

This December the Fuerza Aérea Boliviana (FAB, Bolivian Air Force) intends to retire the very last Lockheed T-33s from military service, but it's a loose plan and one that may still change...

report: **Neil Dunridge**

**I**F YOU'RE LOOKING for a classic jet that's a little long in the tooth, look no further than the Fuerza Aérea Boliviana (Bolivian Air Force, FAB) and its Lockheed T-33s. These are better described as 'warbirds' than current front-line combat aircraft, but these charismatic old warriors have been in service in Bolivia since 1973. It's a tribute to the pilots and maintainers that these veteran machines have remained operational for 44 years, especially when one considers that they fly from one of the most demanding airfields of all, El Alto International Airport in La Paz, which at over 13,000ft is the highest international airport in the world.

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# BOLIVIAN

Flying high over the mountains near La Paz, FAB 606 was originally a Canadian CT-133, and is now referred to as a T-33AN. Anthony Pecchi

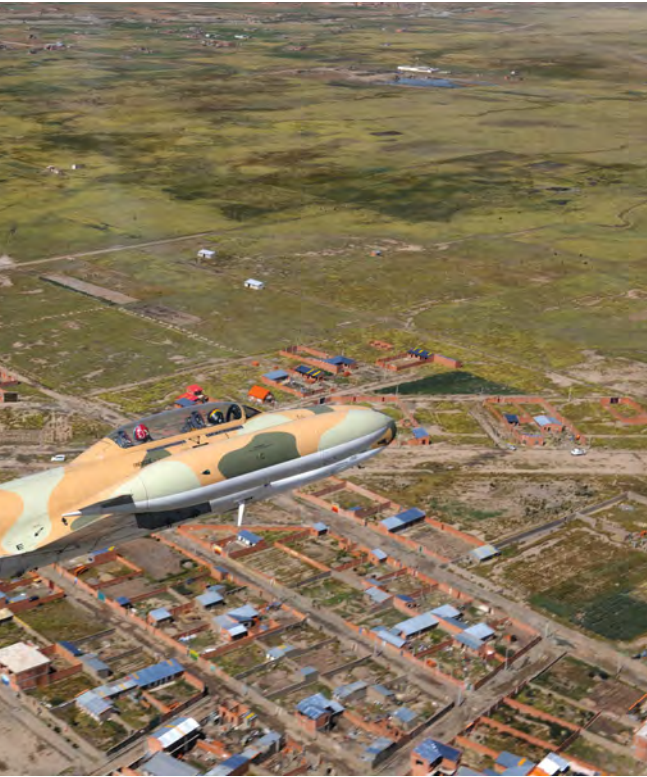
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A product of Lockheed's famed Skunk Works, the P-80/F-80 dates right back to 1943. After WW2 the aircraft was developed into a two-seat trainer, an extra seat being added and the length of the fuselage extended by 3ft to produce the TF-80, which was later designated as the T-33 Shooting Star. The variant's maiden flight took place on March 22, 1948 and service entry with the US Air Force followed later that year. The 'T-bird' was incredibly successful, more than 6,500 examples being flown by air forces around the world. Today, incredibly, one operator remains.

### Last 'T-birds'

The last squadron to use the T-33 in military service will be Escuadrón de Caza 311, part of Grupo Aéreo de Caza (GAC) 31 at El Alto airport. When *Combat Aircraft* visited the unit in late 2016 there were just four T-33s operational, each with only 10 hours of flying time left.

Throughout the 1960s and 1970s any Latin American air force *without* T-33s in its ranks could have been considered unusual. Yet the Bolivian Air Force was a generation behind, still flying North American F-51 Mustangs! In 1971, with the beginning of a military government in Bolivia, there was a shift in the prioritization of defense in the country. In 1972, the Brazilian EMB-326 Xavante was demonstrated to the Bolivian administration, followed by the T-33 early in 1973. The T-33 was selected and a contract was placed for 12 aircraft. These were former Royal Canadian Air Force examples, ordered direct from Canadair, which license-built the type as the CT-133 Silver Star. In a little over six months the first three aircraft began to arrive in Bolivia. All 12 examples (including an attrition replacement for one lost in 1973) had been delivered by mid-1974.

In 1985, the FAB received a further 18 examples from surplus French stocks.



Top left: **Teniente Coronel (Lt Col) Marco Antonio Choquehuanca Marin.** Neil Dunridge

Above: **FAB 606 flies near its home base over surrounding settlements.** Anthony Pecchi

Left: **Three of the remaining T-33s on the flight line at the appropriately named El Alto International Airport in La Paz. FAB 606 now sports special tail markings.** Neil Dunridge

Right: **Climbing into the vertical despite the altitude. A fine view of the T-33AN.** Anthony Pecchi





These T-33SC and T-33SF variants brought the FAB's total inventory to 30 aircraft.

Ultimately, three Bolivian squadrons operated the T-33. In addition to the La Paz-based unit, Escuadrón de Caza 320 flew from El Tromoillo in Santa Cruz and Escuadrón de Caza 330 from Tarija.

### Current ops

Today, GAC 31 is commanded by Teniente Coronel (Lt Col) Marco Antonio Choquehuanca Marin. It has two squadrons under its command. In addition to flying the T-33s, GAC 31 operates a VIP transport squadron, Escuadrón de Ejecutivos 310, operating four Beechcraft family aircraft.

After studying in Brazil, Lt Col Choquehuanca learnt to fly in the Tucano in Brazil before returning to La Paz, where he has flown the T-33 for the past 17 years. Few people are better qualified to describe the current situation as regards the FAB's T-33s. 'Every year we have an exercise with the Army. In 2016 it was the last time we used the T-33 in the exercise [and] we used guns and rockets. The exercise was flown alongside the K-8 Karakorums, Super Pumas and Lockheed C-130s. It will be one of my favorite memories of operating the T-33; we didn't have enough training beforehand because of the fatigue life left on the aircraft, but we really made the most of flying this aircraft and it made the exercise perfect.

'GAC 31 is the oldest group in the Air Force and employed its aircraft in the Chaco War in 1932. It later flew the

**'Once the T-33s retire the squadron will disband until a new aircraft can be procured. We are hoping it will be the Embraer A-29 Super Tucano but the decision is with the government'**

**TENIENTE CORONEL (LT COL)  
MARCO ANTONIO  
CHOQUEHUANCA MARIN**

## THE KELOWNA UPGRADE

At the turn of the century, the FAB elected to implement a much-needed modernization program for its Shooting Stars, as a stopgap measure before the type's eventual replacement. Between 1999 and 2002, 18 aircraft made the journey to Kelowna, Canada, for an avionics upgrade performed by Kelowna Flightcraft.

Work included the addition of a new air data computer that processed altitude and true speed information. It integrated analog and digital information received from the aircraft's internal sensors, including the inertial navigation system and a GPS receiver.

The aircraft gained Barco Systems multi-function displays, including a centrally-placed 6 x 8in screen in each cockpit, which shows the horizontal situation indicator/attitude direction indicator (HSI/ADI), NAVPage flight information including traffic collision avoidance system (TCAS) symbology, and terrain awareness warning system (TAWS) data.

While not part of the upgrade, the FAB T-33s are fitted with 0.5in-caliber guns and carried Argentine-made 2.75in rockets and various dumb bombs.

Capt David Carl Siles is one of the last two pilots to have achieved combat-ready status in the T-33. He says: 'The upgrade also included attention to the engine, ejector seats and the airframe itself. Since the upgrade, the aircraft have flown 500 hours each.'

Referring to the avionics, he says: 'At the time it was a state-of-the-art system. The flight management system includes navigation and centralized control of the aircraft including functions such as fuel management. As part of the avionics package installed on the T-33, an integrated gun control system was introduced. This system, linked to the other components and sensors already mentioned, facilitates the use of weapons with greater accuracy and safety.'

All of Bolivia's modernized T-33s (including the SC and SF versions) were equipped with the new gun control



**The front and rear cockpits of the upgraded T-33AN.** Neil Dunridge

system replacing the old gunsight. Despite several sources quoting that the upgraded T-33s were to be called T-33-2000s, the designation was never officially used. The aircraft are often referred to as T-33ANs.

Left page: **FAB 606 has now received special tail markings and is likely to be the very last operational T-33 to fly.**

Anthony Pecchi

Right: **Pilots on the flightline at El Alto ready for the day's flying. Hours in the T-33s have been severely restricted in recent years.**

Neil Dunridge



North American F-51 and F-86 before transitioning to the T-33. Although we were combat-ready, we never saw combat in the T-33, but until the very end we are able to fly in the close air support [CAS] role. The T-33s were mainly used for training and we were able to use rockets and bombs. There are 13 pilots that form GAC 31 and some are dual-qualified to fly both the Beech aircraft and the T-33s.'

Bolivian pilots had to adjust to the subtle differences between the Canadian-supplied CT-133 Silver Star Mk3s and the ex-French T-33SC and T-33SF variants. The Canadian machines are fitted with Rolls-Royce Nene 10 engines, while the French aircraft flew with Nene 106s built by Hispano-Suiza. The ejector seats, meanwhile, were Martin-Baker ballistic catapult seats. Despite being an older type of ejection seat, they facilitated ejection at zero feet if the aircraft was travelling at 120kt. The last Bolivian T-33 ejection occurred in Tarija during 1998.

### End of an era

Operating at an altitude of 13,325ft before they are even airborne, flying from La Paz means that the T-33s must soldier on at the extremes of their flight envelope. The total fuel capacity of the aircraft is 800 gallons, but because of the elevation they regularly fly with a half-load of fuel if weapons are to be carried. This still offers a respectable one-hour



flight endurance. Lt Col Choquehuanca said: 'We now don't have any spare parts, so must ground the aircraft for safety reasons because the majority of the components are approaching the end of their fatigue life. That is the main reason. We operate the aircraft well, but flying on one engine with time-expired equipment would not be a sensible thing to do.'

'Once the T-33s retire the squadron will disband until a new aircraft can be procured. We are hoping it will be the Embraer A-29 Super Tucano but the decision is with the government. [The Super Tucano] has already flown from La

**Above: The T-33 will be just shy of 70 years old when it bids farewell to military service.**  
Anthony Pecchi

**Below: A proud T-33 pilot and FAB 606 at El Alto as darkness falls.**  
Neil Dunridge

Paz many times during evaluation trials and it has performed well. It is the best choice but contract negotiations need to be discussed in detail. Some of our pilots are already flying them in Brazil.'

Following recent airframe inspections, it is expected that the T-33s could continue flying until December this year, when serial FAB 606 will be the last military Shooting Star still active. Crewed by GAC 31 boss Lt Col Choquehuanca Marin and Capt David Cari Siles, it will bring to an end the type's military service, just four months short of the 70th anniversary of its first flight. ✈

