# Lockheed T-33 Shooting Star

**T-33 Shooting Star**


Two T-33s from the 95th Fighter Interceptor Training Squadron in flight near Tyndall AFB, Florida. The farther aircraft has been repainted and renumbered in anticipation of its delivery to the Mexican air force.

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| **Role** | Training aircraft |
| **Manufacturer** | Lockheed |
| **Designer** | Clarence "Kelly" Johnson |
| **First flight** | 22 March 1948 |
| **Primary users** | United States Air Force<br>United States Navy<br>Japan Air Self Defense Force<br>Luftwaffe |
| **Produced** | 1948-1959 |
| **Number built** | 6,557 |
| **Developed from** | P-80 Shooting Star |
| **Variants** | T2V/T-1A Seastar<br>Canadair T-33 |

The **Lockheed T-33 Shooting Star** is an American-built jet trainer aircraft. It was produced by Lockheed and made its first flight in 1948, piloted by Tony LeVier. The T-33 was developed from the Lockheed P-80/F-80 starting as TP-80C/TF-80C in development, then designated **T-33A**. It was used by the U.S. Navy initially as **TO-2** then **TV-2**, and after 1962, **T-33B**.

Despite its vintage, the venerable T-33 still remains in service worldwide.

**Design and development**

The T-33 (aka "T-Bird") was developed from the Lockheed P-80/F-80 by lengthening the fuselage by slightly over three feet and adding a second seat, instrumentation and flight controls. It was initially designated as a variant of the P-80/F-80, the **TP-80C**/**TF-80C**.

Design work for the Lockheed P-80 began in 1943 with the first flight on 8 January 1944. Following on the Bell P-59, the P-80 became the first jet fighter to enter full squadron service in the United States Army Air Forces. As more advanced jets entered service, the F-80 took on another role - training jet pilots. The two-place T-33 jet was designed for training pilots already qualified to fly propeller-driven aircraft.

Originally designated the TF-80C, the T-33 made its first flight on 22 March 1948 with US production taking place from 1948 to 1959. The US Navy used the T-33 as a land-based trainer starting in 1949. It was designated the **TV-2**, but was redesignated the **T-33B** in 1962. The Navy operated some ex-USAF P-80Cs as the **TO-1**, changed to the **TV-1** about a year later. A carrier-capable version of the P-80/T-33 family was subsequently developed by Lockheed, eventually leading to the late 1950s to 1970s T2V-1/T-1A SeaStar. A total of 6,557 Shooting Stars were produced, 5,691 by Lockheed.

**Operational history**

The two-place T-33 proved suitable as an advanced trainer, and it has been used for such tasks as drone director and target towing. The U.S. Air Force began phasing the T-33 out of front line pilot training duties in the Air Training Command in the

early 1960s as the T-37 Tweet and T-38 Talon aircraft began replacing it under the Undergraduate Pilot Training (UPT) construct. Similar replacement also occurred in the U.S. Navy with the TV-1 (also renamed T-33 in 1962) as more advanced aircraft such as the T-2 Buckeye came on line. USAF and USN versions of the T-33 soldiered on into the 1970s and 1980s with USAF and USN as utility aircraft and proficiency trainers, with some of the former USN aircraft being expended as full scale aerial targets for air-to-air missile tests from naval aircraft and surface-to-air missile tests from naval vessels. Several T-33s were assigned to USAF F-101 Voodoo, F-102 Delta Dagger and F-106 Delta Dart units, to include similarly equipped Air National Guard units, of the Aerospace Defense Command as proficiency trainers and practice "bogey" aircraft. Others later went to Tactical Air Command and TAC-gained Air National Guard F-106 and F-4 Phantom II units in a similar role until they were finally retired.

Some T-33s retained two machine guns for gunnery training, and in some countries, the T-33 was even employed as a combat aircraft: the Cuban Air Force used them during the Bay of Pigs Invasion, scoring several kills. The **RT-33A** version, reconnaissance aircraft produced primarily for use by foreign countries, had a camera installed in the nose and additional equipment in the rear cockpit. T-33s continued to fly as currency trainers, drone towing, combat and tactical simulation training, "hack" aircraft, electronic countermeasures and warfare training and test platforms right into the 1980s.

Lockheed T-33A USAF

The T-33 has served with over 30 nations, and continues to operate as a trainer in smaller air forces. Canadair built 656 T-33s on license for service in the RCAF - Canadian Forces as the CT-133 Silver Star while Kawasaki manufactured 210 in Japan. Other operators included Brazil, Turkey and Thailand which used the T-33 extensively.

In the 1980s, an attempt was made to modify and modernize the T-33 as the Boeing Skyfox, but a lack of orders led to the cancellation of the project. About 70% of the T-33s airframe was retained in the Skyfox, but it was powered by two Garrett AiResearch TFE731-3A turbofan engines.


Lockheed NT-33A USAF

In the late 1990s, 18 T-33 Mk-III and T-33 SF-SC from the Bolivian Air Force went to Canada to be modernized at Kelowna

Flightcraft. New avionics were installed, and detailed inspection and renewal of the fuselage and wings were performed. Most of the aircraft returned in early 2001 and remain operational.

A limited number of T-33s have found their way into private hands; some current owners: Michael Dorn of *Star Trek: The Next Generation* fame, Canadair T-33 and northern California based Greg Colyer of the T33 Heritage Foundation who operates a Canadair CT-133 Silver Star monikered "Ace Maker". Various T-33s are based out of Wendover airport, Utah. Kay Eckhardt has his T-33s based at Wendover. They are a Blue Angels variant and a bare metal USAF version.

On 6 September 2006, Imperial War Museum Duxford's Canadair T-33 (*G-TBRD*), owned by the Golden Apple Trust, was destroyed in a takeoff accident; the crew survived. *G-TBRD* was the first jet warbird to be operated from Duxford, arriving in 1975; it was originally registered as *G-OAHB*.

In 2008, several T-33s in storage at CFB Mountain View, an old World War II era RCAF base south of Trenton, Ontario, were sold to various private collectors. Six airplanes were purchased by a newly formed museum out of London, Ontario, called the Jet Aircraft Museum (JAM), associated with the Canadian Harvard Aircraft Association, which purchased the aircraft on behalf of JAM. The six airplanes, formerly designated #133346, now C-FUPM; #133500, now C-FUPO; and #133573, now C-FUPP, as well as #133052, #133263 and #133441, will be flown in airshows and for memorials across Canada and in parts of the USA. Other T-33s have also been sold to various US and Canadian buyers.

In 2010, a T-33 Shooting Star owned by Boeing was used as a chase aircraft during the maiden flight of the Boeing 787 and Boeing 747-8

**MAPS T-33A – Serial Number 53-5250**

The Lockheed Corporation in Burbank California built the Lockheed T-33A, currently at the MAPS Air Museum. It was accepted by the United States Air Force on September 28, 1954. It was assigned first to Headquarters Squadron, 10th Air Force, Selfridge Air Force Base, Michigan in October of 1954. In December of 1957, 53-5250 was re-assigned to the 2242nd Air Force Reserve Combat Training Center also at Selfridge AFB, Michigan. In October of 1958, the T-33 was reassigned to Detachment 1, 2465th Material Squadron (MATRON) still located at Selfridge AFB, Michigan.

Early in 1959, the T-33A made its transfer away from Selfridge when it was assigned to the 3800th Air Base Wing at Maxwell Air Force Base in Alabama. It remained at that location until October of 1963 when it was transferred to the Wisconsin Air National Guard and based General Billy Mitchell Field in Milwaukee, Wisconsin to be demilitarized. Upon completion of the demilitarization process it was dropped from the active inventory and placed on museum status. 53-5250 was donated to the Experimental Aircraft Association (EAA) Air Museum, Oshkosh, Wisconsin by the National Museum of the United States Air Force.

The MAPS Lockheed T-33 Shooting Star (Serial # 53-5250) was picked up from the Oshkosh EAA Museum and delivered to the MAPS Air Museum on Oct.12, 2011. It is currently on loan from the United States Air Force Museum.

**Variants (T-33)**

**USAF**

- **T-33A**: Two-seat jet trainer aircraft.

- **AT-33A**: Two-seat attack version of the T-33A.
- **DT-33A**: This designation was given to a number of T-33As converted into drone directors.
- **NT-33A**: This designation was given to a number of T-33As converted into special test aircraft.
- **QT-33A**: This designation was given to number of T-33As converted into target drones.
- **RT-33A**: Two-seat reconnaissance version of the AT-33A.

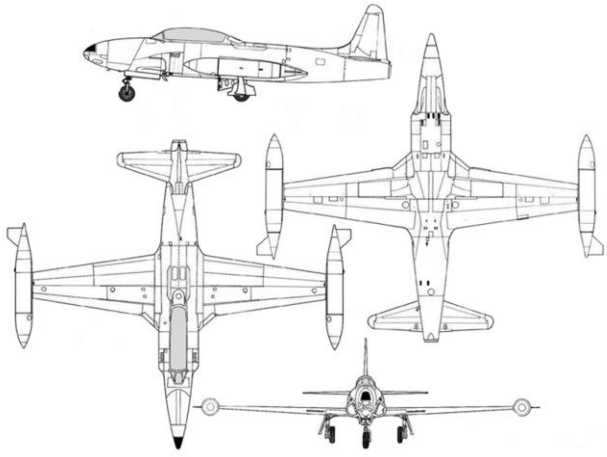
**US Navy**

- **TO-1/TV-1**: U.S. Navy designation of P-80C, 50 transferred to USN in 1949 as jet trainers (not technically T-33 Shooting Star)
- **TO-2**: Two-seat land-based jet training aircraft for the US Navy. It was the US Navy's version of the T-33A. Later redesignated **TV-2**.
- **TV-2KD**: This designation was given to number of TV-2s converted into drone directors.
- **T-33B** designation of Navy's TV-2 in 1962.
- **DT-33B** designation of Navy's TV-2KD.

**Canada**

- **CT-133 Silver Star** : Two-seat jet trainer for the RCAF/ Canadian Forces (also communications, target towing and electronic warfare duties).

**General characteristics (T-33A)**



- **Crew:** Two
- **Length:** 37 ft. 9 in (11.49 m)
- **Wingspan:** 38 ft. 10.5 in (11.86 m)
- **Height:** 11 ft. 8 in (3.57 m)
- **Empty weight:** 8,300 lb. (3,775 kg)
- **Max takeoff weight:** 15,100 lb. (6,865 kg)
- **Power plant:** 1 × Allison J33-A-35 centrifugal compressor turbojet, 5,400 lbf (23 kN)

**Performance**

- **Maximum speed:** 600 mph (970 km/h)
- **Range:** 1,275 mi ferry (2,050 km)
- **Service ceiling:** 48,000 ft. (14,600 m)

**Armament**

- **Guns:** 2 × 0.50 in (12.7 mm) Browning M3 machine guns with 350 rpg (for AT-33)
- **Hard points:** 2 with a capacity of 2,000 lb. (907 kg) of bombs or rocket pods