Republic F-84 Thunderjet

The Republic F-84 Thunderjet is an early escort fighter, fighter-bomber, and tactical nuclear bomber. It has unswept wings, a single jet engine, and an air intake in the nose.

The aircraft was designated P-48 during its development. The P-84B entered service in 1947; there was no P-84A version, as the XP-84A was a prototype and the YP-84A a service test version. It was armed with six .50 cal M3 machine guns, with four guns were installed in the nose and one in each wing root. It was equipped with an Allison J35-A-15 engine and, to improve its range, wing-tip fuel tanks with a capacity of 226 gal each. In 1948, the P-48 was redesignated as the F-84.

The F-84C followed shortly after the F-84B, and was almost identical. The main change being the use of the J35-A-13C engine, which had better reliability than the engine in the F-84B, but otherwise had almost identical performance. Both of these models suffered from structural damage to the fuselage skin, which lead to performance limitations, and structural failures in the wings, caused at least in part by the fuel tanks applying unexpected twisting loads to the wings during high-g maneuvers.

The first satisfactory version was the F-84D, which entered service in 1949. It had strengthened wings, triangular fins on the wing-tip tanks to mitigate twisting, and a more powerful J35-A-17D engine.

The F-84E entered service in 1950 and represented a further improvement on the F-84D. It has lengthened fuselage, further strengthened wings, added an A-1B gun sight with an APG-30 range-finding radar, and had provision for 230 gal fuel tanks on the under-wing stations. It kept the same engine as the F-84D. The F-84E could be equipped with air-to-air refueling probes on each wing-tip fuel tank, and these were used in combat in Korea to permit long-range missions to be flown from Japan.

The final F-84G version was intended to bridge the gap before the introduction of the swept-wing F-84F. It was equipped with an air-to-air refueling receptacle in its left wing (in addition to possible use of air-to-air refueling probes in the wing-tip fuel tanks, like the F-84E), a new framed canopy as the single-piece canopy of the F-84E was subject to failure, and could carry a Mk 7 nuclear bomb. The new canopy was subsequently refitted to previous versions.

In the Korean War, when the MiG-15 entered combat on 1 November 1950, the best fighter the USAF had in the theater was the straight-wing F-80C, and it was unable to match the swept-wing MiG. The response of the USAF, in retrospect, was curious; it sent a wing of quite similar F-84Es. Starting in December 1950, these begin to escort daylight B-29 raids. It was found to be rugged and a stable gun platform, but like the F-80C was easily outmaneuvered by the faster MiG-15. The role of countering the MiG was given to the F-86, and the F-84 subsequently was used as a fighter-bomber and, towards the end of the war, night intruder. Starting in 1951, many F-80C units in Korea converted to the F-84.

In addition to the USAF, the F-84E was used by the air forces of Belgium, France, Netherlands, and Norway. The F-84G was used by these and also by the air forces of Denmark, Greece, Iran, Italy, Portugal, Republic of China, Thailand, Turkey, and Yugoslavia. Taiwanese F-84s engaged in air combat with PRC MiG-15 and MiG-17s during the Second Taiwan Straight Crisis in 1958. Portuguese F-84s saw combat in the Angolan War of Independence from 1961 as fighter-bombers.

ADCs are provided for:

- F-84E
- F-84G

F-84E Thunderjet

Crew: Pilot

Power APs/DPs: ○

	CL	1/2	DT	Fuel
AB	—	—	—	—
M	1.0	0.5	0.5	1.0
N	0.0	0.0	0.0	0.5
I	1.0	1.0	1.0	0.0
SPBR	1.0	1.0	2.0	—

Smoker in military power (SMP).

Cruise Spd. CL:	4.5	Restr. Arcs:	60–
Climb Spd.:	3.5	Blind Arcs:	30–
Visibility:	5	Internal Fuel:	150
Size:	+0	AtA Refuel:	No
Vulnerability:	+0	Ejection Seat:	Early

Maneuver DPs:

LR/DR	2.0
VR	1.0

Turn DPs:

	CL	1/2	DT
TT	0.5	1.0	1.0
HT	1.0	1.5	1.5
BT	1.5	1.5	1.5
ET	—	—	—

Speeds and Ceilings

Alt. Band	Conf. Ceil.	CL 41	1/2 36	DT 30	Dive Speed
EH+	46+	—	—	—	—
VH	36–45	2.5 – 5.0	2.5 – 5.0	—	6.0
HI	26–35	2.0 – 5.5	2.5 – 5.5	—	6.5
MH	17–25	2.0 – 5.5	2.0 – 5.5	2.5 – 5.0	6.5
ML	8–16	1.5 – 6.0	2.0 – 5.5	2.0 – 5.0	7.0
LO	0–7	1.5 – 6.0	1.5 – 5.5	2.0 – 5.5	7.0

Climb Capabilities

Alt. Band	CL AB	CL Oth	1/2 AB	1/2 Oth	DT AB	DT Oth	Alt. Band
EH+	—	—	—	—	—	—	EH+
VH	—	0.5	—	0.5	—	—	VH
HI	—	0.5	—	0.5	—	0.5	HI
MH	—	1.0	—	0.5	—	0.5	MH
ML	—	1.0	—	1.0	—	0.5	ML
LO	—	1.5	—	1.0	—	0.5	LO

Radar:	APG-30	**ECM:**	IFF
ECCM:	—	RWR:	—
Arcs:	—	DDS:	—
Search:	—	DJM:	—
Track:	—	AJM:	—
Lock-On:	6	BJM:	—

Weapon Stations Diagram:

Guns:	Six .50 cal M3
To Hit:	6/3/0
Ammunition:	8.0
Gunsight:	TT+0/HT+1/BT+2
Ranging:	RE
AtA/AtG:	4/4**
Bomb System:	Manual

Technology:

None

Load Point Limits: CL : < 5
1/2: <13
DT : ≥13

Weight Limit: 6,120

Station	Limit	Allowed Loads
1 and 8	1,500	FT RK
2–3 and 6–7	420	RK
4 and 5	1,500	BB FT RK

Load Notes:

1. Stations 1 and 8 normally carry 230 gal (850L) wing-tip FTs. They can instead each carry four or six HVAR RKs.
2. Stations 4 and 5 can each carry one 230 gal (850L) FT, one 1000 lb M65 BB, one 500 lb M64 BB, one 250 lb M57 BB, one 100 lb M30 BB, or four HVAR RKs.
3. Stations 2, 3, 6, and 7 can each carry one, two, or three HVAR RKs.

Notes:

1. The Republic F-84E Thunderjet is a day fighter-bomber.
2. High transonic drag (HTD).

VPs: 8/5/3/1

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F-84G Thunderjet

Crew: Pilot

Power APs/DPs: ○

	CL	1/2	DT	Fuel
AB	—	—	—	—
M	1.0	1.0	1.0	1.0
N	0.0	0.0	0.0	0.5
I	1.0	1.0	1.0	0.0
SPBR	1.0	1.0	2.0	—

Smoker in military power (SMP).

Cruise Spd. CL:	4.5	Restr. Arcs:	60–
Climb Spd.:	3.5	Blind Arcs:	30–
Visibility:	5	Internal Fuel:	150
Size:	+0	AtA Refuel:	Yes
Vulnerability:	+0	Ejection Seat:	Early

Maneuver DPs:

LR/DR	2.0
VR	1.0

Turn DPs:

	CL	1/2	DT
TT	0.5	1.0	1.0
HT	1.0	1.5	1.5
BT	1.5	1.5	1.5
ET	—	—	—

Speeds and Ceilings

Alt. Band	Conf. Ceil.	CL 41	1/2 36	DT 30	Dive Speed
EH+	46+	—	—	—	—
VH	36–45	2.5 – 5.0	2.5 – 5.0	—	6.0
HI	26–35	2.0 – 5.5	2.5 – 5.5	—	6.5
MH	17–25	2.0 – 5.5	2.0 – 5.5	2.5 – 5.0	6.5
ML	8–16	1.5 – 6.0	2.0 – 5.5	2.0 – 5.0	7.0
LO	0–7	1.5 – 6.0	1.5 – 5.5	2.0 – 5.5	7.0

Climb Capabilities

Alt. Band	CL AB	CL Oth	1/2 AB	1/2 Oth	DT AB	DT Oth	Alt. Band
EH+	—	—	—	—	—	—	EH+
VH	—	0.5	—	0.5	—	—	VH
HI	—	0.5	—	0.5	—	0.5	HI
MH	—	1.0	—	1.0	—	0.5	MH
ML	—	1.5	—	1.5	—	1.0	ML
LO	—	1.5	—	1.5	—	1.0	LO

Radar:	APG-30
ECCM:	—
Arcs:	—
Search:	—
Track:	—
Lock-On:	6

ECM:	IFF
RWR:	—
DDS:	—
DJM:	—
AJM:	—
BJM:	—

Weapon Stations Diagram:

Guns:	Six .50 cal M3
To Hit:	6/3/0
Ammunition:	8.0
Gunsight:	TT+0/HT+1/BT+2
Ranging:	RE
AtA/AtG:	4/4**

Bomb System: Manual

Technology:

None

Load Point Limits: CL : < 5; 1/2: <13; DT : ≥13

Weight Limit: 6,200

Station	Limit	Allowed Loads
1 and 8	1,500	FT RK
2–3 and 6–7	420	RK
4 and 5	1,700	BB FT RK

Load Notes:

1. Stations 1 and 8 normally carry 230 gal (850L) wing-tip FTs. They can instead each carry four or six HVAR RKs.
2. Stations 4 and 5 can each carry one 230 gal (850L) FT, one 1000 lb M65 BB, one 500 lb M64 BB, one 250 lb M57 BB, one 100 lb M30 BB, or four HVAR RKs.
3. Stations 2, 3, 6, and 7 can each carry one, two, or three HVAR RKs.
4. A single Mk 7 (weight 1700 and load 3.5) nuclear bomb can also be carried on either station 4 or 5.

Notes:

1. The Republic F-84G Thunderjet is a fighter-bomber and tactical nuclear strike aircraft. It is a development of the F-84E and has a more powerful engine, in-flight refueling, and the provision for nuclear bombs.
2. High transonic drag (HTD).

VPs: 9/6/3/2

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