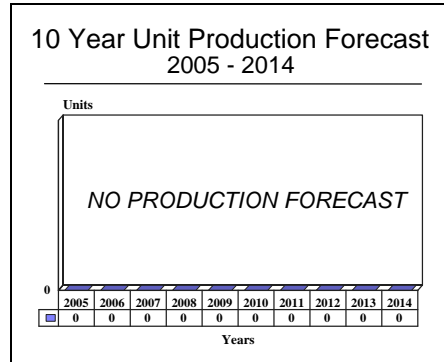


# ARCHIVED REPORT

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## Enaer T-35DT Turbo Pillan - Archived 8/2006



### Outlook

- Turbo Pillan development has been suspended
- Production of the piston-powered Pillan continues

### Orientation

**Description.** Single-turboprop-powered, two-seat basic/ primary military training aircraft.

**Sponsor.** Empresa Nacional de Aeronautica de Chile (Enaer).

**Status.** Development of the Turbo Pillan has been suspended.

**Total Produced.** One prototype (T-35TX) and one pre-production aircraft (T-35DT) have been produced; both aircraft were converted Pillans.

**Application.** Basic/primary flight training, navigation training, aerobatics training, surveillance, law enforcement, search and rescue.

**Price Range.** T-35DT, \$1.3 million in 2003 U.S. dollars.

### Contractors

Enaer, Avenida Jose Miguel Carrera 11087, El Bosque, Santiago, Chile, Prime

Rolls-Royce Corporation, <http://www.rolls-royce.com/northamerica>, PO Box 420, 2001 South Tibbs Ave, Indianapolis, IN 46206-0420 United States, Tel: + 1 (317) 230-2000, Fax: + 1 (317) 230-6763 (250-B17D Turboprop Engine)

### Technical Data

(T-35DT)

**Design Features.** Low-wing monoplane with sweptback vertical tail, and construction of mostly aluminum alloy and steel. The aircraft uses retractable tricycle-type landing gear. The Turbo Pillan is directly derived from the piston-powered T-35 Pillan trainer but includes a new one-piece canopy.

	<u>Metric</u>	<u>U.S.</u>
<b>Dimensions</b>		
Wingspan	8.84 m	29.0 ft
Overall length	8.41 m	27.59 ft
Overall height	2.64 m	8.66 ft
Wing area, gross	13.69 sq m	147.36 sq ft
<b>Weight</b>		
Max T-O weight	1,338 kg	2,950 lb
Max aerobatic weight	1,315 kg	2,900 lb
Empty weight	943 kg	2,080 lb
<b>Performance</b>		
Max speed, SL	426 km/h	230 kt
Service ceiling	7,500 m	24,000 ft
Range with no reserves <sup>(a)</sup>	1,071 km	579 nm

#### **Propulsion**

T-35DT Turbo Pillan (1) Rolls-Royce 250-B17D axial-centrifugal-flow turboprop engine rated 313 kW (420 shp).

<sup>(a)</sup>At 65 percent power at 18,000 feet.



Pillan

Source: Enaer

## Variants/Upgrades

T-35TX. Original turboprop-powered prototype.

T-35DT. The T-35DT features a one-piece canopy and a new oxygen system. First flight of the T-35DT pre-production aircraft occurred in March 1991.

Pillan 2000. Improved version of the Pillan proposed in 1998. It would be developed by Enaer in cooperation with the Russian companies Technoavia and Tyazhpromexport. The Pillan 2000 features an increased-span wing designed by the two Russian companies. The new wing results in reduced weight and improved performance. Stall speed is reduced, and range and climb rate are increased.

The Pillan 2000 would retain the same Textron Lycoming piston engine as the original Pillan. A turboprop-powered version might also be developed, though it is not clear if it would be powered by the Rolls-Royce 250 engine of the T-35DT.

A go-ahead has not been announced for the Pillan 2000 program.

## Program Review

**Background.** Enaer developed the Turbo Pillan (also called the Aucan) from the piston-powered T-35 Pillan with private funding. The company flew a prototype of this turboprop trainer in February 1986, and displayed the aircraft the following month at the FIDA 86 exhibition in Santiago, Chile.

The tandem-seat Pillan underwent some minor changes and structural reinforcement to accommodate the new engine. Chilean Air Force student pilots would do their basic flying in the piston-powered T-35, transitioning to the higher-performance Aucan before converting to the T-36 jet trainer. The latter is the Chilean designation for the license-built CASA C-101 Aviojet.

After the 1986 first flight of the T-35TX prototype, which was a Pillan converted by the U.S. firm Soloy,

the aircraft underwent approximately 500 hours of flight testing. However, in mid-1987 the program was suspended. Enaer subsequently revived the effort, and modified the prototype to include a new one-piece canopy, an oxygen system, and some new avionics. In 1990, Enaer awarded Soloy a contract to develop a production-ready modification kit to convert piston-powered Pillans to the 250-B17D turboprop configuration.

In March 1991, Enaer flew for the first time a second Pillan converted to turboprop power. This aircraft, considered a preproduction aircraft, was called the T-35DT Turbo Pillan. The T-35DT was also powered by the 250-B17D engine. Soloy had performed the conversion on this second aircraft.

## Funding

Not available.

## Recent Contracts

None

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1985	Design studies completed
Feb	1986	Prototype first flight
Mar	1986	Aucan displayed at FIDA 86
	1987	Flight testing suspended
Mar	1991	First flight of T-35DT preproduction aircraft
Early	2000	Production of piston-powered Pillan resumed
Early	2005	Turbo Pillan development suspended

## Worldwide Distribution

Not applicable.

## Forecast Rationale

Enaer has suspended development of the turboprop-powered T-35DT while the company focuses its attention on boosting sales of the T-35 piston. Enaer is planning to make certain structural improvements to the piston model prior to the start of a marketing push for the aircraft in Europe. The improvements include changes to the wing chord and empennage of the aircraft.

The European marketing campaign for the Pillan will be conducted by EADS. In October 2003, EADS and Enaer had signed a three-year accord under which the European conglomerate would participate in Pillan sales

and marketing. The accord could eventually be extended beyond the initial three-year period.

As for the turboprop version, Enaer has never announced a launch order for this model. It is possible that the program will not be resumed. At one time, the Chilean Air Force had shown interest in acquiring the Turbo Pillan. However, instead of procuring new aircraft, the service could decide to convert some of the Pillan pistons in its fleet to turboprop power.

At the present time, the future of the Turbo Pillan is uncertain. Consequently, no forecast is being issued for production of this model.

## Ten-Year Outlook

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No forecast.

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