
A History of Flying TAA Bristol Freighters in New Guinea

By Ron Austin (Bristol Captain 1963-1966)

Introduction

Following a Fitting and Turning apprenticeship which included qualification as an Electrical Mechanic, Ron Austin followed a lifelong ambition to become a commercial pilot.

During three years of flight training at the Royal Vic. Aero Club, Ron worked as an electrician at Essendon airport in the aircraft overhaul division of Trans Australian Airlines (TAA) to cover his flying training costs. Having gained a commercial licence, Ron was transferred to TAA Flight Operations in February 1956, beginning his airline career on a Douglas DC3 pilot engineering course.

After extensive flight training and appointment as a First Officer, Ron progressed from DC3s to Vickers Viscounts and then to the Lockheed Electra. Immediately following command training in 1963, Ron was posted to New Guinea for three years where he flew 1,000 hours a year on DC 3s and Bristol Freighters. Returning to Melbourne in 1966 Ron flew F27's, Viscounts, Electras and DC9s, converting to the Boeing 727 in 1973. A Training Captain on all of these types, Ron retired from the airline industry in 1985 after 11 years on the 727.

Ron Austin finally retired in 2015, aged 85, after 29 years working on church maintenance. The following story explains why TAA pilots came to be flying second-hand freighter aircraft purchased from Pakistan in New Guinea (NG) in the early 1960s and some of the unusual challenges they had to deal with. Bristol crews often operated to remote locations in the highlands where normal facilities were limited, if they existed at all, requiring them to use their initiative when things did not go to plan. Ron is an Associate of the Royal Aeronautical Society.



Bristol VH-TBA

Some Background

The introduction of Bristol Type 170 (B170) Freighters into Pakistan was the result of a political decision taken by the British Government. In 1948 the Pakistan Air Force (PAF) had ordered a batch of Bristol Brigand fighter aircraft from England and then cancelled the order. The British demanded compensation and substituted the order with Bristol Freighters. These strange aircraft were unwanted but the contract was completed and a total of 71 Freighters - Mark 21s and 31s - were ferried from the UK to Pakistan where they apparently did provide satisfactory service.

The majority of freighters were used for general PAF operational flying but many were converted for special projects. Some were modified for VIP travel, five of them were fitted with spray equipment to spray plagues of locusts and several aircraft were modified, in 1953, to carry a 4000 lb. bomb! These special 'bomber' aircraft had been fitted with under wing hard points to carry the bombs and had a clear plastic panel built into the bottom of the large front clam shell doors, presumably to be used with a bomb sight.

How TAA Got Involved

With this background, Trans Australian Airline joined the story in 1961 as part of the B170 history.

Early in 1959 the Australian Federal Government decided that the domestic airline, Trans Australian Airlines (TAA), should replace the Qantas Airline in New Guinea (NG) responsible for all passenger and freight flights. In 1959, the largest aircraft Qantas were using in NG were Douglas DC3s. TAA management soon realised that an aircraft larger than a DC3 was needed to move the heavy cargo expected to be delivered to NG in the near future.

At that time Ansett Airlines (operating as Mandated Airlines) were also flying in NG in opposition to Qantas. It was decided that TAA and Mandated Airlines (MAL), as potential competing freight carriers in NG, would make a joint purchase, from Pakistan, of surplus Bristol Freighter aircraft. There were three aircraft for MAL and 4 for TAA and Australian crews flew them to Australia in 1961.

After arrival, selected aircraft were serviced by their respective airlines and then flown to NG. In preparing the aircraft for NG operations, some upgrade modifications were completed in Australia by TAA to improve the overall safety of the proposed operation; one major change being the removal and replacement of the Bristol brakes.

Safety Improvements and First Flight

Originally the aircraft were fitted with typically English, unreliable, air-activated bag brakes which TAA replaced with DC6 hydraulic brakes. To actuate these new brakes a converter was fitted which turned the original air pressure brakes into hydraulic ones.

The original air brakes had already failed dangerously during a training flight at Mangalore airport; a hair-raising story of this brake bag failure was later described by Captain Ivan Neil: When the aircraft first arrived in Melbourne, Ivan was one of two new Bristol Captains being converted to the type under the supervision of a senior TAA check pilot. During this conversion training at Mangalore, when the 2nd trainee was in the Captain's seat doing circuits and landings, Ivan decided to watch a landing while lying down below on the floor of the cargo hold, and looking through the Perspex

panel fitted into the lower part of the door. After a smooth touch down, as the brakes were applied the pressure bag in one wheel brake failed. Ivan hung on to the floor as best he could while the aircraft turned to the left, ran off the edge of the runway then was steered, by rudder, back onto the hard stuff; Ivan said he would never go down there again.

The TAA aircraft were registered in Australia as VH-TBA, VH-TBB, VH-TBC and VH-TBD. TAA planned to use the first two in NG and to retain TBC and TBD in Australia for replacement parts. When all necessary modification work was completed the aircraft were flown to Lae to commence the freight operation. TAA made a decision that the first flight in NG would be celebrated by an invitation to all local dignities. At the insistence of TAA management, Captain Neal departed for this flight in very marginal weather conditions. Immediately he departed the Tower declared "Lae airport is closed to all operations"; shortly afterwards on climb out, one engine failed and had to be shut down. Capt. Neil then advised the tower by radio that he was "returning to land at Lae". The tower's response was to advise him that the airport was closed, his reply to which was "Well, I am just about to reopen it." This was typical of Ivan's very positive approach as a Captain; all ended well.

Pilots Introduction to New Guinea and the Bristol

The TAA pilots required to fly the Bristol in NG usually completed a ground theory course in Australia before their posting. Following arrival in New Guinea in 1963 at the beginning of my 3-year posting, my flying endorsement training was conducted in Madang by experienced pilots who were soon to complete their own 3-year posting and return to Australia. These experienced pilots taught us not only to find our way around the hills of the un-mapped Highlands, usually in restricted visibility conditions, but also how to survive this different aviation environment while flying in the extremely dangerous mix of mountains, rocks and cloud. I found the flying in this new operating environment to be challenging in many ways and completely different to the instrument flying I had been doing for the previous 7 years. In 1963 there were no survey maps available of the highland interior so we had to draw our own maps for navigation. Those of us who converted to fly the Bristol

soon appreciated the suitability of this aircraft to carry freight. It was easy to load and unload, and the power/weight ratio was superior to the DC3's making it much safer to fly in marginal conditions.

During this introductory period on the DC3, we were taught to land on the steep 8% slope at Wau as part of an overall endorsement. We learned to increase the engine power immediately on touchdown to maintain our rolling inertia up the slope to the top of the grass field. We then swung the tail around until the aircraft was facing across the slope. The local natives would then duck in under the engines with the wheel chocks, fit them tightly against the front and back of the wheels and only then, securely held, could we stop the engines.

During discussion about the very steep slope on the field my instructor told the story of a Bristol Freighter which had run uncontrolled down the hill to crash at the bottom of the airport. He said "now it is used by the natives as a 'Boi' house".

The First Bristol Freighter in New Guinea

Recent research has uncovered the true story of this first Bristol in NG and its early demise. A demonstrator B170 MK-1A, registration G-AIMC, was prepared by Bristol in England to undertake a sales tour of Australia and New Guinea; it departed England in March 1947, arriving in Darwin after 19 sector stops on the journey.

On take-off from Darwin for Melbourne, the upper access hatch behind the pilots broke off; I can relate to this as I also lost a hatch, having failed to check that it was locked after our radio had been serviced in Madang. In my case there was no damage but in the Darwin incident the 'flying' hatch detached and damaged the tailplane. The demonstrator aircraft was repaired and although this delayed the New Zealand tour, it commenced on July 1947. A successful sale of Bristol Freighters was confirmed with Straits Air Freight Express who increased their order to 23 aircraft which were used to carry freight between the North and South islands.

Back in Australia in October 1947, the demonstration aircraft was serviced and then loaned to Qantas New Guinea for evaluation and flown up to New Guinea for trials.

Part of the overall assessment included operating in the highland goldfields of NG,

several flights being made into grass strips at Wau and Bulolo; as mentioned above, the Wau strip is a steep, 1 in 12 slope and is 3400 feet above sea level.

On the day in question the aircraft landed up the slope and stopped at the top facing up the slope; importantly, not 'across the slope parking' as used by other aircraft. After stopping, chocks were fitted under the wheels and then the parking brake was applied. However, in this case, the nipple on the parking brake became detached from the brake lever and the aircraft began to run backwards down the hill with the personnel still on board. The engineer and one other jumped clear but the rest were carried down the hill and over a 20 foot drop at the bottom; no one was injured.

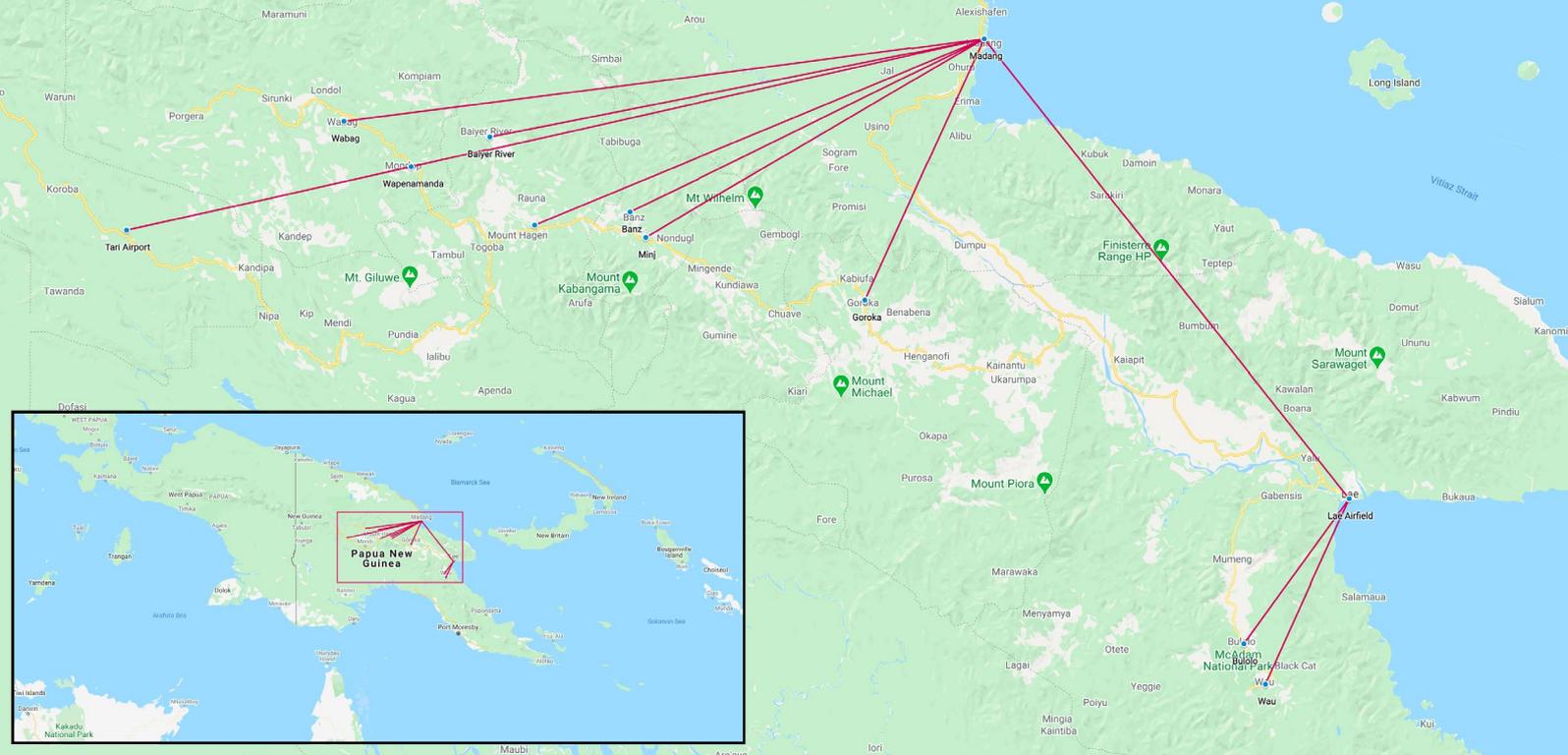
On impact with the ridge, the fuselage broke in the region of the rear door and the aircraft was declared damaged beyond repair. All equipment, including the engines, was removed for re-use. The fuselage remained there on site and was used as quarters for the native employees of an adjacent coffee plantation. The aircraft had only flown 250 hours and was valued at 50,000 pounds.

Apparently, the reason they did not park across the slope on this occasion was because the 'across the slope parking' method had been tried previously but the effect of the slope had distorted the aircraft fuselage and made it difficult to lock the front clam shell doors. On this occasion 'nose up' parking was tried (unsuccessfully!) as a remedy.

TAA operations in New Guinea

The two TAA operational aircraft commenced their flights in NG, VH-TBB in June 1961 followed by VH-TBA in September 1961.

Later the two Bristol's were based in Madang as this town was the centre of the freight transfer into the interior of NG. The advantage of the airport at Madang was being adjacent to a cargo wharf and closest to the airstrips in the Highlands. The airport had a single runway used for all departures and arrivals, and was sealed with bitumen. Most of the other landing strips that we used in the Highlands were either loose dirt or grass which was very slippery when wet. Many strips were one way operations; you landed uphill and then took off in the reverse direction, downhill.



A map highlighting some of the routes flown by Ron.

The large Bristol Hercules sleeve valve engines were powerful and rather more complex to handle than the DC3 Pratt and Whitney engines. First flight of the day required a very long idling period to raise the temperature of the thick engine oil to a satisfactory viscosity. To start the engines at the high altitude strips, the priming of the fuel system was radically different to the procedure used to start at sea level. We could not rely on the petrol gauges fitted in the aircraft because, after refuelling, the small quantity of fuel we carried could only be reliably guaranteed if the total in each tank was measured by hand with a wooden dip stick. This task usually fell to our young First Officers. After each refuelling at Madang the F/O's would climb past the radio rack behind the crew seats, open a hatch and climb out on top of the fuselage. From here it was a dangerous walk along the top of the wings to reach the fuel caps and check the quantity of petrol with the dip stick. When looking into the large wing tanks the amount of fuel in the bottom always seemed tiny. For the First Officers there was a very real danger of slipping off the wing or the fuselage top. This was back in 1963 and would never be allowed under today's Health and Safety regime.

Our ground engineers coped very well, with absolutely minimum equipment, with their job of keeping the Bristol's flying. Most daily maintenance was done in the heat of the sun, without any cover for shade. A partial solution to this was to keep their spanners cool in a bucket of water while working in the open.

We experienced many serviceability problems not expected by the designers. For example,

the tail wheel had an electric solenoid lock that could be released for taxiing and then before take-off it was locked to help keep the a/c straight on the runway. When landing and taking off on wet grass strips in the Highlands, the mud would cover the solenoid. During the flight back to Madang the mud would solidify and after landing, on some occasions, the power of the electric solenoid was not strong enough to withdraw the lock and enable us to swing the tail to taxi. This fault required the aircraft to remain on the runway while the First Officer exited by the top hatch, walked down the fuselage and jumped off at the tail, He then lay on the ground with the aircraft fire axe and hammered the locking pin to loosen the mud. This problem was probably unknown, nor ever imagined, by the Bristol designers.



This photo shows Wabag, a typical, very narrow strip in the highlands. The runway surface was of river pebbles carried up to the strip by the natives, stamped in and rolled into place, and only just long enough. An overshoot was not an option due to the surrounding hills. A short touchdown was essential using the uphill slope to retard the aircraft, take-off downhill. There was no data for an aborted take-off, brakes off and you GO!

Unusual Cargo

For the flight crew of the Bristols operated by TAA in New Guinea in the early 60's there was a very positive sense of achievement gained by handling the extreme variety of the cargo. We had the overall responsibility to see the cargo off-loaded in the safest manner but also within a practical time schedule. Some Bristol cargo loads were particularly difficult to handle. For example, we could carry a complete D4 Caterpillar tractor, weighing eleven thousand six hundred pounds.

The traffic officers would ask me, as Captain, where I wanted the load to be tied down. In Melbourne a team of "Engineering boffins" would take ages to do the calculations for such a load but in New Guinea this was entirely at the Captain's discretion. Judging the centre of balance of the tractor, you would instruct the loading crew to place this below the centre of the wing structure which is visible at the top of the cargo bay. Securing the load properly was impossible; we chocked the tracks and then used light chain to attach it to the floor – but the tie-down attachment points were only rated for two hundred pounds. This meant that we had to be very careful when accelerating on take-off and correspondingly very gentle when using the brakes after landing.

The Bristol's large load capacity was required because the NG Administration intended constructing a road suitable for trucks, from Lae Township to Goroka and Mount Hagen located in the centre of the Whagi valley in the Highlands. This was a very major undertaking. For the project they needed trucks, bridge girders, bulldozers, tractors, graders and similar gear which could only reach the Highlands of NG in an aircraft as large as the Bristol.

Other non-government contracts were also planned, one being to move the components of a complete, brand new tea processing plant from Madang to the town of Mount Hagen, located in the Highlands at an elevation of 5,500ft. This item had been ordered in kit form from England and the specification to the manufacturers included the requirement that every component (tanks, condensers pipework etc.) had to fit into a Bristol Freighter cargo bay. When loading the components of the processing plant we found that the large round condensers fitted into the hull almost like a cork in a bottle. However, we also learned that when this 'build it yourself' factory kit was unloaded on the Madang wharf, the stevedores, in their

wisdom, had cut the steel wrapping holding each specific bundle of piping together. While this assisted with our loading and carriage, it was a nightmare for the engineer sent from England to assemble the plant. On one occasion I recall seeing a puzzled-looking engineer walking around the plant with a complex bendy pipe trying to find its correct location.



A typical Bristol fuel cargo load showing just 3 of 26 drums of aviation fuel within the cargo bay, merely tied to the plywood floor with rope. Earthing wires were clipped to each drum and then connected to the fuselage structure to minimize the risk of static electricity fires. Note the two fire extinguishers (on the door), optimistically provided to put out a potential fire of 1100 gallons of fuel!

Other heavy freight items I have flown into the Highlands include complete D4 Caterpillar tractors, another was a road grader, stripped of its engine, but complete with the blade still attached, to enable the unit to be unloaded with our portable ramps at destination. When carrying trucks as cargo, the wheels were often removed and they were rolled in on their brake drums. This reduced the height of truck to enable it to be moved far enough into the hull, below the wing structure, to be able to shut the door. Our cargo staff became quite versatile at finding solutions to loading difficulties.

Occasionally we had to carry long H-section steel beams. They were very heavy and just four of them made up a maximum cargo load.

In Madang the beams were loaded using forklifts but there was none of this equipment available in the Highlands at our destination airfields. My method was to use the Agent's truck and a chain to unload the beams. This was accomplished by several half hitches of chain being wrapped around a beam so they could be pulled out one at a time from the front of the aircraft with the truck. Because the beams fell onto soft dirt, I don't think we bent any of them, but they were quite a sight as they crashed to the ground.



Pushing the aircraft up to the ramp to unload motor vehicles.

Another incident illustrates how the lack of freight handling equipment affected the job. One particular flight involved two large, steel, underground petrol tanks which were loaded by forklift in Madang for transportation to a grass strip at Minj, which served a tiny coffee growers' district. Unfortunately there were no fork lifts at Minj so after some discussion, the agent made contact with the local Government Patrol Officer. One of this Officer's responsibilities was supervising the convicts in his district who were committed to jail for minor offences and who were normally employed repairing the roads. Patrol Officers were energetic and practical fellows and he soon appeared at the airstrip with 27 men from the gaol. Having rope available in the cargo bay, and being an old Boy Scout, I used the rope to form a bridle around the back of the tank to which 2 long ropes were attached that extended outside the front doors. With 13 men pulling on each rope they started to drag the first tank from the cargo bay. They pulled on the ropes in unison, to a loud sing-song cadence, their rhythmic chants and method being similar to that used by the wind jammer sailors when hoisting sails, singing and pulling. The first tank was moving to the doorway when one of the ropes broke. There was much hilarity as the team climbed to

their feet again and we did a quick reef knot to join the rope. The first tank emerged from the aircraft, fell to the ground and was rolled away.

The second tank was further down the sloping fuselage and was more difficult but the extraction went smoothly to start with using additional rope. However, because of the longer ropes, when falling to the ground, this tank lacked directional control and rolled sideways hitting the side of one of our nose doors quite heavily.

Before departure, when the time came to close the doors, we found that, the clamping levers would not move into the locked position which was a problem because the aircraft could not fly if the doors were unlocked. Following some more discussion, I asked the Patrol Officer to again divide his team in two to push the doors together while I attempted to lock them on the inside. Success! We flew back to Madang where we told the engineers about the problem and suggested they take care when releasing the locks as they could be dangerous with all that strain on them. It all ended well - the door struts are adjustable and that night the damaged door was restored to its original shape.

'How To Bog A Bristol' or 'Just Another Day at the Office'

The Lead Up

One afternoon before leaving the Madang airport after a strenuous day's flying in the Highlands, the Senior Traffic Officer advised me that there was a full load of building material which had to be taken the next day to Tari, a settlement located furthest from Madang. They intended to load the Bristol aircraft overnight and he asked me to do the flight first thing the following morning.

On the flight plan, there was still some payload available so I asked my wife Audrey if she would like to join us on this flight and go for an unusual tour. A fellow Madang-based pilot, Captain Aart Hofman, also elected to fly as second pilot for the experience. The majority of traffic in and out of Tari was light charter aircraft so the strip surface was never designed for heavy aircraft. The surface could only be maintained using a tractor to pull a light steel roller along the strip; this soft surface was to prove our downfall.

Outbound to Tari

Time of day: Early Morning.

Visibility: Excellent.

Route: Slightly Scenic.

Following an uneventful flight we were soon descending through the Tari gap entrance into the valley which is slightly lower than the surrounding mountain range. At the bottom of our descent we positioned the aircraft for our downwind leg, final turn and landing. After touchdown we rolled the full length of the strip to avoid heavy braking on the dirt surface then turned and backtracked to the unloading bay located near the centre of the strip. This small gravel area was really too small for a Bristol and attempting to turn the aircraft put the left mainwheel into loose dirt. The wheel sank into this softer surface and the heavy aircraft was bogged.

Bogged

I have been asked what a commercial pilot thinks in such a situation. Well, having come to an unexpected stop my first reaction was to glance down at the left wheel. You immediately accept the fact that aircraft is not going anywhere. There was nothing we could do but shut down the engines and give a normal arrival call to Madang Air Radio. While doing these routine actions, mentally your mind is processing the options you might have to get the aircraft out of this situation. The mental process of considering alternatives is a familiar feeling being something we do constantly from the time the aircraft first moves on the tarmac until the engines are cut and the passengers disembarked or the cargo unloaded at the completion of any flight.

Back to our problem! Disembarking, we confirmed that, thankfully, there was no damage to the wheel or the aircraft. The tyre had just broken through the surface. Aart, the co-pilot, and I agreed that the first step was to have the heavy cargo unloaded to make the aircraft lighter. The second step would be to dig the aircraft out. We discussed the situation with the Tari agent and when I asked for a shovel to dig the wheel out he said he would contact the local Government Patrol Officer.

Getting 'Unbogged'

The agent contacted the local Government Patrol Officer who was typical of his kind.

These officers were often very capable and enthusiastic, helping with any problem in their district. The Government Patrol Officer duly appeared, not alone, but with a large number of "calaboose" convicts, locals who were serving time in jail for various misdemeanours. The team had several shovels so it was a breeze to dig a ramp down to the level of the bogged tyre. We had to curb their abundant enthusiasm however, had we not done so they would have buried the aircraft in dirt.

With the load removed and the ramp down to the tyre completed, we shut the front clamshell doors then the co-pilot Aart and Audrey stood forward of the aircraft where I could see them. Once all was clear I increased the power on the left engine while holding the right brake thereby attempting to lever the left wheel out of the hole; it remained stuck. Shutting the engine down again, we then had a "committee meeting". The patrol officer could see our problem and he suggested that the convicts push sideways on the rear fuselage adding more leverage so as to drive the wheel up the ramp. For this second attempt Aart also suggested we use the flaps to boost the down wash and improve the lift on one side. To our relief this attempt was successful and the wheel rolled up the ramp and forward on to firmer gravel. I believe the native team pushing on the side won the day for us. Only then did I note that while the engine was running Audrey and Aart had their hands completely over their ears. At close range the noise of just one Bristol engine at high power is painful to the ears.

Return to Madang

Our native "emergency team" expertly filled in the hole we had made and repaired the parking bay, I have no doubt that their long practice building roads made them experts. Following thanks all round we climbed aboard the aircraft for our return flight with Aart at the helm as nominated Captain. I offered to point out an alternative route to Madang but Aart asked me which was the most direct route and I told him "over Mount Hagen" so he made a command decision and this direct track was his choice. We had a clear run home over the Whagi valley, and were soon on the ground again at Madang; I don't think Audrey has ever been so glad to climb out of an aircraft. Even now, 50 years later, she can still remember the noise and the headache. There were no repercussions following this little adventure – it was "Just another day at the Office".

The End of an Era

Completion of the road to Mount Hagen reduced the quantity of air freight required to be carried from Madang into Goroka, Mount Hagen, Minj, Banz, Baiyer River and the other major towns. Lifting all that heavy gear and mobile equipment eventually helped build the road from Lae to Mount Hagen into the highlands so really we were working ourselves out of a job. The transport system could now run without the assistance of the Bristol Freighters.

To conclude, after 5 years of intensive work in NG, TAA decided in 1967 to remove the Bristol aircraft from New Guinea and sell them in Australia to Air Express. Of our two Madang based aircraft, VH-TBB continued flying with Air Express and VH-TBA was stripped for spares in Brisbane.

TAA Engineers and crews involved in the operation of the Bristols.

Our research was assisted by the joint memories of those persons still surviving 42 years after leaving NG. Names may be missed, perhaps we have an excuse.

Ground Engineers	First Officers	Captains
Graeme Buntrock	Barry Adamson	Tony Armstrong
Bob Harvey-Hall	Peter Brown	Ron Austin
Hans Helberg	Fred Fethers	Jack Curtis
Jim Lattimore	Lance Grant	Bob Frazer
Ron Mathews	Darrell Mitchell	John Guggenheimer
Fred Nott	Eric Wiltshire	John Herrick
Ian Johnson		Aart Hofman
Bruce Satchell		Daryl Mc Kenzie
Alan Thompson		Ivan Neal
Alec Topp		Frank Savage
		Bob Slater
		Barry Stewart
		Nial Sullivan
		Peter Worley
		Charlie White