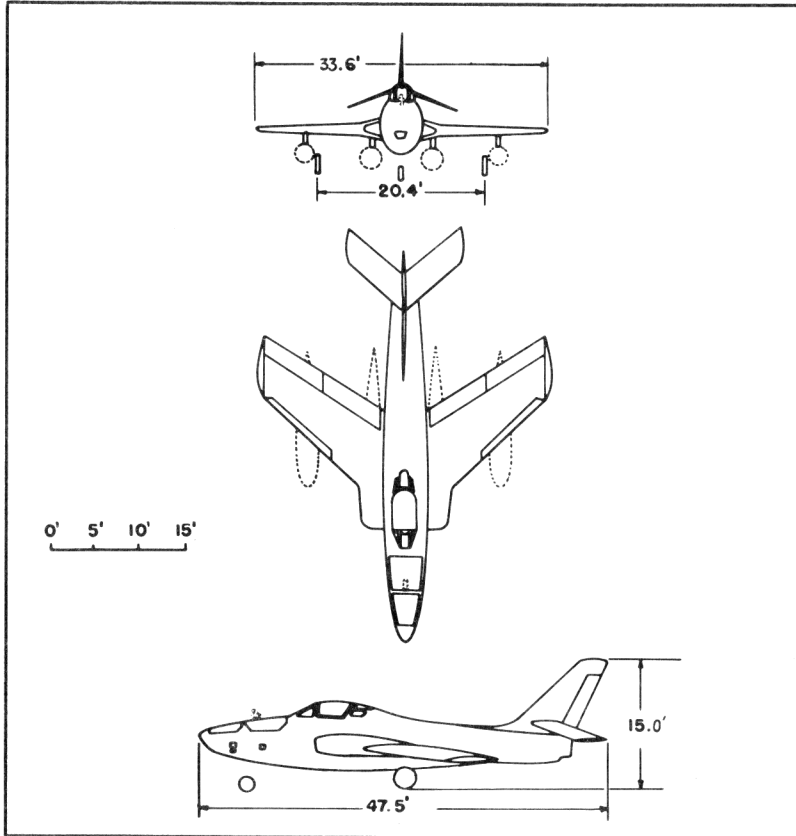
1 Dec 1955



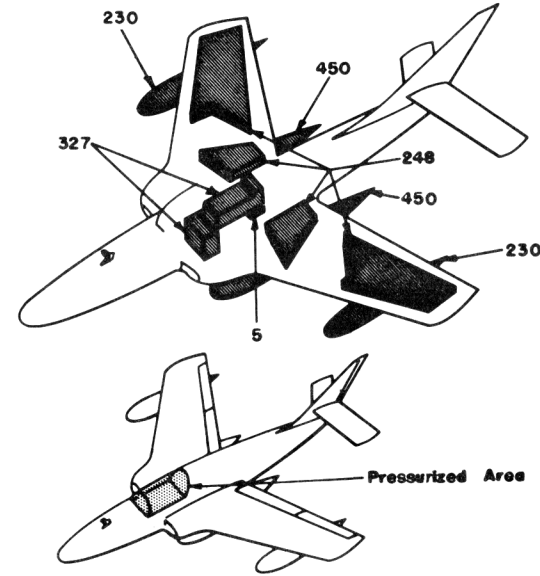
Wing Area . . . . . 4772 sq ft  
Aspect Ratio . . . . . 11.08  
M. A. C. . . . . 280.7 in.




Wing Section  
(root) . . . . . NACA 63, 4-422A  
(tip) . . . . . NACA 63, 4-517A  
A=1.0 (modified)

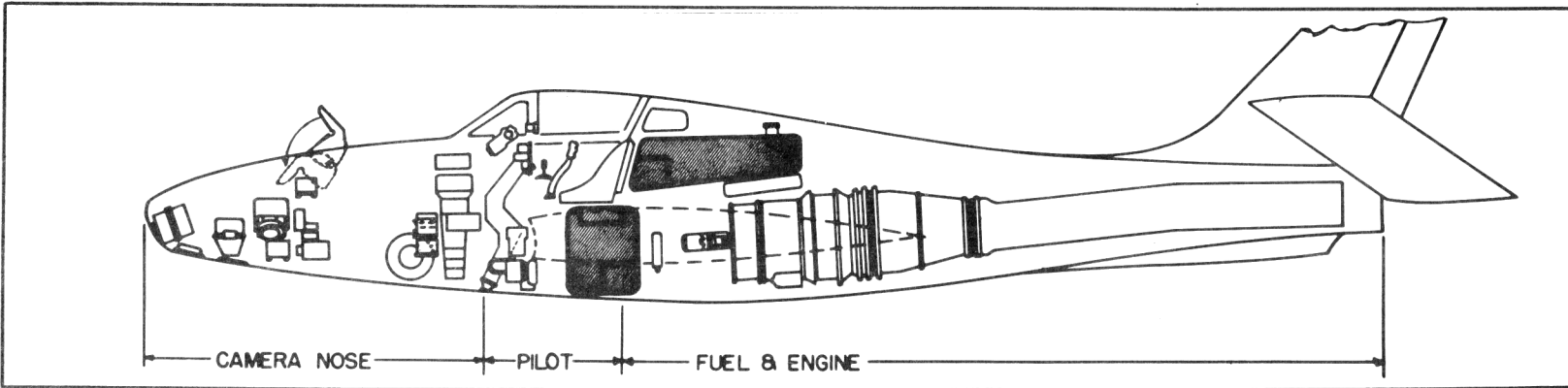




Wing Area . . . . .	325 sq ft	Wing Section . . .	NACA 64, A010
Aspect Ratio . . . . .	3.47	M. A. C. . . . . .	120.45"



 Fuel (Gal)     
  Water Alcohol (Gal)     
  Oil (Gal)



**POWER PLANT**

No. & Model . . . . . (6)R-4360-41  
 Mfr . . . . . Pratt & Whitney  
 Engine Spec No. . . . . A-7063-E  
 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  
 Prop. Type . . . . . CS, FF, Reverse  
 No. Blades . . . . . 3  
 Prop Dia\* . . . . . 19'-0"  
 Augmentation . . . . . Water/alcohol  
 plus  
 No. & Model . . . . . (4) J47-GE-19  
 Mfr . . . . . General Electric  
 Engine Spec No. . . . . E-589  
 Type . . . . . Axial  
 Length . . . . . 144"  
 Diameter . . . . . 39"  
 Weight (dry) . . . . . 2495 lb  
 Tail Pipe . . . . . Fixed Area

**ENGINE RATINGS**

BHP	-	RPM	-	ALT	-	MIN
T. O: *3500	-	2700	-	Turbo	-	5
3250	-	2700	-	Turbo	-	5
Mil: *3500	-	2700	-	Turbo	-	30
3250	-	2700	-	Turbo	-	30
Nor: 2650	-	2550	-	Turbo	-	Cont
* Wet						
	plus					
S. L. Static	LB	-	RPM	-	MIN	
Max:	5200	-	7950	-	5	
Mil:	5200	-	7950	-	30	
Nor:	4730	-	7630	-	Cont	

**DIMENSIONS**

Wing  
 Span . . . . . 230.0'  
 Incidence (root) . . . . . 3°  
 (tip) . . . . . 1°  
 Dihedral . . . . . 2°  
 Sweepback (LE) . . . . . 15°5'  
 Length . . . . . 162.1'  
 Height . . . . . 46.8'  
 Tread . . . . . 46.0'  
 Prop. Grd. Clearance . . . . . 54"

*Mission and Description*

Navy Equivalent: None Mfr's Model: 36

The principal mission of the GRB-36D (III)/RF-84F Composite System is to provide long range, high speed, low and high altitude day or night reconnaissance.

Alternate mission is long range, high speed bombing. The standard carrier is a conventional RB-36D (III) modified by addition of the mechanisms necessary for stowing, aerial servicing, releasing and retrieving RF-84F parasite, and inclusion of the APX-29 rendezvous equipment.

Ferret ECM equipment is removed from the bomb bay and relocated in a more aft position. Defensive armament and cameras remain unchanged.

Considerable versatility is afforded by this system in that carrier and parasite need not operate from the same base. Mid-air pick-up of the RF-84F while enroute to the target area may be performed as well as on-the-ground hook-up prior to take-off. There are provisions for retrieving operations during night missions.

*Development*

First Flight Prototype (Composite)	Jan 52
First Flight test (production) (Composite)	Aug 55
First Delivery (GRB-36D carrier)	Feb 55
(RF-84F parasite)	Jul 55

**B O M B S**

No provisions for carrying bombs.

Launch weight of the RF-84F parasite is 29,503 lb

**G U N S**

No.	Type	Size	Rds,ea	Loc
2..	M24A1..	20mm..	600	..Fus,tail

**C A M E R A S**

No.	Type	Lens
1..	K-22A, Fwd oblique	.. 12"
3..	K-17C; Tri metrogon	.. 6"
2..	K-38, Split Vertical	.. 24"
2..	K-22A, Side oblique	.. 24"
1..	K-17C, Vertical	.. 6"
5..	K-38, Multiple	.. 36"
5*..	K-40, Multiple	.. 48"
1*..	T-11, Vertical	.. 6"
1*..	K-37, Vertical	.. 12"
1*..	K-22A, Vertical	.. 6",12",24"

\* Alternate Provisions

**W E I G H T S**

Loading	Lb	L. F.
Empty . . . . .	166,207 (C)	
Basic . . . . .	168,009 (C)	
Design . . . . .	370,000 . . . . .	2.0
Max T. O.: . . . . .	*370,000 . . . . .	2.0
Max Land . . . . .	*357,500	

(C) Calculated  
 \* Limited 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
	Total	30,630
Grade . . . . .		115/145
Specification . . . . .		MIL-F-5572

**OIL**

Outboard (Jet)	(tot)	52
Wing (Recip)		1200
Grade . . . . .	(Recip)	1100
	(Jet)	1005
Specification (Recip)	MIL-L-6082A	
(Jet)	MIL-L-6081A	
	WATER/ALCOHOL	
Eng. Nacelle . . . . .	6 . . . . .	(tot) 54
* Partial Self-Sealing		

Note: Provisions for utilization of 1200 gal bomb bay tank for Aerial Servicing of RF-84F.

**ELECTRONICS**

VHF Command . . . . .	AN/ARC-3
UHF Command . . . . .	AN/ARC-27
Liaison . . . . .	AN/ARC-8
Interphone . . . . .	USAF Combat
Nav. Radar . . . . .	AN/APQ-24
Loran . . . . .	AN/APN-9
Glide Path . . . . .	AN/ARN-5B
Marker Beacon . . . . .	RC-193A
Radio Compass . . . . .	AN/ARN-6
Range Receiver . . . . .	BC-453
IFF . . . . .	AN/APX-6
Blind Approach . . . . .	RC-103D
Gun Laying Radar . . . . .	AN/APG-32
Rendezvous Equip. . . . .	AN/APX-29
Defensive & Ferret ECM	

**POWER PLANT**

No. & Model . . . . . (1) J65-B-3  
 . . . . . or (1) J65-W-3  
 Mfr . . . . . Buick or Wright  
 Engine Spec No. . . . . Bulletin 870K  
 Type . . . . . Axial  
 Length . . . . . 138.6"  
 Diameter . . . . . 37.5"  
 Weight (dry) . . . . . 2875 lb  
 Tail Pipe . . . . . Fixed Area  
 ATO  
 No. & Model . . . . . LR 63-AJ-1  
 Mfr . . . . . Aerojet  
 Engine Spec No. . . . . ATS-L4, 133  
 Fuel Type . . . . . JP-4  
 Oxidizer . . . . . WFNA  
 No. Cyl . . . . . 1  
 Fuel Feed . . . . . centrif, turbine pump

**ENGINE RATINGS**

S. L. Static	LB	RPM	MIN
Max:	7220*	8300	5
Mil:	7220	8300	30
Nor:	6350	8000	Cont
ATO			
Thrust (lb)			5000
Duration (sec)			35

**DIMENSIONS**

Wing  
 'Span . . . . . 33.6'  
 Incidence (root) . . . . . 1°30'  
 (tip) . . . . . 1°30'  
 Cathedral . . . . . 3°30'  
 Sweepback . . . . . 40°  
 Length . . . . . 47.5'  
 Height . . . . . 15.0'  
 Tread . . . . . 20.4'  
 Stowed Grd. Clearance . . . . . 6"  
 Horizontal Tail (cathedral) . . . . . 23°

*Mission and Description*

Navy Equivalent: None Mfr's Model: AP-23T

The principal mission of the RF-84F parasite is to fly into the target area alone after being launched from the GRB-36D (III) carrier and accomplish photo-reconnaissance. Alternate mission is high speed bombing.

The RF-84F parasite is a conventional RF-84F modified by the addition of a nose probe and latch mechanism, fuselage latches, and redesigned stabilizer surfaces incorporating a 23 degree cathedral and a 13 percent increase in area.

After mission is accomplished the parasite is retrieved by the carrier and may be transported back to base or released for separate base.

*Development*

For information on development of the GRB-36D (III)/RF-84F System see preceding page 4.

**WEIGHTS**

Loading	Lb	L. F.
Empty	14,462 (C)	
Basic	14,863 (C)	
Design	19,000	9.33
Combat	*22,790	
Launch	**29,503	

(C) Calculated  
 \* For Basic High Altitude Reconnaissance Mission  
 \*\* Limited by mission

**F U E L**

Location	No. Tanks	Gal
Wgs*	2	248
Fus*	2	327
Wg, drop, inbd	2	900
Wg, drop, outbd.	2	460
		Total †1935
Grade	JP-4	
Specification	MIL-F-5624A	

**OIL**

Fuselage	1	(tot) 5
Grade	1010	
Specification	MIL-L-6081A	
*Self-Sealing		

†Total fuel capability is possible only when aerial serviced prior to release

**B O M B S**

No.	Class(lb)
1	Special Store
40	M-123 Photo Flash Cart

**G U N S**

No.	Type	Size	Rds,ea	Loc
4	M-3	.50 cal.	*100	Wings

\* Space provisions for 200 rds/gun

**C A M E R A S**

No.	Type	Lens
For day missions		
2	K-38, Split Vertical	36"
2	K-17C, Tri-metrogon	6" or 12"
1	K-22, Fwd oblique	24"

For night missions

3	K46, Tri-metrogon	.6" or 12"
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**ELECTRONICS**

UHF Command . . . . . AN/ARC-33  
 Radio Compass . . . . . AN/ARN-6  
 IFF . . . . . AN/APX-6  
 Interphone . . . . . AN/AIC-10  
 Grd Position Indicator . . . . . ASN-6  
 Toss Bomb Computer . . . . . M-1  
 LABS . . . . . MA-1  
 Wire Recorder . . . . . ANH-2

Provisions for AN/APN-76A

# Loading and Performance - Typical Mission

C O N D I T I O N S HIGH ALTITUDE RECONNAISSANCE MISSIONS		BASIC		HIGH SPEED		FERRY RANGE
		COMPOSITE	PARASITE	COMPOSITE	PARASITE	COMPOSITE
		I	II	III	IV	V
TAKE-OFF WEIGHT	(lb)	370,000	—	370,000	—	370,000
Fuel at 6.0/6.5 lb/gal (grade 115/145/JP-4)	(lb)	164,948	12,435	164,948	12,435	176,932
Payload (Parasite)	(lb)	29,503	—	29,503	—	17,068
Payload (Cameras)	(lb)	—	518	—	518	518
Wing loading	(lb/sq ft)	77.5	90.8	77.5	90.8	77.5
Stall speed (power off)	(kn)	107	—	107	—	107
Take-off ground run at SL	(ft)	4430	—	4430	—	4430
Take-off to clear 50 ft	(ft)	5735	—	5735	—	5735
Rate of climb at SL	(fpm)	910	—	910	—	910
Rate of climb at SL (one engine out)	(fpm)	965	—	965	—	965
Time: SL to 10,000 ft	(min)	12	—	12	—	12
Time: SL to 20,000 ft	(min)	28	—	28	—	28
Service ceiling (100 fpm)	(ft)	31,500	—	31,500	—	31,500
Service ceiling (one engine out)	(ft)	29,000	—	29,000	—	29,000
LAUNCH WEIGHT	(lb)	—	29,503	—	29,503	—
Service ceiling (100 fpm)	(ft)	—	26,400	—	26,400	—
COMBAT RANGE	(n. mi)	—	—	—	—	6450
COMBAT RADIUS	(n. mi)	3465	—	1780	—	—
Individual radii	(n. mi)	2440	1025	1060	720	—
Average cruise speed	(kn)	173	474	320	513	169
Initial cruising altitude	(ft)	5000	25,000	31,700	25,000	5000
Launch-retrieve altitude	(ft)	25,000	25,000	25,000	25,000	—
Target speed	(kn)	—	494	—	517	—
Target altitude	(ft)	—	35,000	—	25,000	—
Final cruising altitude	(ft)	24,200	44,500	39,500	25,000	24,100
Individual endurance	(hr)	33.0	4.4	10.2	2.8	—
Total mission time	(hr)	33.0	—	10.2	—	38.2
COMBAT WEIGHT	(lb)	—	22,470	—	23,510	202,959
Combat altitude	(ft)	—	35,000	—	25,000	24,100
Combat speed	(kn)	—	516	—	540	331
Combat climb	(fpm)	—	850	—	1680	1960
Combat ceiling (500 fpm)	(ft)	—	37,100	—	36,000	44,200
Service ceiling (100 fpm)	(ft)	—	36,700	—	35,500	47,000
Max rate of climb at SL	(fpm)	—	4700	—	4350	2840
Max speed at optimum alt	(kn/ft)	—	565/S. L.	—	565/S. L.	360/38,700
Basic speed at 35,000 ft	(kn)	—	516	—	512	357
RETRIEVE WEIGHT	(lb)	—	17,460	—	17,460	—
LANDING WEIGHT	(lb)	202,297	—	202,297	—	202,959
Ground roll at SL	(ft)	1970	—	1970	—	1975
Ground roll (auxiliary brake)	(ft)	1720	—	1720	—	1725
Total from 50 ft	(ft)	3420	—	3420	—	3425
Total from 50 ft (auxiliary brake)	(ft)	3170	—	3170	—	3175

NOTES

- ① Take-off power
- ② Max power
- ③ Normal power
- ④ Detailed descriptions of RADIUS and RANGE missions given on page 10 & 11.

⑤ Props reversed.

**PERFORMANCE BASIS:**

- (a) Data source: Calculated data based on USAF Phase IV flight tests of B-36D and B-36F & H III aircraft plus preliminary drag estimates.
- (b) Performance is based on powers shown on page 11.

## ~~SECRET~~ SUPPLEMENTAL *Loading and Performance - Typical Mission*

C O N D I T I O N S			BASIC		HIGH SPEED		FERRY RANGE
LOW ALTITUDE RECONNAISSANCE MISSIONS			COMPOSITE	PARASITE	COMPOSITE	PARASITE	COMPOSITE
			VI	VII	VIII	IX	X
TAKE-OFF WEIGHT	(lb)		370,000	—	370,000	—	370,000
Fuel at 6.0/6.5 lb/gal (grade 115/145/JP-4)	(lb)		164,948	12,435	164,948	12,435	176,932
Payload (Parasite)	(lb)		29,503	—	29,503	—	17,068
Payload (Cameras)	(lb)		—	518	—	518	518
Wing loading	(lb/sq ft)		77.5	90.8	77.5	90.8	77.5
Stall speed (power off)	(kn)		107	—	107	—	107
Take-off ground run at SL	(ft)	①	4430	—	4430	—	4430
Take-off to clear 50 ft	(ft)	①	5735	—	5735	—	5735
Rate of climb at SL	(fpm)	③	910	—	910	—	910
Rate of climb at SL (one engine out)	(fpm)	②	965	—	965	—	965
Time: SL to 10,000 ft	(min)	③	12	—	12	—	12
Time: SL to 20,000 ft	(min)	③	28	—	28	—	28
Service ceiling (100 fpm)	(ft)	③	31,500	—	31,500	—	31,500
Service ceiling (one engine out)	(ft)	②	29,000	—	29,000	—	29,000
LAUNCH WEIGHT	(lb)		—	—	—	—	—
Service ceiling (100 fpm)	(ft)	③	—	29,503	—	29,503	—
COMBAT RANGE	(n. mi)	④	—	—	—	—	6450
COMBAT RADIUS	(n. mi)	④	—	3385	—	1725	—
Individual radii	(n. mi)	④	2485	900	1070	655	—
Average cruise speed	(kn)		172	474	322	515	169
Initial cruising altitude	(ft)		5000	25,000	31,700	25,000	5000
Launch-retrieve altitude	(ft)		25,000	25,000	25,000	25,000	—
Target speed	(kn)	③	—	517	—	516	—
Target altitude	(ft)		—	S. L.	—	S. L.	—
Final cruising altitude	(ft)		24,200	44,500	39,500	25,000	24,100
Individual endurance	(hr)		32.9	3.8	9.9	2.60	—
Total mission time	(hr)		—	32.9	—	9.9	38.2
COMBAT WEIGHT	(lb)		—	22,790	—	23,710	202,959
Combat altitude	(ft)		—	S. L.	—	S. L.	24,100
Combat speed	(kn)	②	—	565	—	565	331
Combat climb	(fpm)	②	—	4600	—	4300	1960
Combat ceiling (500 fpm)	(ft)	②	—	36,600	—	36,000	44,200
Service ceiling (100 fpm)	(ft)	③	—	36,300	—	35,200	47,000
Max rate of climb at SL	(fpm)	②	—	4600	—	4300	2840
Max speed at optimum alt	(kn/ft)	②	—	565/S. L.	—	565/S. L.	360/38,700
Basic speed at 35,000 ft	(kn)	②	—	514	—	513	357
RETRIEVE WEIGHT	(lb)		—	17,460	—	17,460	—
LANDING WEIGHT	(lb)		202,297	—	202,297	—	202,959
Ground roll at SL	(ft)		1970	—	1970	—	1975
Ground roll (auxiliary brake)	(ft)	⑤	1720	—	1720	—	1725
Total from 50 ft	(ft)		3420	—	3420	—	3425
Total from 50 ft (auxiliary brake)	(ft)	⑤	3170	—	3170	—	3175

**NOTES**

- ① Take-off power
- ② Max power
- ③ Normal power

- ④ Detailed descriptions of RADIUS and RANGE missions given on page 10 & 11.
- ⑤ Props reversed

**PERFORMANCE BASIS:**

- (a) Data source: Calculated data based on USAF PHASE IV flight tests of B-36D and B-36F & H III aircraft plus preliminary drag estimates.
- (b) Performance is based on powers shown on page 11.

# SUPPLEMENTAL *Loading and Performance - Typical Mission*

C O N D I T I O N S B O M B E R M I S S I O N S	B A S I C		H I G H S P E E D		F E R R Y R A N G E
	C O M P O S I T E	P A R A S I T E	C O M P O S I T E	P A R A S I T E	C O M P O S I T E
	X I	X I I	X I I I	X I V	X V
TAKE-OFF WEIGHT (lb)	370,000	---	370,000	---	370,000
Fuel at 6.0/6.5 lb/gal (grade 115/145 JP-4) (lb)	164,877	9510	164,877	9510	177,511
Payload (Parasite - Bomb) (lb)	29,574	3575	29,574	3575	16,489
Payload (Cameras) (lb)	---	---	---	---	---
Wing loading (lb/sq ft)	77.5	91.0	77.5	91.0	77.5
Stall speed (power off) (kn)	107	---	107	---	107
Take-off ground run at SL ① (ft)	4430	---	4430	---	4430
Take-off to clear 50 ft ① (ft)	5735	---	5735	---	5735
Rate of climb at SL ③ (fpm)	910	---	910	---	910
Rate of climb at SL (one engine out) ② (fpm)	965	---	965	---	965
Time: SL to 10,000 ft ③ (min)	12	---	12	---	12
Time: SL to 20,000 ft ③ (min)	28	---	28	---	28
Service ceiling (100 fpm) ③ (ft)	31,500	---	31,500	---	31,500
Service ceiling (one engine out) ② (ft)	29,000	---	29,000	---	29,000
LAUNCH WEIGHT (lb)	---	29,574	---	29,574	---
Service ceiling (100 fpm) ③ (ft)	---	26,400	---	26,400	---
COMBAT RANGE ④ (n. mi)	---	---	---	---	6476
COMBAT RADIUS ④ (n. mi)	---	3305	---	1599	---
Individual radii ④ (n. mi)	2605	700	1095	495	---
Average cruise speed (kn)	172	480	321	518	169
Initial cruising altitude (ft)	5000	25,000	31,700	25,000	5000
Launch-retrieve altitude (ft)	25,000	25,000	25,000	25,000	---
Target speed ③ (kn)	---	516	---	513	---
Target altitude (ft)	---	S. L.	---	S. L.	---
Final cruising altitude (ft)	24,300	44,900	39,500	25,000	24,100
Individual endurance (hr)	33.4	2.9	9.5	2.0	---
Total mission time (hr)	---	33.4	---	9.5	38.3
COMBAT WEIGHT (lb)	---	20,535	---	21,415	202,405
Combat altitude (ft)	---	S. L.	---	S. L.	24,100
Combat speed ② (kn)	---	582	---	582	331
Combat climb ② (fpm)	---	5500	---	5200	1960
Combat ceiling (500 fpm) ② (ft)	---	40,750	---	39,800	44,300
Service ceiling (100 fpm) ③ (ft)	---	40,300	---	39,400	47,100
Max rate of climb at SL ② (fpm)	---	5500	---	5200	2845
Max speed at optimum altitude ② (kn/ft)	---	582/S. L.	---	582/S. L.	360/38,700
Basic speed at 35,000 ft ② (kn)	---	528	---	527	357
RETRIEVE WEIGHT (lb)	---	16,738	---	16,738	---
LANDING WEIGHT (lb)	201,570	---	201,570	---	202,405
Ground roll at SL (ft)	1960	---	1960	---	1970
Ground roll (auxiliary brake) ⑤ (ft)	1715	---	1715	---	1720
Total from 50 ft (ft)	3410	---	3410	---	3420
Total from 50 ft (auxiliary brake) ⑤ (ft)	3160	---	3160	---	3170

N O T E S

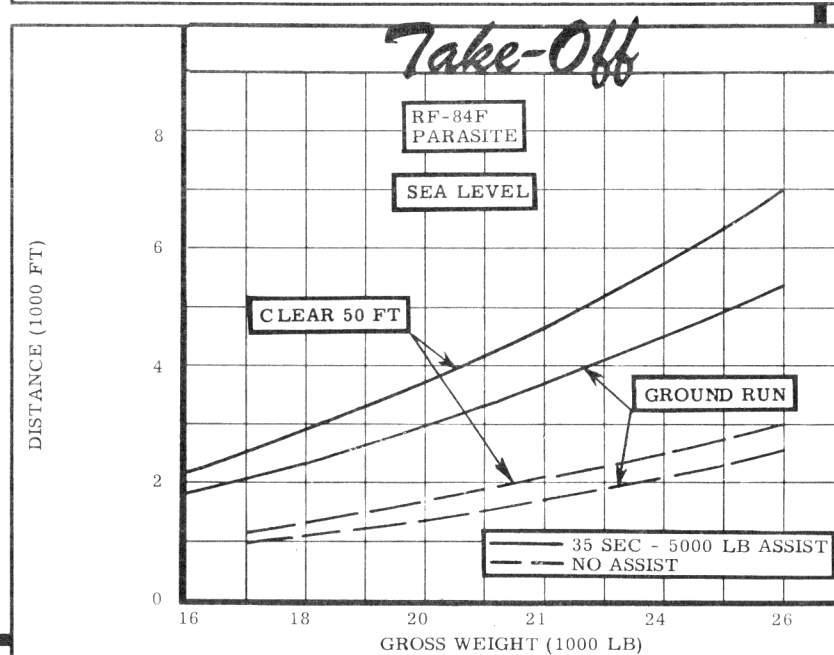
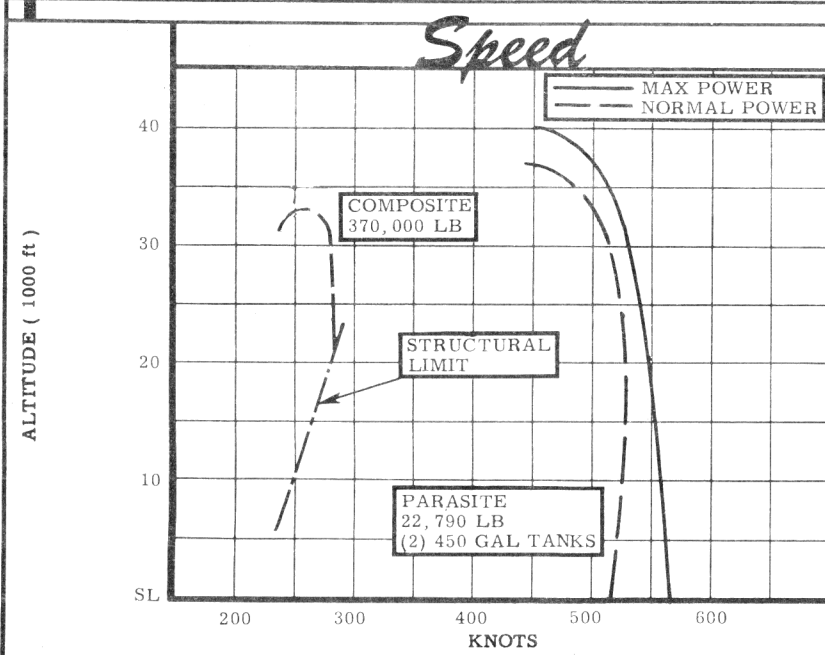
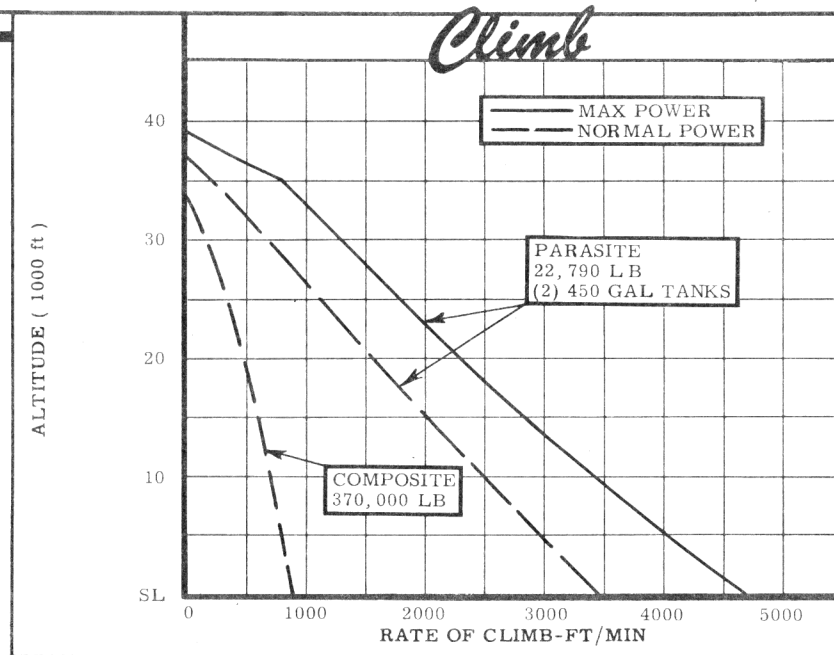
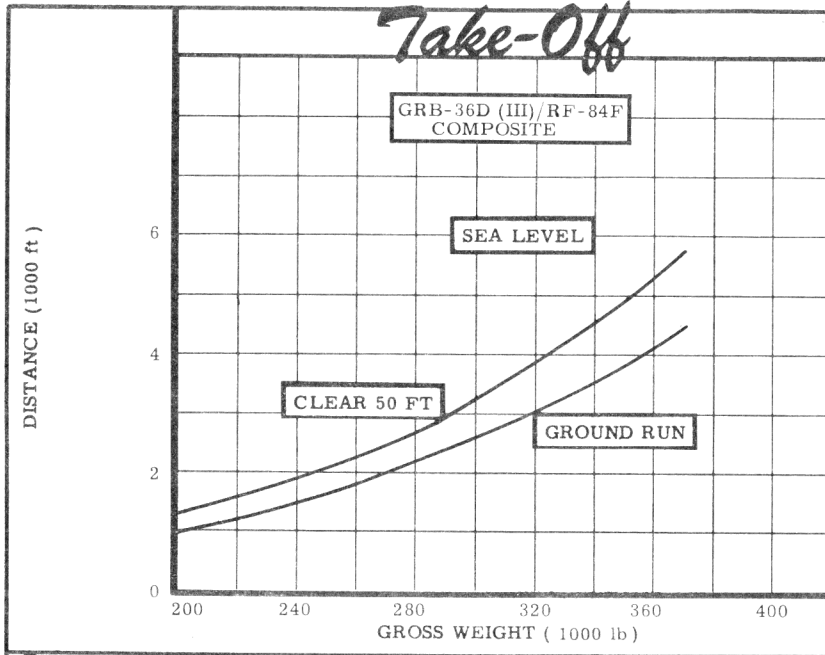
- ① Take-off power
- ② Max power
- ③ Normal power

- ④ Detailed descriptions of RADIUS and RANGE missions given on page 10 & 11.
- ⑤ Props reversed

**PERFORMANCE BASIS:**

- (a) Data source: Calculated data based on USAF PHASE IV flight tests of B-36D and B-36F & H III aircraft plus preliminary drag estimates.
- (b) Performance is based on powers shown on page 11.





**NOTES**FORMULA: RADIUS MISSIONS I, VI & XI

Warm-up, take-off, and climb on course at normal rated power to 5000 feet. Cruise at long range speeds and altitudes to a point where climb is made to 25,000 feet. Following one minute for warm-up of parasite turbojet engine, launch parasite, loiter at 25,000 feet in area of launch, cruising at long range speeds during parasite mission plus 15 minutes for rendezvous and retrieve of parasite. Descend to optimum altitude for long range cruise and return to base. Range free allowances include 10 minutes of normal power fuel consumption for reciprocating engines plus 5 minutes of normal power jet engine fuel consumption for warm-up and take-off, loiter time at power for long range cruise at 25,000 feet for reciprocating engines only, 30 minutes of 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 MISSIONS II (PARASITE)

One minute maximum power warm-up and immediate launch at 25,000 feet, cruise at long range speeds and altitudes to a point 50 nautical miles from target. Cruise at this altitude (combat altitude) 50 nautical miles to target, conduct 2 minutes evasive action and cruise out 50 nautical miles at normal power. Climb at maximum power to optimum altitude long range flight path and cruise at long range speeds to rendezvous point and descend to 25,000 feet to be retrieved. Range free allowances include one minute maximum power warm-up immediately prior to launch, 2 minutes at normal power for evasive action, and a reserve of 30 minutes cruise at sea level for rendezvous, retrieve and reserve plus 5% of initial fuel reserve.

FORMULA: RADIUS MISSIONS VII (PARASITE)

One minute maximum power warm-up and immediate launch at 25,000 feet, cruise at long range speeds and altitudes to a point 50 nautical miles from target. Descend to sea level, conduct 50 nautical mile run-in to target, 2 minutes of evasive action over target and 50 nautical miles run out at normal power. Climb at maximum power to optimum altitude long range flight path and cruise at long range speeds to rendezvous point and descend to 25,000 feet to be retrieved. Range free allowances include one minute maximum power warm-up immediately prior to launch, 2 minutes at normal power for evasive action, and a reserve of 30 minutes cruise at sea level for rendezvous, retrieve and reserve plus 5% of initial fuel reserve.

FORMULA: RADIUS MISSIONS XII (PARASITE)

One minute maximum power warm-up and immediate launch at 25,000 feet, climb on course to optimum altitude for cruise at long range speeds. Cruise to within 50 nautical miles of target and descend to sea level. Cruise at normal power 50 nautical miles to target, drop bomb, conduct 2 minutes of evasive action over target and 50 nautical miles run out at normal power. Climb at maximum power to optimum altitude long range flight path and cruise at long range speeds to rendezvous point and descend to 25,000 feet to be retrieved. Range free allowances include one minute maximum power warm-up immediately prior to launch, 2 minutes at normal power for evasive action, and a reserve of 20 minutes cruise at sea level for rendezvous, retrieve and reserve plus 5% of initial fuel reserve.

FORMULA: RADIUS MISSIONS III, VIII & XIII (CARRIER)

This entire mission with the exception of loiter, is flown at normal rated power. Warm-up, take-off and climb on course to optimum altitude for high speed; cruise at these altitudes to a point where descent is made to 25,000 feet. Following one minute for warm-up of parasite turbojet engine, launch parasite, loiter at 25,000 feet in area of launch, cruising at long range speeds during parasite mission plus 15 minutes for rendezvous and retrieve of parasite. Climb to optimum altitude for high speed cruise and cruise back to base. Range free allowances are the same as for Radius Mission I.

FORMULA: RADIUS MISSION IV (PARASITE)

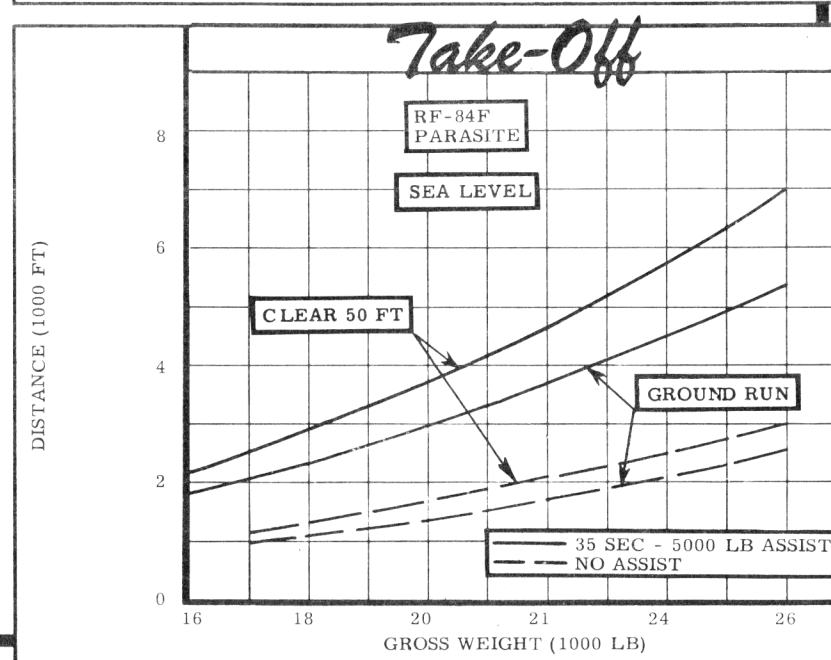
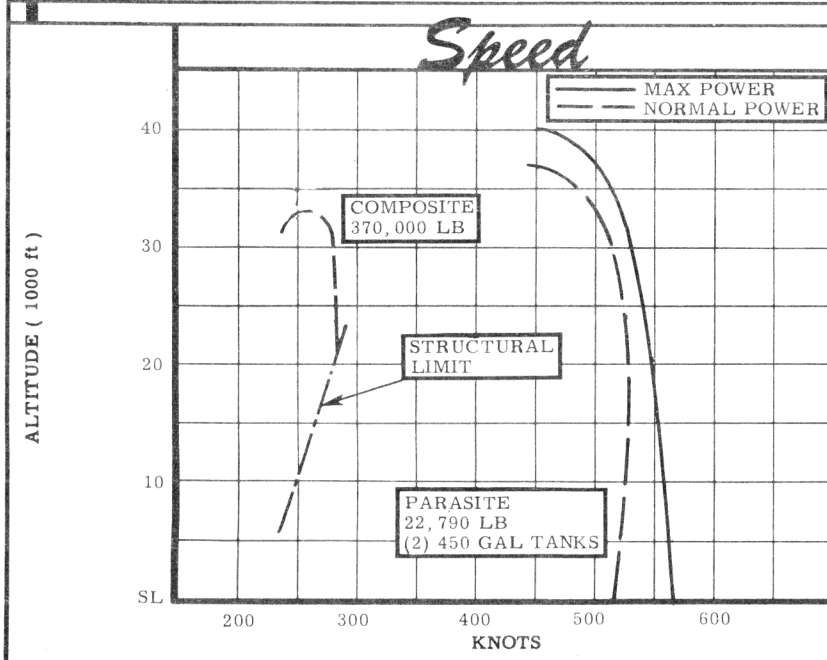
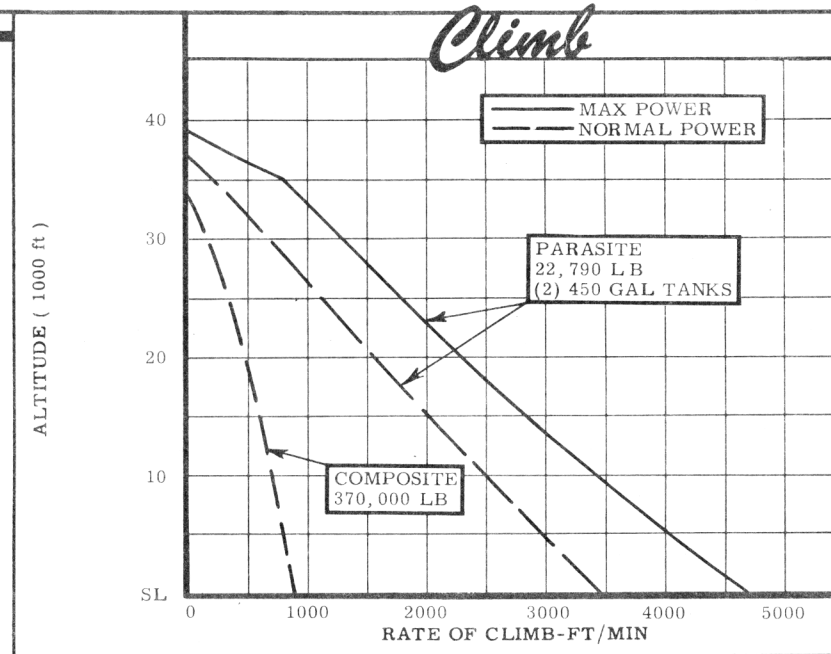
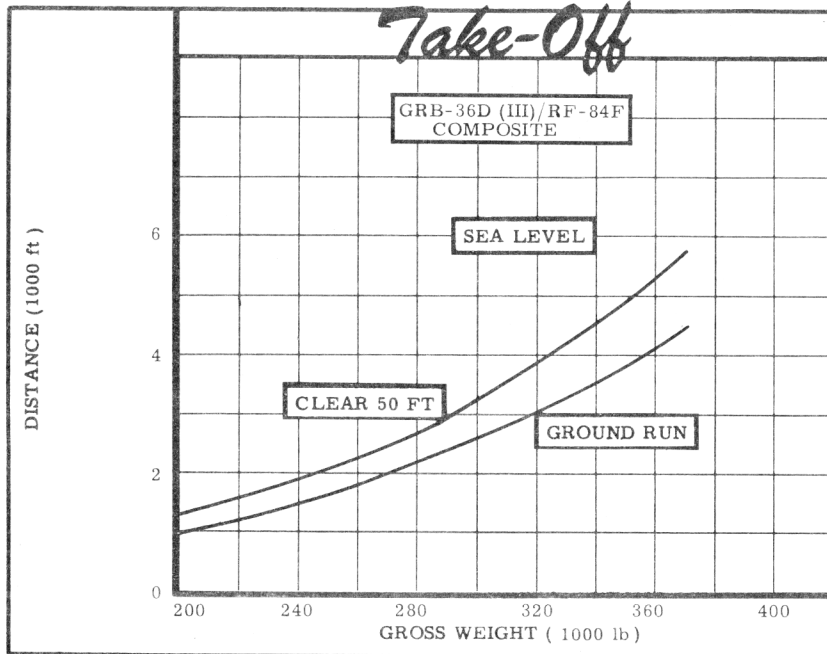
One minute maximum power warm-up and immediate launch at 25,000 feet, cruise at normal power at optimum altitude (25,000 feet) for high speed to target. Conduct 2 minutes evasive action, cruise to rendezvous at normal power to be retrieved. Range free allowances are the same as for Radius Mission II.

FORMULA: RADIUS MISSION IX (PARASITE)

One minute maximum power warm-up and immediate launch at 25,000 feet, cruise at normal power at optimum altitude (25,000 feet) for high speed to within 50 nautical miles of target and descend to sea level. Cruise at sea level to target, conduct 2 minutes evasive action and 50 nautical miles run out, all at normal power. Climb at maximum power to optimum altitude for high speed cruise and cruise at normal power to rendezvous point and retrieve. Range free allowances are the same as for Radius Mission II.

FORMULA: RADIUS MISSION XIV (PARASITE)

One minute maximum power warm-up and immediate launch at 25,000 feet, cruise at normal power at optimum altitude (25,000 feet) for high speed to within 50 nautical miles of target and descend to sea level. Cruise at sea level to target, drop bomb, conduct 2 minutes evasive action and 50 nautical miles run out, all at normal power. Climb at maximum power to optimum altitude for high speed cruise and cruise at normal power to rendezvous point and retrieve. Range free allowances are the same as for Radius Mission XVI.



### NOTES

FORMULA: RANGE MISSIONS V, X & XV (COMPOSITE)

Warm-up, take-off and climb on course to 5000 feet at normal power. Cruise at optimum altitude for long range cruise until all usable fuel is consumed. Range free allowances are the same as for Radius Mission I except for omission of loiter time.

GENERAL DATA:

(a) Take-off at 370,000 lb gross weight is not authorized until the airplane is released for operation at this gross weight after completion of landing gear modification.

(b) Carrier engine rating shown on page 3 are manufacturer's guaranteed ratings. Power values used for performance calculations are as follows:

(6) R-4360-41				(4) J47-GE-19			
BHP	RPM	**ALT	MIN	S. L. Static	LB	RPM	MIN
T. O:	*3500	- 2700	- S. L. - 5	T. O:	5200	- 7950	- 5
Max:	3250	- 2700	- 34,100- 30	Max:	5200	- 7950	- 30
Nor:	2650	- 2550	- 39,400- Cont	Nor:	4730	- 7630	- Cont
*Wet							
**Turbosupercharger limitation							

(c) Parasite engine ratings shown on page 5 are manufacturer's guaranteed ratings. Power values used for performance calculations are as follows:

(1) J-65-W-3				
S. L. Static	LB	RPM	MIN	
T. O:	7220	8300	5	
Max:	6400	8300	30	
Nor:	5900	8000	Cont	

PERFORMANCE REFERENCE:

CONVAIR REPORT FZA-36-308-1, dated 1 July 1955

REVISION BASIS: To reflect configuration (III) data

1 JAN 54

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