RIDE OF A LIFETIME WITH HONEYWELL’S TPE331 TURBOPROP ENGINE

Praise from chief pilot after 26,000 hours of flight time

“The Honeywell TPE331 engine has been a bulletproof power plant for us over the years. I’ve flown them for 26,000 hours and it’s been the ride of a lifetime.”

Bill White, chief pilot,
Keller Companies, Inc.
Overview
Honeywell’s TPE331 turboprop engine is celebrating its 50th birthday and Bill White is believed to have clocked more TPE331 flying hours than anyone else on earth. Chief pilot with Keller Companies, Inc. in Manchester, New Hampshire, White says it’s been the ride of a lifetime.

Quick Facts
Honeywell Solution
- TPE331

Customer Results
- From 10 to 15 percent more economical on fuel than competing turboprop engines
- Superior performance delivers five to ten percent higher speeds than similar engines
- Longer time between overhaul (TBO) further reduces operating costs
- Reliable TPE331s have been flown for over 66,500 hours with no serious issues

Why Honeywell
- Honeywell’s TPE331 engines deliver high performance combined with economic operation
- They provide the reliability that is vital for the transportation of key personnel
- Improved economy and efficiency bring significant commercial advantages
- The Mitsubishi MU-2, powered by the TPE331, was purposely designed as a turboprop plane

Customer
- Name: Keller Companies, Inc.
- Location: Manchester, New Hampshire
- Industry: Light transmitting building products
- Website: www.kalwall.com
Background:
Keller Companies, Inc. is a family-owned concern. Under the name Kalwall Corporation, it specializes in manufacturing light transmitting products for commercial buildings.

The company’s translucent panels are embedded with millions of prismatic glass fibers that refract sunlight and are designed to fill spaces with well-balanced, natural daylight. Described as ‘the most advanced daylighting system in the world’, this method of natural lighting was invented by the company’s founder Robert R. Keller Sr in 1955.

Business Need:
Although it has installations as far afield as China, Europe and Saudi Arabia, Kalwall’s principal markets remain in the USA and Canada and its directors, engineers, sales staff and technicians need to travel thousands of miles to oversee installations, meet customers and consult with suppliers.

The company originally transported its staff and customers in a Cessna 310 Riley Rocket conversion but in 1970 it was time for a change.

“Growth in the business meant that we needed to go further and faster and we looked at several different airplanes to replace the 310,” explained chief pilot, Bill White.

“We needed an aircraft that would fly fast and high with a good payload, with slow approach landing speed and just all-round safety.”

Solution:
Keller chose the Mitsubishi MU-2 because it was built specifically as a turbine airplane from the start and was not just a piston engine aircraft with added pressurization and turbine engines.

Powered by two Honeywell TPE331 turboprop engines, the MU-2 would cruise at 300mph and would provide the performance and reliability the company needed.

The TPE331 was originally designed by Garrett for the military in 1959 and the first commercial version received its type certificate from the Federal Aviation Authority (FAA) in 1965.

The series now includes 18 engine models in 106 configurations and more than 13,500 engines have been delivered, logging over 122 million hours of flight time. It is one of the most reliable and proven turboprop engines, known for its shorter takeoffs, improved fuel efficiency and lower operating costs.

In 2015, the TPE331 was awarded the highest overall average score in the product support survey by Aviation International News (AIN) magazine.

This was the fourth straight year it has been ranked number one and the seventh time in the last eight years. The TPE331 came top in all three categories covering performance, service and support and it has also been named Best New Product by Twin Commander Aircraft.

Major engine components of the TPE331 are a reduction gearbox, a two-stage centrifugal compressor, single reverse-flow annular combustion chamber and a three-stage axial flow turbine.

It comes in two sizes, a 415lb ‘Small Block’ delivering 900 horsepower and a 620lb ‘Big Block’ delivering 1,650 horsepower.
A variety of configurations are available and the engine is now incorporated into more than 40 corporate, regional airline and military aircraft applications. It has delivered over 118 million service hours.

Over the years, Keller has owned five MU-2s and currently flies an MU-2B-60 Marquise and an M model MU-2B-26. The M model was bought in 1974 and is one of only two such airplanes in the world to be still owned by its original operator.

After being refitted with a Honeywell TPE331-10-501M engine in 1979 to increase horsepower, it now has almost 21,000 hours’ flight time on the clock. The MU-2B-60 was Keller’s second Marquise model and replaced a G model in 1993. Keller bought the airplane when it had it had 4,000 hours and it is now coming up to 14,000 hours flying time.

The MU-2B-60 carries seven passengers plus the pilot and the copilot while the short body MU-2B-26 takes five or six. Keller uses the MU-2s for domestic flights around the US and Canada and it uses another airplane, a Dassault Falcon 10, for longer hauls.

With four pilots, Keller’s corporate flight department is based at Manchester-Boston Regional Airport and has achieved a total of 78,000 flying hours since 1969. Over the years, the company’s five MU-2 aircraft with their TPE331 engines have clocked up over 66,500 hours and more than 48,000 landings.

White, has been with the company for 48 years and has been flying MU-2s since 1970. He now has 26,000 flying hours with the TPE331, which is believed to be more than any other pilot in the world.

Benefits:

“The TPE331 engine is highly reliable and in over 66,500 hours flying, I can count on one hand the number of engine shutdowns we have had due to an engine problem,” said White.

“That is exemplary performance and I have never had one catastrophic failure or a scary moment flying behind the TPE331.

“During approach if you have to do a go-around or get a little low, it delivers an instant response which is great for a turbine engine and unlike engines which have a delay to throttle movement.

“I find the TPE331 is from ten to 15 percent better on fuel efficiency than similar engines, which lowers the operating costs, and engine overhaul times are longer which also means it’s substantially less expensive to operate.

“Working on the latest overhaul we did, I would say that over 5,100 hours of use the cost averages out at $100 an hour for two engines and I understand that other similar engines are $160 or more. I also find that the performance of the TPE331 makes the MU-2 between five and ten percent faster than similar aircraft.”

With more than 400 employees, the Keller organization relies on efficient and safe air transportation to operate its business and it has achieved that over the 40+ years that it has used several different models and upgrades of Honeywell’s TPE331 engine.

Based on his vast experience of this engine, a last word from White: “I feel much more secure with the TPE331. It has been a bullet-proof power plant for us over the years and bang for the buck, they are great.

“The engines are very efficient and safe, and the reliability is almost 100 percent. For more than 25 years we’ve not had a TPE331 engine malfunction that kept an airplane on the road overnight. We’ve always got home. After 26,000 hours, I can say it’s been the ride of a lifetime.”