

6. POST WAR RECONSTRUCTION

International conflict during the War led to a new world order, divided between East and West, with the Western block dominated by the United States of America. The values which shaped policies in Australia were increasingly influenced by US trends. It was a world view dominated by automobile and aircraft manufacturers: railways were seen by many as a relic of the *steam age*. In Australia, and particularly in developing countries, railways failed to attract the necessary investment for reconstruction and modernisation following the war.

In Papua New Guinea, there was a new urgency for reconstruction and development, but construction of railways to provide the basic infrastructure and institutional base for a modern society was given little attention. It was generally believed that roads and air transport would help propel the colony into the modern era. Nevertheless, railways continued to play a minor role in agricultural development and the establishment of large-scale mines. This chapter covers some 20 railways established in PNG in the period 1946 to 1975.

Decolonisation

The post-war era brought a new awareness that colonised peoples had a right to independence and self determination. In Papua and New Guinea, economic development was directed by the interaction between internal factors and the values and policies generated in the external political arena. The period saw the emergence of a new generation of Papua New Guineans less in awe of the Australians and eager to participate more equally in the post-war reconstruction.

Australians came out of the war experience with closer ties to her northern neighbours. A new deal for Papua and New Guinea was proclaimed in a 1945 policy statement by the Minister for Territories, Mr EJ Ward, which has often been quoted as the Australian charter for post-war New Guinea^{1/}. The program for rehabilitation and development would have regard to “the moral and material welfare of the native inhabitants and the strategic importance of the area to Australia.”

Administration in New Guinea and Papua had been amalgamated in 1942 under the Australian New Guinea Administrative Unit (ANGAU). With the Japanese surrender on 6 September, 1945, ANGAU became fully involved in repatriating prisoners-of-war and the local population. ANGAU continued its control until June 1946, when both territories were embodied in the *Papua-New Guinea Provisional Administration*. In December 1946 the United Nations granted a Trusteeship over the Territory of New Guinea to Australia^{2/}. A single administration for the Territory of Papua and New Guinea was established with its headquarters at Port Moresby. In contrast to the low levels of budget support provided between the Wars, Australian government grants increased markedly from 1946 to support development and public service expansion.

The Australian government prepared plans for massive increases in assistance in education

^{1/} Jinks, B, Biskup, P and Nelson, H, *Readings in New Guinea history*, Sydney, Angus & Robertson, 1973, p. 324.

^{2/} *Ibid.*, p. 322.

and health to prepare the people of Papua New Guinea for self-determination. Political development, based on Western-style democracy was encouraged, initially through the development of local government councils. They were intended to overcome the problem posed by absence of suitable indigenous authorities and to “serve as institutions suited to the needs of Papuan society in a period of change.”^{3/}. By 1969 there were some 142 councils in existence, representing almost 2 million people. There were also optimistic hopes for cooperative societies.

But first, both the Administration and the commercial sector were faced with a massive task of rehabilitating infrastructure and getting the economy back on its feet. During the 1950's the light aircraft fields of the country were improved as the basis of inland transport, while flying boat services existed in the island's regions. The air control centre at Madang became one of the busiest in the world handling air freighter flights to the newly opened Highland centres such as Goroka, Kundiawa, Banz and Mount Hagen where Australian settlers and village farmers were rapidly building up an important coffee industry. Air travel became an everyday mode of travel to “Territorians” and increasingly, to Papua New Guineans. In towns and isolated settlements throughout the country, the airport provided the medium of social exchange with the outside world, just as the railway station had done elsewhere in the world.

Coastal shipping, dominated by Burns Philp & Company and Steamships Trading Company, remained the basis of coastal and inter-island transport. For coastal villagers and those living along the major rivers, traditional canoes continued to provide the main means of transport. However, outboard motors from the United States and Japan made their transport task much easier and faster. Nevertheless, the lack of technical skills and service infrastructure in rural areas meant that outboard motors were frequently unserviceable after a short life. Efforts were made to promote less sophisticated types of motors which might be more suited to PNG conditions in the 1970s, but the marketing power of multinational manufacturers held sway.

On land, the motor car and truck came to be seen as the desired means of transport and the symbol of progress, Road construction was rapid as Administration officials mobilised thousands of Highlanders with picks and shovels to forge feeder links to main centres. By the end of 1953 there was an embryonic road from the Markham valley climbing into the Eastern Highlands and across the Ramu-Markham divide, through the Goroka valley and onto Mount Hagen^{4/}. Along the coast, feeder roads came to ports, while inland they connected plantations and villages to government centres and airstrips.

In 1962, a United Nations mission led by Sir Hugh Foot visited Papua New Guinea. The Foot Report was critical of the gradualism of the colonial administration and recommended to the Australian Government that the pace of self-determination be hastened, that a national parliament be established, and that the existing Legislative Council should be expanded into a representative House of Assembly^{5/}. The recommendations were in accord with world-wide sentiment for decolonisation and independence.

In 1964 the first national election was held and, in 1968, the Administrator's Executive Council (AEC) was formed as the paramount decision-making body in Papua New Guinea.

^{3/} / Legge, JD, *Australian colonial policy*, Sydney, 1956, p. 219.

^{4/} / Nelson, H, *Taim bilong masta: the Australian involvement with Papua New Guinea*, Sydney, ABC Books, 1982, p. 73.

^{5/} / Report of the 1962 United Nations Visiting Mission to the Trust Territory of New Guinea, New York, 1962, p. 24-6.

Unlike a parliamentary cabinet however, the agenda of the AEC was limited: the Australian Minister for External Territories retained responsibility for decisions on some critical departments and functions.

In 1966 the World Bank sent its first mission to Papua New Guinea. It urged a shift from the gradualist policies of the Australian administration to a focus on areas with a high potential for economic development^{6/}. The mission recommended large infrastructure and agricultural projects to establish the economic base for Independence. Oil palm development was planned for West New Britain and, in 1967, exploration commenced for a giant copper mine on Bougainville Island. The report was criticised for its over-emphasis on European capital and management for agricultural development, its failure to address the issue of industrialisation and the lack of analysis of the institutional requirements to handle development tasks^{7/}.

By the late 1960s there was in-principle bipartisan support in Australia for Papua New Guinea to move to independence, though many in Papua New Guinea, especially in the Highlands, considered that the pace of change should be gradual. In 1969, Mr EG Whitlam, then Leader of the Australian Labor Party, visited Papua New Guinea and proclaimed that self-government would be achieved in 1972 and independence in 1976. Whitlam became Prime Minister of Australia in 1972 and thus provided impetus towards self-government and independence. However, it was Michael Somare's leadership and drive which successfully held politicians together in a National Coalition and led them into self-government on 1 December 1972, much sooner than generally had been expected.

In 1965, PNG's most ambitious transport infrastructure project was commenced, an upgraded road from Lae and Madang up to the Highland centres of Goroka, Kundiawa, Mount Hagen and Mendi. Eventually it would become a sealed highway from Lae through to the highlands moving up to 500 tonnes of produce and materials each day. As the road construction proceeded, the need for air services to isolated settlements was diminished and many airstrips were either down graded to charter services or closed completely.

Railways as infrastructure were rarely envisaged. Indeed, official reports continually stated that there were no railways in PNG. Railed transport, however, continued to find a role in construction and industrial applications.

Agricultural Railways

The traditional railways which provided transport in coconut plantations provided the main focus for rail operations in the post-War era. Burns Philp decided to rebuild the Choisel Plantation tramways on Soraken, Lindenhafen, Tinputz, Boau and Kunua plantations after the War. Salvaged and second-hand railway materials imported from North Queensland sugar plantations were used in this reconstruction. The pre-war operating pattern of ox-drawn carts hauling green copra to a central rail line was no longer appropriate as most draft animals had been killed and animal transport was regarded as outdated in an era dominated by the internal combustion (IC) engine. Accordingly, the new systems were laid to a grid-iron pattern through the plantations to enable labourers to lump bags of copra to the nearest rail line.

The longest serving plantation railways were on Soraken and Kunua plantations in north-

^{6/} IBRD, *The economic development of the Territory of Papua and New Guinea*, Baltimore, 1965.

^{7/} Schaffer, B, "Thoughts at Goroka", *New Guinea*, June/July 1965.

west Bougainville where swampy conditions and sandy soils meant that roads were difficult to construct. Consequently, these plantations were selected for railway reconstruction in 1951.

Railway lines were laid in a grid-pattern, 400 metres apart so that bags of green copra would be carried no more than 200 metres to the railway. The Soraken railway totaled 21 km in length, while the Kunua railway was 11.1 km. From 1957, at least three small Lister diesel-powered locomotives were imported from England to operate the railways^{8/}. The 7 hp 2-cylinder locomotives were expected to haul 2-ton loads up the 1 in 20 hill to Chula driers. Older Lister petrol locomotives were rebuilt with diesel engines in 1960, making two units available for each plantation. In 1962, 16 turnouts and 12 trucks were imported for extension of the systems. Additional 14 lb rail was imported in 1963 and 1964

By 1967 the Lister locomotives were experiencing maintenance problems and had long periods out of service. A major upgrading of the railways commenced in 1977 when two new Hunslet locomotives (B/N 7531-2/1977) were imported for the railways. These were standard Hunslet 43 hp, 3.5 ton diesel locomotives which were shipped on the *MV Olivebank* in March 1977. To upgrade the Soraken railway, 10,000 steel sleepers were imported, but the bolt spacing was incorrect and they were never laid. Consequently, the system deteriorated.

A report to the author on the Soraken railway in 1978 indicated the relationship between plantation labourers and the railway:

The only stories I was able to get from the people who have been working on the tramline are that they really liked working on it and that it was exciting and enjoyable to work on. The workers on the tramline have been careful... [and] there have been no accidents recorded since the tramline was laid^{9/}

Field inspections by the author in 1981 found the lines, particularly on Soraken, in poor condition. The Hunslet locomotives were too heavy for the light lines and bridges in the sandy conditions and were a major factor in their deterioration. Another factor was the decision to use herbicides to keep the lines clear rather than labour-intensive hand-cutting of grass, as this resulted in washaways under the lines. As tractors were introduced, they too contributed to the demise of the railways as they created deep ruts into which the tramlines subsided or clipped the ends of sleepers, dislodging them from the ballast.

Support for the railways varied between managers. Colin Disley (1976-77) laid concrete slabs under the points during his term to improve operations. Tim Whale, Kunua manager during a visit in 1981, considered that the tramline was much easier to maintain than roads and he was rehabilitating the system after a period of neglect. Roads took more space and generated bogs which required large quantities of fill. The railway system was also more robust than tractor-hauled road trailers as trucks could still be hand-pushed if the loco was unserviceable, but tractor break-downs meant that the transport system stopped. However, Mr Whale noted that a brief period of neglect under an unsympathetic manager could undermine many years of effort to maintain the railway as an effective transport system.

The plantations were purchased by New Guinea Plantations in 1982. The Soraken railway was lifted in 1984, to be replaced by roads. The conditions required roads 7 metres wide for dual-wheel tractors, compared with 2 metres for the railway, resulting in the loss of significant areas of production land.

^{8/} Choisel Company records. Locos imported in 1957, 1959 and 1962. Other reports indicate Lister locomotives were used pre-war.

^{9/} Letter, Francis Bougin, clerk at Soraken, 28 November, 1978.

The Kunua railway remained in service up to the Bougainville crisis of 1990¹⁰. The Soraken plantation buildings were destroyed during the crisis, but it is reported that railway equipment was still at Soraken in 1993.

Cutch and the Great Train Robbery

The Borneo New Guinea Mangrove Company established a pioneer factory in the swamps of the Kikori River Delta at Aird Hills to extract *cutch* (a tanning fluid from mangrove bark)¹¹. A short tramline (about 1300 metres) was built from the wharf to the factory. It carried firewood and the bark inwards, and cutch out for shipment¹². There was a small IC-engined locomotive which hauled flat trucks and hopper wagons over the line. By 1958 the venture had failed and the equipment was abandoned. Mr Keith Tetley, a local trader, collected rails to build a wharf and copra drier.

Steamships Trading Company (STC) eventually purchased the assets of the Borneo New Guinea Mangrove Company from receivers with the intention of using them at their Baimuru Sawmill. On arrival to collect their bounty, STC crews discovered its disappearance. Whereabouts of the railway equipment was soon discovered and the company took Mr Tetley to court, thus commencing the case of PNG's *Great Railway Robbery*¹³. Mr Tetley eventually won the case as there was no caretaker at the site and the rails were not on land belonging to the company, and therefore, they could be considered abandoned¹⁴. He is reported to have arrived at the Kerema Hall for the annual Christmas party pulling a toy train, much to the delight of those present. Steamships lost out, not only losing the rails and the money paid for them but also having to pay court costs.

Oil Palm Railways

With World Bank support, PNG's first oil palm project was initiated in the Talasea-Hoskins area of West New Britain in 1967. For the first time, PNG was growing a high volume plantation crop. In Malaysia and Indonesia the oil palm industry used railway transportation to haul the fresh fruit bunches (FFB) from the field. Oil palm also required a constant flow of raw material through the processing mill, including the sterilisation of fruit in pressure chambers, an application ideally suited to railed transport. Transport over rough roads and excessive handling of the fruit causes bruising.

The Mosa palm oil factory opened in July 1971. The company took the "quick fix" and chose road transport to haul oil palm bunches from the field. The bunches were transferred to rail at the factory. Initially 530 metres of 600 mm gauge railway track consisting of a balloon loop and three tracks through the factory were constructed to move oil palm bunches through the sterilisers at a constant rate¹⁵. This railway was operated by a 1.5 tonne, 12.5 hp, 4wDM Lister locomotive (B/No. 56115 of 1969) and there were 40 steel bins of 2.7 tonne capacity. The locomotive was unsuitable for the task due to oiled track and was set aside in 1974.

¹⁰ / James Rira, locomotive driver at Kunua, interviewed at Kavieng, September 1995.

¹¹ / *Pacific Islands Monthly*, November, 1950, p. 89.

¹² / N Nicklason, letter recalling visit to railway in 1954, 1 May 1978.

¹³ / *Black and White*, December 1966, p. 10-11; *South Pacific Post*, October 1966.

¹⁴ / *Post-Courier*, 16 April, 1993, K Tetley obituary.

¹⁵ / McKillop, RF, "Mosa Oil Palm Mill, West New Britain, PNG", *Light Railways* No. 69, 1980.

The oil palm project was highly successful, with yields well in excess of the planned capacity of the mill. A Kina 4.2 million expansion program to lift mill capacity to 10,000 tonnes of fruit per year was initiated in 1974. The original railway was replaced by a larger 700 mm gauge system with 1620 metres of track, including five sidings through the mill. Steel hopper wagons with a capacity of 2.5 tonnes of fruit are propelled through the mill by conventional wheeled tractors.

With the successful establishment of an oil palm industry in the Mosa area, further mills have subsequently been established, each with a small rail system to transport fruit through the factory. These are described in the following chapter.

Public Railways

The construction of railways by the government was not a priority in post-war Australia. Nevertheless, the PNG Administration operated a short railway at their Bulolo sawmill and gave consideration to construction of a public light railway in Sepik District.

In the late 1950's, rice growing was promoted to village farmers in the densely populated Maprik area of Sepik District. A rice mill and base for agricultural staff was established at Bainyik. Transport to this isolated inland area was via the Sepik River to Pagwi, thence over a 56 km road which was difficult to maintain.

In December, 1959, the District Commissioner at Wewak proposed the construction of a 2 ft gauge light railway over the route using second-hand materials from Queensland canefields^{16/}. Field staff anticipated that such a line could be built for 50,000 pounds, but Public Works officials in Port Moresby estimated that the line would cost in excess of 200,000 pounds. Their report noted that a road would be no more costly than the railway and that Queensland canefield railways handled far greater tonnages than that offering to Bainyik. A request for second-hand rails was made to the Colonial Sugar Refining Company in April, 1960. When CSR responded in the negative, the Director of Public Works urged construction of a second-class road rather than a railway.

The administration was also involved in forestry at Bulolo where there were natural stands of klinki pine. Klinki and hoop pine plantations were established post-war and a large government-owned sawmilling and plywood factory was opened in Bulolo town. Logging was undertaken by bulldozers and sniggers, with logs being brought to the mill by road transport. However, the first Bulolo sawmill established in 1946 had short railway lines running from the mill to the dressing and joiners shop building^{17/}. There were two parallel lines, about 150-200 metres in length, to bring timber to the planing machines. Light rails from war disposals were used with six hand-pushed trolleys. There was also a 200 metre line from the mill to the sawdust heap. These lines were taken up about 1966.

Mining and Construction Railways

Years of mineral exploration finally brought positive results in 1967 when work commenced on the giant Panguna Copper Mine in Bougainville Island. It was the largest enterprise in the country, employing 8000 workers and contributing some 17 per cent of the PNG Government's internal revenue. The mine was developed as a large open-cut operation using heavy road trucks to move ore to the mill. There were, however, some rail operations.

^{16/} PNG National Archives, Access 36 PWD Box 6211 File 60/3/8/2

^{17/} Low, LJ of Bulolo, letter, April 1984.

In order to test the extent of the Panguna copper deposits, Dillingham Construction commenced drilling of mining adits in the hills behind Arawa Plantation in 1967^{18/}. Two 610 mm gauge lines ran into horizontal adits into the ore body: the Panguna Adit of 1600 metres which operated between August, 1967 and October, 1968, and the Western Adit of 2600 metres, between May, 1968 and October, 1969^{19/}. Three small *Gemco Traminer* battery-electric locomotives and Granby side-dump wagons were used on the Panguna Adit, while there were four locomotives used on the Western Adit line, including one of the former units.

Construction of the first phase of the giant Ramu Hydro-Electric Scheme to provide power to New Guinea mainland centres commenced in 1972 at Yonki in the Eastern Highlands District. Hyundai Construction was awarded the contract for the construction of a 2.4 km tail water tunnel and they used a 914 mm gauge railway and underground locomotives for this work^{20/}. There were two underground diesel-hydraulic locomotives^{21/}. The tunnel was completed in 1976.

Missionaries

The European mission enclaves at Ulanona, Vunapope and Marienberg continued rail-based logging operations into the post-war era. These lines are covered in Chapter 2.

Several mission-based entrepreneurs established short railways post-war. At the Marist Brothers Asitavi mission on Bougainville a light rail line was built by Brother Ansgar to carry timber from the sawmill to the wharf^{22/}. There was also a line from the mill out into what is now the farm at Asitavi where the logs for the mill were cut.

At Tsiroge Catholic Mission on Bougainville, Brother Pius constructed a 200 metre 610 mm gauge tramline from the wharf to his workshop in 1950. It used war surplus, ex-Japanese equipment and rails that the Japanese had lifted from Soraken to Chabai^{23/}. The railway originally consisted of a mainline which ran from the wharf to the carpenters shop about 200 m directly inland, with a branch to the mechanics workshop. The points caused many problems with the wheels jumping the blades and frogs of the point and it was replaced with a 6-foot turntable constructed by Brother Pius from old Japanese material. still. The line remained in use until the Bougainville crisis of 1990 with two hand-pushed trucks used for carrying engines from the workboats to the workshop for maintenance and return.

At Mabiri plantation, near Arigua on Bougainville, a narrow-gauge line was built by Br Ansgar from the wharf to a store shed and out into the plantation^{24/}. Br Ansgar tried, in conjunction with Mr Mack the manger at Kurwina, to link the two tramlines across the Mabiri River.

^{18/} / *Bougainville Copper Bulletin*, Oct. 1967, Vol 1 No. 1, p. 2

^{19/} / Douglas, B, "Mine tramways at Panguna", *Light Railways*, No. 64, p. 28.

^{20/} / *Post Courier*, 1 December, 1973, p. 111.

^{21/} / *Highland News*, Vol. 3:2, 11/1/73, p. 1

^{22/} / Leo Hannett, interview, Port Moresby 1995.

^{23/} / Interview Brother Pias, 1983

^{24/} / Leo Hannett, interview, 1995.

At Marist Brothers Tubiana mission, near Kieta, a 2 ft gauge line, about 100 metres in length, ran from the wharf into the store shed. It originally ran through the store to a workshop. When visited in 1982, the tramline was no longer in use. Two rail trucks were purchased by the author and moved to Sunvahoara. One was restored and the other had the journal removed to restore a skip truck from Chabai. One had an Orenstein & Koppell wheelset of 600 mm gauge which is believed to have come from Numa Numa Plantation. The restored truck was taken to Buin and then to Toniva. Its present situation is unknown.

On the north coast of West New Britain, Father Birkmann built a light railway in 1966 from a copra shed at Kaliai mission, through Taveliai village, to a landing place at the far end of the village²⁵. He used rails and a set of wheels from the Ulamona logging line. The wheels were used to build a trolley, which was poled along the line. The line operated in the north-west season when ships had to anchor some distance from the copra shed.

At Suassi in the Papuan Highlands, the London Missionary Society used a short tramway for construction of an airstrip. The local missionary, Bert Brown, arranged for carriers to bring in two sets of rail wheels, weighing 90 lbs each, and eight lengths of rail. A one-ton wooden truck was built by the station using fish tins as bearings. The wagon was pushed back and forth along 60 ft of track, which was moved as the airstrip was made.

Urban Development

Post-war development in Papua New Guinea saw the establishment of the first significant towns at Port Moresby and Lae. Their planning was influenced by current trends in Australia.

Australian cities had been shaped by the electric tram and suburban railway which provided efficient public transport services. Post-war urban development saw a dramatic swing away from public transport to the provision of infrastructure for private cars. The structure and character of cities was dramatically changed as the space requirements for cars generated urban sprawl²⁶. Much of the urban landscape was taken over by cars, parking lots and freeways, resulting in the more sprawling and energy-wasteful cities. As cities became more car-based and spread out, individuals needed to travel further to work and other exchange opportunities²⁷.

The shift from public to private transport also had important implications for the function of the city. Public open space for exchange became usurped by the private interest of the motorist for movement and storage of his vehicle²⁸. Travel in private cars restricted the traditional social exchange of the city as motorists also assumed new power and aggression over pedestrians.

These trends were to impact on the fledgling Papua and New Guinea towns. These were

²⁵ / Fr Birkmann, information provided via Sister Mary Ruth, letter, 7 August, 1981.

²⁶ / Newman, P and Kenworthy, J (1989), *Cities and Automobile Dependence - An International Sourcebook*, Gower, Aldershot.

²⁷ / David Ebkwicht, *Towards an Eco-City: Calming the Traffic*, Sydney, Envirobook, 1992.

²⁸ / Ian Manning, *The Open Street: Public Transport, Motor Cars and Politics in Australian Cities*, Sydney, Transit Australia Publishing, 1991, p. 50.

designed by Australian planners eager to apply the latest car-orientated designs to the new frontier. Suburbs in Port Moresby and Lae followed similar patterns to those in Canberra, Darwin or Townsville. But car ownership was largely restricted to the privileged expatriate community. Papua New Guineans were left to fend for themselves as pedestrians or consumers of poorly conceived and supported public transport services. In Port Moresby a bus company provided non-timetabled services between the main residential areas and work places.

Counter views on the importance of rail-based public transport were put forward in the 1970s. The danger of road-based transport and the potential role of electric, light rail systems in Port Moresby emerged on the public agenda in 1974²⁹. The following year, the Commission of Inquiry into the Rationalisation of Imports investigated the economics of an electric light rail public transport system for Port Moresby³⁰.

The concerns were also expressed by national politicians. In 1974, opposition leader Tim Ward claimed that PNG had become a road-oriented economy with unsustainable reliance on imported fuels³¹. He put forward a *Railway Plan*, with electrified lines from Port Moresby to Marshall Lagoon, Kapakapa, Kemp Welch, Hood Point and Cape Rodney, and from Ok Tedi to Port Moresby. Mr Ward claimed that railways would steer development away from existing ports of Port Moresby, Milne Bay and Oro Bay. The Plan also sought to tap PNG's hydro-electric potential.

²⁹ / C. Shoebridge, "Trams in Waigani, Move people not vehicles", *Post Courier*, 7 October, 1974, p. 2.

³⁰ / *Post Courier*, 11 March, 1975, p. 8

³¹ / *Post Courier*, 24 October, 1974 p. 3.