



In the Fuel Bay at Aeromotive

AEROMOTIVE have been a Lycoming and Continental distributor for over 25 years and offer a comprehensive in-house engine overhaul facility. Although the ten staff in the engine and propeller shops work their way through between 50 and 70 overhauls annually, according to Engineering Manager Brett Puddle, some new customers have been completely unaware of this side of the operation and are noticeably surprised when they find out.

Greg Mundell heads up the engine shop and explains their capability of overhauling most engine components (as well as the engine itself) as being quite unique in New Zealand; "By and large, everyone else sends their components to us for overhaul as we have the specialist maintenance bays, staff and equipment to tackle most tasks". Aeromotive also have their own engine test cell, possibly the only one in the country set up for piston engines and their comprehensive engine capabilities mean that they are often called upon to act as an impartial party in maintenance disputes or engine failure investigations.



Thomas Kiddle testing the diaphragm section of a RSA7AA1 from a Hughes 300 engine.



Work in progress L to R: Garrett Air Research turbocharger under repair; TCM fuel injection system under overhaul; Marvel Schebler carburettor also in for overhaul.

Inside the fuel bay

Work in the fuel bay predominantly comprises overhaul and repair of carburettors, Bendix Precision fuel systems, TCM Continental fuel systems, propeller governors and fuel pumps. Turbochargers are also catered for, more often in regards to repair, as overhaul is often uneconomic.

The centrepiece of the fuel bay is a Western Skyways test rig which provides for comprehensive testing of Bendix and TCM fuel injection systems. Greg explains that many issues with hot running or poor power output are attributable to fuel flow and the test rig is perfect for confirming (or denying) where the fault may lay. Regular diagnoses are also undertaken on turbocharger control units.

The fuel bay also contains a governor test rig which Greg says is often used to confirm simple diagnoses. A typical example might be a lack of control at

maximum rpm due to internal leakage within the governor.

Experience and problem solving

Aeromotive's engine and prop shop team is well experienced (3 of the staff have some 90 years of experience between them) and also includes a younger contingent who are working toward their licences. Greg himself is heading off on a Textron factory course early in 2010 and will be one of only a handful of New Zealanders to have done so.

The team's experience is often put towards problem solving for customers when other providers have been unable to resolve an issue. In Brett's words, they have become adept at "determining simple answers for weird and unusual problems". A growing list of international customers would testify to this.

Recently a customer in Kuala Lumpur had a

problem with a Socata TB20 engine that had just been overhauled in KL. Aeromotive diagnosed the problem by phone as a fuel control issue. When the control unit arrived they put it on the test rig, found the incorrect settings which were reset and calibrated, then returned it to the customer after which the engine ran within normal parameters.

Another example is a Cessna 206 that needed boost pump to idle every time it was started, though it would run well with power added. The cowl flap cable had gnawed through the induction pipe and when power was added it was being sucked inwards to seal the hole.

For more information

Aeromotive offer a one-stop shop for piston engine overhaul and maintenance. Contact Brett Puddle on 07 843 3199, email: brett.puddle@aeromotive.co.nz or visit www.aeromotive.co.nz

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