

Honeywell

THE POWER OF **CONNECTED**

NATIONAL SKYDIVE CENTER FINDS ITS ULTIMATE JUMP SHIP

Texas Turbines Conversions, Inc. achieves landmark 100th Honeywell engine conversion

“The Cessna Caravan is one of the best and most efficient jump ships available thanks to Texas Turbine Conversions. Fitting it with the Honeywell TPE331 engine delivers more climbing horsepower, longer life and longer TBO.”

*Bryan Meijers, chief pilot, National Skydive Center,
Teuge, the Netherlands*





Overview

A successful skydive operation needs fast turnarounds, low fuel costs and longer time between overhaul (TBO). That's why the National Skydive Center in Teuge, the Netherlands, engaged Texas Turbine Conversions, Inc. to fit a new Honeywell TPE331 engine to its Cessna Caravan, transforming it into the ideal jump ship.

Quick Facts

Honeywell Solution

- TPE331-12JR engine

Customer Results

- Fuel consumption is reduced by 20 percent with 30 percent more lift capacity
- TBO extended from 3,600 hours to 5,000 hours
- Engine life extended through 20 percent reduction in horsepower when climbing
- Less engine noise during flight

Why National Skydive Center chose Honeywell

- Honeywell engines deliver the necessary power combined with economic operation
- These are recognized and highly regarded upgrades for the Cessna Caravan
- Texas Turbines has a 20-year record of these conversions

Customer

- Name: National Skydive Center
- Location: Teuge, the Netherlands
- Industry: Skydiving
- Website: www.paracentrumteuge.nl

Background:

Skydive Teuge was formed in 1968 and in 1985 the National Skydive Center was established by a joint venture between the Royal Dutch Aviation Association (KNVvL) and the Teuge Skydiving Center, to provide the Netherlands with a full-time skydiving facility.

Located on the edge of the Veluwe area near Apeldoorn, it is run as a non-profit association that make its individual skydive charges some of the lowest in Europe by subsidizing them from the income made from tandem jumps.

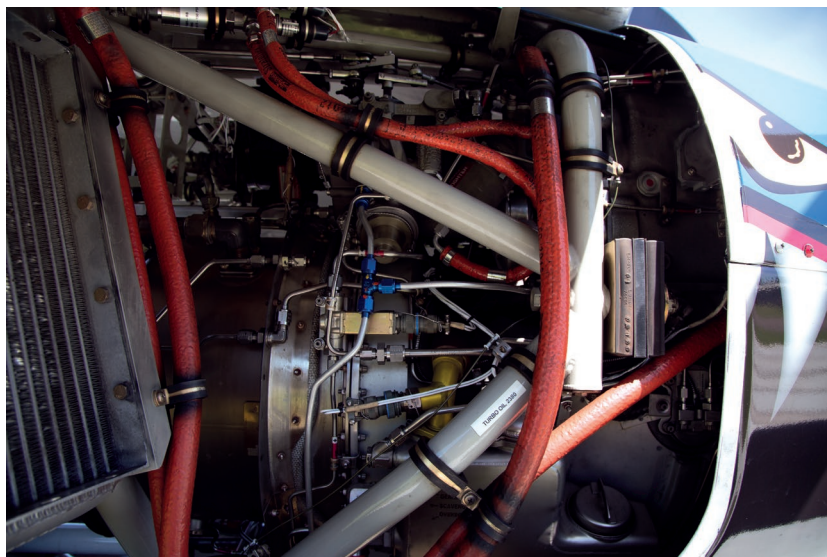
In 1997, the association bought its first Cessna Grand Caravan 208 because of its good build quality, single engine economy and roomy cabin which can accommodate 18 or 20 jumpers. The delivery of this new aircraft marked a big step forward for the organization and was a replacement for two older Cessna 206 planes.

However, there was one drawback, as chief pilot, Bryan Meijers, explained: "The Cessna Grand Caravan is a superb jump ship but the only major disadvantage we found is that the original PT6 engine had a lack of horsepower for climbing performance and ran a little bit too hot."

Business Need:

Successful skydive operations need to turn around as many jumpers as they can in as short a time as possible, and to contain costs. National Skydive Center deals with 45,000 jumps a year which means 300 hours of airtime for each aircraft. Reliable, safe workhorses are required.

"A normal plane climbs for 10 percent of the time, cruises for 80 percent of the time and then it descends and lands for the last 10 percent, but in skydiving we are always climbing, so we constantly need 100 percent of the engine," said Meijers.



"With the original PT6 we had to squeeze every bit of horsepower out of it to get the required performance and in the long-term that will cause more wear."

Solution:

In 2010 the center looked at two options for increasing the Caravan's engine power.

"One was a bigger PT6 and the other one was a Honeywell engine, the TPE331, from Texas Turbines," said Meijers.

"We needed more horsepower and so we did our homework. At first, we thought it made sense to just go with the larger PT6 but when we made the comparison between the two we very soon realized that the Honeywell will outperform the PT6 big time, so we went for the Honeywell.

"When we contacted Texas Turbines they were really good at communicating. We had questions about the conversion and they were really quick with providing good answers."

The association decided on a Supercub 900™ conversion with a 900hp Honeywell TPE331-12JR turboprop.

Texas Turbines holds the supplemental type certificate (STC) for this work and has been converting aircraft to the Honeywell engines since the mid-90s.

The TPE331 engine is flat-rated to lengthen its lifespan while holding rated power at higher altitudes and higher temperatures. It's a direct drive engine which enables instantaneous power response with no spool-up time.

Also, coupling the four-blade Hartzell prop with the slower turning 900 shaft horsepower (shp) engine lowers noise levels but increases static thrust for takeoff, quicker climb and faster cruise.

Texas Turbines' generic comparisons between the PT6A-42A engine and the Supervan 900 TPE331-12R show a 26 percent improvement in take-off distance, a 19 percent increase in climb rate and a five percent increase in maximum cruise speed.

Average overhaul costs are reduced by 58 percent and operational costs per hour, based on time between overhaul (TBO), are reduced by 70 percent.

Benefits:

"The good news for us in the long term is that the original Honeywell engine was 1,100 horsepower but it's de-rated for the Supervan 900 back to 900 horsepower. When we climb, we're only using 80 percent of its capacity which means less engine wear," said Meijers.

"TBO has also improved. With the Honeywell engine, it's 5,000 hours for our type of operation which is a big improvement on the original PT6 which was only 3,600 hours. It means a lot less money spent.



"Another benefit is that it has a torque and temperature limiter which means it's impossible to over-torque or overheat it and that's really good. Also, the inflight noise level of the TPE331 is much lower than with the PT6 and that's important over the densely populated areas of Europe."

The center has seen a 20 percent reduction in fuel consumption combined with 30 percent more lift capacity which keeps costs down and enables it to offer €20 jump tickets. That is the lowest in Europe and attracts many jumpers for across Holland and Germany. Increased power also means a swift turnaround of 14-15 minutes, compared to 23-24 minutes with the original PT6 engine.

Such is the success of the Supervan 900, when the National Skydive Center recently formed a partnership with a drop zone in the north of the Netherlands it decided to replace a Cessna 207 with a Supervan 900. The aircraft was National Skydive Center's third Supervan 900 and it's the 100th conversion for Texas Turbines.

"Texas Turbines' conversion to the Honeywell TPE331 engine has made the Supervan 900 the most efficient jump ship available," concluded Meijers. "It's very reliable, easy to fly and its engine is very efficient."

Honeywell Aerospace

1944 E. Sky Harbor Circle
Phoenix, AZ 85034
aerospace.honeywell.com

A41-0844-000-000
© 2017 Honeywell International Inc.

Honeywell