Lockheed F-80/T-33 Shooting Star

The Lockheed F-80 Shooting Star was a day fighter and fighter-bomber. It had unswept wings and a single Allison J33 centrifugal-flow jet engine. It entered service with the USAAF shortly before the end of WWII, but did not see combat until the Korean War, in which it served extensively with the USAF as a fighter and fighter bomber. Like other early jet fighters with unswept wings, it was found to have inferior performance to the MiG-15bis and was replaced by variants of the F-86 Sabre. It later served with the air forces of Brazil, Chile, Colombia, Ecuador, Peru, and Uruguay.

The P-80A was the first version to enter service and was armed with six .50 cal M2 machine guns in the nose. It was followed by the P-80B, which replaced the M2 machine guns with faster-firing M3 machine guns, used an ejection seat, and many minor improvements. The P-80C was produced in larger numbers than both previous versions. In USAF service from 1948, the P-80 was designated the F-80.

Like many early jet fighters, the F-80 suffered from short range. This was mitigated by the provision of jettisonable wing-tip fuel tanks. These stations were designed for 165 gal tanks, but these were found to be insufficient for missions over Korea from the USAF bases in Japan. A local field modification produced the 265 gal "Misawa" tank, which gave usefully greater range and loiter time, at the cost of overloading the wing-tip stations.

The F-80C was armed with six .50 cal M3 machine guns with 300 rounds per ground. A typical weapon load for F-80Cs engaged in ground-attack missions in the Korean War was two 500 lb M64 bombs or 110 gal (750 lb) napalm bombs often supplemented by four or eight HVAR rockets on the inner-wing stations. Although bombs could in theory be carried on the wing-tip stations, this does not appear to have occurred in practice. When flying from Japan, the weapon load was often limited to four HVARs rockets.

The RF-80C was an unarmed photo-reconnaissance version of the F-80C, with cameras replacing the machine guns in the nose. It was used by the USAF.

The T-33 Shooting Star (known informally as the "T-Bird") was a two-seater trainer developed from the F-80. Most T-33As were unarmed, but a number had two .50 cal M3 machine guns. The T-33A was used by the USAF, USN, RCAF, and the air forces of Bangladesh, Belgium, Bolivia, Brazil, Burma, Canada, Chile, Republic of China (Taiwan), Colombia, Cuba, Denmark, Dominican Republic, Ethiopia, Ecuador, El Salvador, France, Federal Republic of Germany, Greece, Guatemala, Honduras, Indonesia, Iran, Italy, Japan, Libya, Mexico, Netherlands, Nicaragua, Norway, Pakistan, Paraguay, Peru, Philippines, Portugal, Saudi Arabia, Singapore, South Korea, Spain, Thailand, Turkey, Uruguay, and Yugoslavia. Cuban T-33As saw combat during the Bay of Pigs invasion.

The RT-33A was a photo-reconnaissance version of the T-33A developed for foreign use. The nose was replaced with one with oblique and vertical cameras and the rear cockpit was used for equipment relocated from the nose of the T-33A and for additional fuel. It was used by the air forces of Belgium, Chile, Colombia, Ethiopia, France, Greece, Italy, Iran, Netherlands, Pakistan, Portugal, Saudi Arabia, Taiwan, Turkey, Thailand, and Yugoslavia. One was also used by the USAF for Project Field Goal, clandestine reconnaissance missions over Laos in the early 1960s.

Some T-33As were converted into AT-33A light attack aircraft by adding under-wing pylons to the machine guns. The AT-33A was used as a trainer by the USAF and also by the air forces of Brazil, Burma, Dominican Republic, Ecuador, Greece, Mexico, Nicaragua, Paraguay, and Uruguay.

- F-80C
- RF-80C
- T-33A
- RT-33A
- AT-33A

See Also

- Lockheed F-94

F-80C Shooting Star

Crew: Pilot

Power APs/DPs/FPs: ○

	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	0.5	0.5	0.5	0.0
SPBR	0.5	0.5	0.5	—

Maneuver HFPs/DPs:

LR/DR	1.0	1.5
VR		0.5

Turn DPs:

	CL	1/2	DT
TT	0.0	0.0	0.0
HT	1.0	1.0	1.0
BT	1.0	1.0	2.0
ET	—	—	—

Cruise Speed:	4.0	Restr. Arcs:	—
Climb Speed:	3.0	Blind Arcs:	30–
Visibility:	5	Internal Fuel:	135
Size:	+0	AtA Refuel:	No
Vulnerability:	+1	Ejection Seat:	Early

Speeds and Ceilings

Alt. Band	Conf. Ceil.	CL 45	1/2 40	DT 35	Dive Speed
EH+	46+	—	—	—	—
VH	36–45	2.5 – 4.0	2.5 – 4.0	—	6.0
HI	26–35	2.0 – 4.5	2.5 – 4.5	2.5 – 4.0	6.5
MH	17–25	2.0 – 5.0	2.0 – 4.5	2.5 – 4.5	6.5
ML	8–16	1.5 – 5.5	2.0 – 5.0	2.0 – 4.5	6.5
LO	0–7	1.5 – 5.5	1.5 – 5.5	2.0 – 5.0	6.5

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	—	0.5	—	0.5	—	0.5	MH
ML	—	1.0	—	0.5	—	0.5	ML
LO	—	1.0	—	1.0	—	0.5	LO

Radar:	—	**ECM:**	IFF
ECCM:	—	RWR:	—
Arcs:	—	DDS:	—
Search:	—	DJM:	—
Track:	—	AJM:	—
Lock-On:	—	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:	—
AtA/AtG:	4/4**
Bomb System:	Manual

Technology:

None

Load Point Limits: CL : 0–3; 1/2: 4–6; DT : 7+

Weight Limit: 4,200

Station	Limit	Allowed Loads
1 and 8	1,100	BB FT
2 and 7	1,100	BB RK
3–4 and 5–6	280	BB RK

Load Notes:

1. The wing-tip stations 1 and 8 were designed to each carry a 165 gal (600L) FT with a load of 1100 when full. As an exception to the normal loading rules, they may each carry a 265 gal (1000L) FT with a load of 1800 when full, but the maximum turn rate is reduced to HT until the FTs are jettisoned. Such “Misawa” tanks were used in 1950 when operating over Korea from bases in Japan.
2. Stations 3 to 6 can each carry two HVAR RKs.

Notes:

1. The Lockheed F-80C Shooting Star is a day fighter and fighter-bomber. Prior to 1948 it was designated P-80C.
2. High transonic drag (HTD).

VPs: 7/5/2/1

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RF-80C Shooting Star

Crew: Pilot

Power APs/DPs/FPs: ○

	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	0.5	0.5	0.5	0.0
SPBR	0.5	0.5	0.5	—

Maneuver HFPs/DPs:

LR/DR	1.0	1.5
VR		0.5

Turn DPs:

	CL	1/2	DT
TT	0.0	0.0	0.0
HT	1.0	1.0	1.0
BT	1.0	1.0	2.0
ET	—	—	—

Cruise Speed:	4.0	Restr. Arcs:	—
Climb Speed:	3.0	Blind Arcs:	30–
Visibility:	5	Internal Fuel:	135
Size:	+0	AtA Refuel:	No
Vulnerability:	+1	Ejection Seat:	Early

Speeds and Ceilings / Climb Capabilities

Alt. Band	Conf. Ceil.	CL 45	1/2 40	DT 35	Dive Speed	CL AB	CL Oth	1/2 AB	1/2 Oth	DT AB	DT Oth	Alt. Band
EH+	46+	—	—	—	—	—	—	—	—	—	—	EH+
VH	36–45	2.5 – 4.0	2.5 – 4.0	—	6.0	—	0.5	—	0.5	—	—	VH
HI	26–35	2.0 – 4.5	2.5 – 4.5	2.5 – 4.0	6.5	—	0.5	—	0.5	—	0.5	HI
MH	17–25	2.0 – 5.0	2.0 – 4.5	2.5 – 4.5	6.5	—	0.5	—	0.5	—	0.5	MH
ML	8–16	1.5 – 5.5	2.0 – 5.0	2.0 – 4.5	6.5	—	1.0	—	0.5	—	0.5	ML
LO	0–7	1.5 – 5.5	1.5 – 5.5	2.0 – 5.0	6.5	—	1.0	—	1.0	—	0.5	LO

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

Weapon Stations Diagram:

Guns:	—
To Hit:	—
Ammunition:	—
Gunsight:	TT+0/HT+1/BT+2
Ranging:	—
AtA/AtG:	—

Bomb System: Manual

Technology:

None

Load Point Limits: CL : 0–3; 1/2: 4–6; DT : 7+

Weight Limit: 4,200

Station	Limit	Allowed Loads
1 and 8	1,100	BB FT
2 and 7	1,100	BB RK
3–4 and 5–6	280	BB RK

Load Notes:

1. The wing-tip stations 1 and 8 were designed to each carry a 165 gal (600L) FT with a load of 1100 when full. As an exception to the normal loading rules, they may each carry a 265 gal (1000L) FT with a load of 1800 when full, but the maximum turn rate is reduced to HT until the FTs are jettisoned. Such “Misawa” tanks were used in 1950 when operating over Korea from bases in Japan.
2. Stations 3 to 6 can each carry two HVAR RKs.

Notes:

1. The Lockheed RF-80C is a photo-reconnaissance aircraft. It is derived from the F-80C and has a nose containing cameras rather than guns.
2. High transonic drag (HTD).

VPs: 7/5/2/1

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T-33A Shooting Star

Power APs/DPs/FPs: ○

	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	0.5	0.5	0.5	0.0
SPBR	0.5	0.5	0.5	—

Cruise Speed:	4.0	Restr. Arcs:	—
Climb Speed:	3.0	Blind Arcs:	30–
Visibility:	5	Internal Fuel:	112
Size:	+0	AtA Refuel:	No
Vulnerability:	+1	Ejection Seat:	Early

Crew: Pilot and Copilot

Maneuver HFPs/DPs:

LR/DR	1.0	1.5
VR		0.5

Turn DPs:

	CL	1/2	DT
TT	0.0	0.0	0.0
HT	1.0	1.0	1.0
BT	1.0	1.0	2.0
ET	—	—	—

Speeds and Ceilings

Alt. Band	Conf. Ceil.	CL 45	1/2 40	DT 35	Dive Speed
EH+	46+	—	—	—	—
VH	36–45	2.5 – 4.0	2.5 – 4.0	—	6.0
HI	26–35	2.0 – 4.5	2.5 – 4.5	2.5 – 4.0	6.5
MH	17–25	2.0 – 5.0	2.0 – 4.5	2.5 – 4.5	6.5
ML	8–16	1.5 – 5.5	2.0 – 5.0	2.0 – 4.5	6.5
LO	0–7	1.5 – 5.5	1.5 – 5.5	2.0 – 5.0	6.5

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	—	0.5	—	0.5	—	0.5	MH
ML	—	1.0	—	0.5	—	0.5	ML
LO	—	1.0	—	1.0	—	0.5	LO

Radar: —

ECCM:	—
Arcs:	—
Search:	—
Track:	—
Lock-On:	—

ECM:

RWR:	—
DDS:	—
DJM:	—
AJM:	—
BJM:	—

Weapon Stations Diagram:

Guns: Two .50 cal M3

To Hit:	4/2/–
Ammunition:	8.0
Gunsight:	TT+0/HT+1/BT+2
Ranging:	—
AtA/AtG:	1/2**

Bomb System: Manual

Technology:

None

Load Point Limits: CL : 0–3; 1/2: 4–6; DT : 7+

Weight Limit: 4,200

Station	Limit	Allowed Loads
1 and 2	1,500	FT

Load Notes:

1. May use 850L FTs.

Notes:

1. The Lockheed T-33A Shooting Star is a trainer developed from the F-80. The variant shown here is armed with two .50 cal machine guns, although most were unarmed. Prior to 1948, it was designated TP-80C.
2. High transonic drag (HTD).

VPs: 5/3/2/1

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RT-33A Shooting Star

Crew: Pilot

Power APs/DPs/FPs: ○

	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	0.5	0.5	0.5	0.0
SPBR	0.5	0.5	0.5	—

Maneuver HFPs/DPs:

LR/DR	1.0	1.5
VR		0.5

Turn DPs:

	CL	1/2	DT
TT	0.0	0.0	0.0
HT	1.0	1.0	1.0
BT	1.0	1.0	2.0
ET	—	—	—

Cruise Speed:	4.0	Restr. Arcs:	—
Climb Speed:	3.0	Blind Arcs:	30–
Visibility:	5	Internal Fuel:	165
Size:	+0	AtA Refuel:	No
Vulnerability:	+1	Ejection Seat:	Early

Speeds and Ceilings

Alt. Band	Conf. Ceil.	CL 45	1/2 40	DT 35	Dive Speed
EH+	46+	—	—	—	—
VH	36–45	2.5 – 4.0	2.5 – 4.0	—	6.0
HI	26–35	2.0 – 4.5	2.5 – 4.5	2.5 – 4.0	6.5
MH	17–25	2.0 – 5.0	2.0 – 4.5	2.5 – 4.5	6.5
ML	8–16	1.5 – 5.5	2.0 – 5.0	2.0 – 4.5	6.5
LO	0–7	1.5 – 5.5	1.5 – 5.5	2.0 – 5.0	6.5

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	—	0.5	—	0.5	—	0.5	MH
ML	—	1.0	—	0.5	—	0.5	ML
LO	—	1.0	—	1.0	—	0.5	LO

Radar: —

ECCM:	—
Arcs:	—
Search:	—
Track:	—
Lock-On:	—

ECM:

RWR:	—
DDS:	—
DJM:	—
AJM:	—
BJM:	—

Weapon Stations Diagram:

Guns: —

To Hit:	—
Ammunition:	—
Gunsight:	TT+0/HT+1/BT+2
Ranging:	—
AtA/AtG:	—

Bomb System: Manual

Technology:

None

Load Point Limits:

CL : 0–3
1/2: 4–6
DT : 7+

Weight Limit: 4,200

Station	Limit	Allowed Loads
1 and 2	1,500	FT

Load Notes:

1. May use 850L FTs.

Notes:

1. The Lockheed RT-33A Shooting Star is a photo-reconnaissance version of the T-33A trainer. It is unarmed and equipped with oblique and vertical cameras in the nose. The rear cockpit is used for equipment relocated from the nose of the T-33A and for 165 gal of additional fuel.
2. High transonic drag (HTD).

VPs: 7/5/2/1

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AT-33A Shooting Star

Crew: Pilot and Copilot

Power APs/DPs/FPs: ○

	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	0.5	0.5	0.5	0.0
SPBR	0.5	0.5	0.5	—

Maneuver HFPs/DPs:

LR/DR	1.0	1.5
VR		0.5

Turn DPs:

	CL	1/2	DT
TT	0.0	0.0	0.0
HT	1.0	1.0	1.0
BT	1.0	1.0	2.0
ET	—	—	—

Cruise Speed:	4.0	Restr. Arcs:	—
Climb Speed:	3.0	Blind Arcs:	30–
Visibility:	5	Internal Fuel:	112
Size:	+0	AtA Refuel:	No
Vulnerability:	+1	Ejection Seat:	Early

Speeds and Ceilings

Alt. Band	Conf. Ceil.	CL 45	1/2 40	DT 35	Dive Speed
EH+	46+	—	—	—	—
VH	36–45	2.5 – 4.0	2.5 – 4.0	—	6.0
HI	26–35	2.0 – 4.5	2.5 – 4.5	2.5 – 4.0	6.5
MH	17–25	2.0 – 5.0	2.0 – 4.5	2.5 – 4.5	6.5
ML	8–16	1.5 – 5.5	2.0 – 5.0	2.0 – 4.5	6.5
LO	0–7	1.5 – 5.5	1.5 – 5.5	2.0 – 5.0	6.5

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	—	0.5	—	0.5	—	0.5	MH
ML	—	1.0	—	0.5	—	0.5	ML
LO	—	1.0	—	1.0	—	0.5	LO

Radar:	—
ECCM:	—
Arcs:	—
Search:	—
Track:	—
Lock-On:	—

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

Weapon Stations Diagram:

Guns:	Two .50 cal M3
To Hit:	4/2/–
Ammunition:	8.0
Gunsight:	TT+0/HT+1/BT+2
Ranging:	—
AtA/AtG:	1/2**
Bomb System:	Manual

Technology:

None

Load Point Limits: CL : 0–3; 1/2: 4–6; DT : 7+

Weight Limit: 4,200

Station	Limit	Allowed Loads
1 and 8	1,500	BB FT
2 and 7	1,100	BB RK
3–4 and 5–6	280	BB RK

Load Notes:

1. May use 850L FTs.
2. Stations 3 to 6 can each carry two HVAR RKs.

Notes:

1. The Lockheed AT-33A Shooting Star is a close-air-support version of the T-33A trainer.
2. High transonic drag (HTD).

VPs: 5/3/2/1

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