Local aeroplane for PNG service

by Mike Feeney


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Pacific Aerospace's latest P-750, now registered as P2-SDE, pauses near Ardmore on its delivery flight across the Tasman and further north by Roger and Linden Millist to join its stablemate (below) which has been serving Adventist Aviation Services in Papua New Guinea for some three years and is proving to be most suitable for a demanding task.

A sure indicator of a utility bush aeroplane's success is repeat purchases by operators. Since the extensive demonstration of Pacific Aerospace's XL750 in 2006, seven examples have been sold to operators in Papua New Guinea.

PNG has long been a rugged proving ground for new types of multi-role machines, starting with the Junkers of the 1920s and continuing with the Pacific Aerospace P-750 XSTOL. The hot-and-high conditions and the multitude of short sloping airstrips have revealed the strengths and weaknesses of many types during the past 85 years.

Over the past year, the majority of aircraft sold by Pacific Aerospace (PAC) have been to repeat clients, with Air Kasthamandap in Nepal, for example, now operating three. Adventist Aviation in PNG has just taken delivery at the factory of its second P-750 XSTOL, and Central Aviation, another PNG operator which took delivery of its first aircraft in 2008 and a second in 2009, has just secured a production slot for a third.

Skydive Deland has just received its second P-750 and the geophysical aerial survey company Kiwi Air took delivery of its sixth P-750 last year. Other repeat customers include Naturelink Aviation in South Africa, Australian Aerial Survey, Maxim Aviation, Pravia Skydive, Skydive Gotenburg and Skydive Taupo.

Ever since studying the early 750XL concept on the computer of then PAC CEO Brian Hare many years ago, I had a strong feeling that an enlarged capacity Cresco would be an ideal single-engine type for high density-altitude operations in PNG which has some 500 airstrips serving its six million people. Many of these strips are at 5000 feet or higher, and during the hotter times of the day the density altitude is close to 3000 feet greater than the pressure altitude.

Furthermore, many PNG mountain strips are poorly maintained and, following heavy rain, are soft and draggy on aircraft wheels — great for stopping but most hazardous for takeoffs. Many are located up narrowing climbing valleys and do not permit a go-around past a decision point which may be a considerable distance out from the threshold. Ergo: you either land or crash!

Simple really, but it sure concentrates one's thinking! It is not quite as scary as it sounds, as an appropriate approach profile is followed by the use of key landmarks, so as long as one passes over or abeam of these identifiable fixes at the correct airspeed, altitude and configuration, all should be well.


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But what I did find particularly challenging, after flying mainly agricultural operations at low density altitudes, was the much higher approach groundspeeds resulting from the combination of maximum landing weight and altitude. Chuck in a few knots of anabatic tailwind and a short airstrip can rush towards one at perhaps 15 to 20kt faster than the same operation near sea level. But most pilots adapt fairly quickly and enjoy the challenge and the satisfaction of pulling off a tidy arrival.

Adventist Aviation (PNG) is owned by the Seventh-day Adventist Church in order to provide air transport and support for the church's diverse and extensive range of activities — they operate and/or support over 600 medical clinics, schools and mission stations. Roger Millist, also a pastor, has been the CEO and chief pilot of the PNG operation for the past six years.

Roger grew up in the Rangiora area where Keith Wakeman was a topdressing pilot and close friend of his father. He earned his PPL in Palmerston North and Hawera, and in 1983 moved to PNG, working for the Adventist Church in the Sepik province and completing his Australian CPL. From 1993 he flew part-time as an outback padre in Western Australia and the Northern Territory as well as running a charter operation out of Esperance, WA, before moving back to PNG in 2004.

The variety of passengers carried by Adventist Aviation includes teachers, ministers, nurses, builders, mechanics and the general public. Freight may be building material, clinic and school supplies and materials for development projects such as the provision of clean water.

The return back-load flights to main centres often haul bulky cash crops such as coffee, peanuts, vegetables and vanilla. Such crops are usually the only way the village folk can raise any money. There is no social welfare system in PNG and little paid employment, so most of the population must exist on what they can grow on their own land. Agricultural practices date back tens of thousands of years in the PNG highlands.

Due to the extremely difficult terrain, the poor state of the surface transport infrastructure, law and order problems and outbreaks of tribal disputes, the use of light aeroplanes is vital if anything is to get done in a timely and reliable manner.

Unless one has experienced it, it is difficult to explain just how slow and arduous it can be to try to walk even a few kilometres. I had to, when investigating air accidents, and the memory of clambering around precipitous faces while wearing a backpack and clinging onto vines while swinging a machete is difficult to forget. I recall trying to raise the spirits of my team by uttering such ludicrous remarks as: "Tally-ho chaps — this is all jolly character-building stuff!"

Of course in more populated districts there are footways that have evolved by use over thousands of years, but progress is still slow and laborious when climbing with a load. The aeroplane is a truly wondrous machine in such countries. That is why they were used so early in PNG.

Until receiving its first P-750 in February 2007, Adventist Aviation's mainstay machine was the turbocharged Cessna TU-206 which has served PNG well since I flew the first one in the country way back in 1964. It then seemed almost luxurious when compared to the somewhat spartan Cessna 185.

The reasons for selecting the New Zealand product are several. Avgas is available only in drums and is expensive at $US2.00 ($2.80) per litre. Jet-A1 is about half that and is available in bulk as well as drums. The fuel cost per hour for a TU-206 is $197 as against $281 for the P-750 which can carry twice the number of people and three times the payload.

The P-750 is easier to maintain with 150 hours between services and performs much better in climb rate and altitude capability. The large belly cargo pack is particularly useful and can carry the entire payload of a Cessna TU-206 and enables the cabin to be kept clear for up to nine passengers or hauling bulky loads of bags of coffee beans, vegetables, peanuts and vanilla back to main centres.

Adventist Aviation Services

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Cash crops are important for the village people who have little other means of obtaining funds for such things as school fees. Typical loads weigh about 1200kg with two hours of fuel on board. Adventist Aviation plans for one hour's fuel reserve due to the rapidly changeable weather, although the CAA VFR minimum is only 30 minutes!

The P-750 XSTOL will fit in and out of all the airstrips used by the TU-206, most of which are about 500m in length with some sloping to 18 percent. Some are much shorter and require careful weight planning and a high level of pilot expertise.

A great advantage of using a larger and faster machine is that a work programme can be flown so much more quickly. In the PNG highlands the best flying weather is through the morning until mid-afternoon. Given optimum planning, a P-750 XSTOL can achieve by about 10.30am what it would take a TU-206 until 3pm to complete.

And finally, it uses one of the most superb powerplants ever to be fitted to an aircraft — the 750shp Pratt & Whitney PT6-34, an engine which imbues great pilot confidence when operating a single-engine aeroplane over Papua New Guinea.

It is a source of great satisfaction that this great bush machine is being exported from my home town where I saw its prototype great-grandfather, the 225hp Fletcher FU-24, first fly in New Zealand when I was a 14-year-old. What a success story for a little nation tucked away in the far reaches of the vast South Pacific Ocean.


Pacific Aerospace

Unusually for an aeroplane built for this purpose, the P-750 has control sticks, not wheels. The crew seats are of a new type.


Adventist Aviation Services

Anything with Cresco ancestry is at home on grass airstrips. The P-750's high-lift wing combined with adequate power and load carrying capability is making its mark in PNG's operations.