

## 4. MANDATED TERRITORY

### *Australian Occupation*

In September 1914, an Australian Expeditionary Force captured Rabaul and German New Guinea became an occupied territory. At the post-war Paris Conference, the Australian Prime Minister put forward an argument for the annexation of the German colony on strategic grounds. It was agreed under the League of Nations Covenant that that Australia would administer the territory as a “C” class Mandate. This provided Australia with responsibility to take charge of the “spiritual interests [of the natives] and their development to a higher development of culture”<sup>1/</sup>. However, Australia had its own internal problems to address and the new external responsibility was seen as a burden on the available resources for development at home. The administration for the Mandated Territory of New Guinea, established in May 1921, was expected to operate without external subsidies from the colonial power, in marked contrast to Papua and the former German administration<sup>2/</sup>.

German plantations and trading stations were expropriated and war reparations paid to Australia to help pay for the cost of the war. As a consequence, expansion and maintenance of plantations was stifled until the long process of registering assets, tendering and transferring ownership was sorted out. The dynamic economic expansion which characterised the latter period of German colonial administration stagnated as a result of this expropriation process.

An Expropriation Board was established to administer the dispossession of German properties and their transfer to Australian owners. Some 268 plantations, 20 large stores, workshops, shipping facilities and other facilities were subjected to the expropriation process<sup>3/</sup>. Plantations were sold to Australian soldier settlers, most of whom had little knowledge of or aptitude for agriculture in the tropics. WR Carpenters, an offshoot of the NGK from Western Samoa and Fiji which established an Australian base, bought out most of the NGK holdings.

The Australian trading company Burns Philp (BPs) had established a subsidiary, Choisel Plantations, to establish plantations on Bougainville because the German administration had opposed their entry. BPs took over many former German trading businesses. The other main trading firm in Papua, the BNG Development Company, was precluded by its charter from taking advantage of expropriation to expand into the Mandated Territory. Soldier settlers who had taken up plantation properties soon faced declining commodity prices as the world economy slid into the Depression and became indebted to their suppliers. BPs took over many of these plantations at this time.

In 1922 a solitary prospector *Sharkeye* Park found gold on Koringa Creek in the Bulolo area.

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<sup>1/</sup> Eggleston, FW, “The Mandate and the Australian People” in FW Eggleston (ed), *The Australian Mandate for New Guinea*, Melbourne University Press, 1928, p. 7.

<sup>2/</sup> Piesse, EL, “Financial relations of the Territory of New Guinea with the Commonwealth”, in FW Eggleston, *Ibid.*, p. 43.

<sup>3/</sup> Spicer, JA, “The expropriation and sale of German plantations”, in FW Eggleston, *Ibid.*, p. 37.

The field was a rich one and attracted miners, but the journey into the remote location through inhospitable country was a major problem..

By the 1930s, the Mandated Territory had a foreign population of 4500, four times that of Papua, of whom 1000 were Chinese and 400 German. Some 26,000 New Guineas were indentured labourers, two and a half times that of the southern colony.

It was still a frontier territory, where men were driven by a quest for gold and spirit of adventure. Among the foreign population, men outnumbered women by three to one. A vast, unknown inland was still being explored, with the administration opening its first Highland patrol post at Upper Ramu (later Kainantu) in 1932.

As in Papua, the administration oscillated between competing extremes for development policies. The planters argued that the policy of “providing a book education” was a waste of money and:

the only real education available to the native at present is provided in the homes of the colonists, in the workshops, on the ships, in the Christian Missions, and particularly on the plantations and trading concerns of the planting community.<sup>4/</sup>

Others argued that the “native” must be compelled to work and grow crops for their advancement. From this perspective, recruitment of male villagers for plantation labour was seen as an anachronistic policy to maintain “plantation fodder”<sup>5/</sup>. The outcome was conflicting policies which sought to keep the mass of people alive in their villages with as little interference as possible, while at the same time supporting labour recruitment to keep plantations operating. In practice, the need of plantations for labour dominated over support for *peasant proprietorship*.

There was also inherent contradiction over policy toward Asiatic immigration. Under the German administration, Chinese, Javanese and Japanese labourers had been introduced. The Australian military administration treated all Asiatics with similar status to Europeans, but under the Mandated administration, the Australian Government applied their White Australia policy<sup>6/</sup>. Further Asiatic immigration was restricted, thereby making plantation development dependant on local indentured labour.

### ***Rabaul Tramways***

Rabaul, the main town and administrative centre, was served by the 750 mm gauge tramway system developed by the German trading companies (Chapter 2). These properties, including tramlines, were included in the sale of expropriated properties in 1922<sup>7/</sup>. The new owners continued to use the tramlines for the transport of goods to and from their warehouses.

The Australian administration commenced construction of a new tramline, 2.14 km (1.5 miles) in length from Rabaul to Rapindik near Matupit, the site chosen for the new Native

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<sup>4/</sup> “Statement by New Guinea Planters’ and Traders’ Association to the Commonwealth Government”, in FW Eggleston, *Ibid.*, p. 60.

<sup>5/</sup> Roberts, SH, “Racial and labour problems”, in FW Eggleston, *Ibid.*, p. 78.

<sup>6/</sup> *Ibid.*, p. 83.

<sup>7/</sup> *New Guinea Gazette* No. 33, 30 May 1922, p. 159.

Hospital and police and native compounds, in 1922<sup>8/</sup>. For this line, they selected the closest Imperial equivalent of the German street tramway gauge, 2 ft 6 in or 762 mm) gauge. It was proposed to extend it through the town to link up with a new wharf site.

Tenders for the supply of petrol locomotives and rolling stock for the new line were called in Australia in late 1923<sup>9/</sup>. A small Muir Hill locomotive was obtained for the line, probably in 1924. Few details of the locomotive have been located. However, the English firm Muir Hill built small narrow-gauge contractor's type locomotives<sup>10/</sup>. Their 4-ton, 2-axle locomotive was powered by a Fordson four cylinder engine running on paraffin (kerosene). It had a patent two speed gearbox (2.5 and 7 mph), with reverse and synchromesh.

The initial line construction was apparently unsatisfactory, for the tramline was rebuilt and extended to serve the new "native hospital" under construction at Rapindik in 1927<sup>11/</sup>. The hospital was finally transferred to the new site on 21 November, 1929. With this transfer, the administration commenced regular passenger services over the railway<sup>12/</sup>. Papua New Guinea's only public railway passenger service ran to the following timetable:

	Leave old Hospital	Return Rabaul
1	0700	0755
2	0930	1025
3	1115	1200
4	1600	1655

The locomotive was under the care of a Chinese engineer. There was a passenger carriage and at least one bogie flat truck for freight.

In January, 1923 the former NDL wharf at Rabaul and its tramline was damaged by fire<sup>13/</sup>. As a temporary measure, Malaguna coaling wharf was upgraded by the Administration with a 2 ft gauge tramline. Plans were announced to construct a new wharf midway between the former wharf and the coal wharf. This was built in the 1930's.

Tenders for the NGK wharf in 1926 list two tracks of 762 mm gauge tramline<sup>14/</sup>. The wharf was purchased by WR Carpenters, while Burns Philp purchased the Malaguna wharf. The old NGK wharf was partially repaired by 1931<sup>15/</sup>.

<sup>8/</sup> / *New Guinea Gazette* No. 40, 15 September, 1922, p. 194; No. 65, 15 August, 1923, p. 357; *Mandated Territory of New Guinea Annual Report* (MTNGAR), 1923-1924, p. 45.

<sup>9/</sup> / *Sydney Morning Herald*, 1 December 1923, p. 3.

<sup>10/</sup> / *The British internal-combustion locomotive, 1894-1940*. Dimensions of the Muir Hill locomotive were length 9 ft, height 5 ft, or 7 ft 6 ins with cab, width 3 ft 6 ins, wheel base 3 ft 2 ins wheel diameter 20 ins.

<sup>11/</sup> / *Rabaul Times*, 5 August, 1927

<sup>12/</sup> / *Rabaul Times*, 23 November, 1928

<sup>13/</sup> / MTNGAR 1922-1923, p. 47.

<sup>14/</sup> / *Rabaul Times*, 22 October, 1926.

<sup>15/</sup> / *Pacific Islands Monthly*, December 1931. Photo on p. 2 shows rebuilding.

Another line was built from Ah Tams Wharf at the north of the harbour to a copra store. In December, 1929, a major fire destroyed this wharf and copra store then leased to WR Carpenters<sup>16/</sup>. Following this fire, Carpenters established a new facility at Toboi, some 1.5 km west of Ah Tams. A tramline was built to carry copra from the wharf to the new storage sheds<sup>17/</sup>. Bogie wagons were hand-pushed on the tramway and from 800 to 900 tonnes of copra could be handled per day. Field observations indicate that the tramway was constructed to 2 ft (610 mm) gauge with double track on the wharf.

Although serving an important role in trade and commerce and providing transport for New Guineans, Rabaul's tramways were given little status by the European elite. Their mouthpiece, the *Rabaul Times*, inevitably referred to the system with sarcasm. In 1928 it boasted that Rabaul had "more cars per head of population here than anywhere else in the world"<sup>18/</sup>. Presumably only Europeans were counted in the *Times*' version of civilisation. Their authority was challenged on the 2 January, 1929 when Europeans awoke to find all workers on a well organised strike. The event provoked outrage in the columns of the *Times* which described the strike as a mutiny and called for tough action against the ring leaders<sup>19/</sup>.

Tolais remember the tramway system more positively. Haileen recollects:

The tramline at Rabaul extended from Rapindik to Malaguna following the present roads - Sulphur Creek Road, Mango Avenue, Malaguna Road and some of the roads that do not follow the checker board pattern. The line along Namanula road proceeded to the Government houses at the top of Namanula Hill and also to the Police Barracks.<sup>20/</sup>

On 29 May, 1937 Vulcan and Matupit, two small volcanoes, one each side of Rabaul Harbour, erupted showering ash over the town. Most of the population was evacuated by ship, but some 500 people perished. There was extensive damage to property, particularly in the Rapindik area. Although roads were quickly cleared, most of the tramway was abandoned and only the wharf lines remained in use. It was decided to move the capital to Lae.

The Rapindik locomotive and rolling stock were put up for sale in October, 1937, while tenders were invited for the purchase of 10 light railway trucks in November<sup>21/</sup>. Mr FV Saunders of Kavieng purchased seven of the latter trucks and a quantity of rail. The Rapindik locomotive and rolling stock failed to find a buyer and were readvertised in 1940. By 1942 the move to Lae was almost complete.

## **Planters**

The German regime had established a strong plantation base by 1914. Transport was provided by 600 mm gauge *feldbahn* or light railways. Those which were clearly established in German times are covered in Chapter 2. With expropriation and the further development of plantations by Australian companies, additional light railway systems were established on

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<sup>16/</sup> / *Rabaul Times*, 20 December, 1929

<sup>17/</sup> / Gash, N, and Whittaker, J, Pictorial History of New Guinea

<sup>18/</sup> / *Rabaul Times*, 30 November, 1928

<sup>19/</sup> / *Rabaul Times*, 4 January 1929.

<sup>20/</sup> / Haileen, interview Rawa Plantation, Bougainville, 1980.

<sup>21/</sup> / *New Guinea Gazette* No. 504, 15 October, 1937 p 38; *Rabaul Times*, 5 November, 1937

a number of plantations.

Australian plantation railways were built to 2 ft (610 mm) gauge. Tramway materials were imported from the English firm of Robert Hudson for the Choisel-operated plantations in the 1920s. There are references to the use of small IC-engined locomotives on several of the lines during the 1930s. These were small 2-ton locomotives with 7 hp petrol engines built by RA Lister and Company of England, for whom Burns Philp were the South Pacific agents<sup>22/</sup>.

During the Mandated Territory era, most operations appear to have had a single railway line running through the plantation. Ox-drawn carts hauled green copra from the field to the railway, over which it was then transported to the copra driers. Dried copra was usually transported from a central storage shed to the wharf for shipment.

### **NW Bougainville Plantations**

**Soraken plantation**, established by Choisel Plantations in 1913, was using a light railway by the 1920s. A photograph of 1925 depicts a double tramline on the wharf with labourers unloading copra from a rail truck into a boat.

Reports of the railway operation before World War II are sketchy. Railway lines were removed or destroyed during the Japanese occupation.

The Choisel Plantations holding at **Kunua**, also on the north-west Bougainville coast, was established in 1925<sup>23/</sup>. It appears that 2 ft gauge tramlines were established from this date using equipment supplied by Robert Hudson. Railway lines were removed by the Japanese during the war.

### **NE Bougainville Plantations**

**Baniu plantation**, owned by Choisel, had a light railway system, at least 9-10 km in length, through the coconut plots. It was built pre-war, although the establishment date has not been identified.

The terrain was rugged for rail operations. Although one section of the railway operated on a relatively flat plateau, another section ran down from the plateau into the rougher area of the plantation. The line wound around and down a ridge from the plateau into a valley where it branched several times and crossed the creek in at least 3 different places. Grades of up to 1 in 20 with considerable earthworks were necessary to negotiate these ridges. Embankments about a metre high took the line to bridges over the creek. Part of this line ran down to a landing on Baniu Bay.

A small Lister locomotive hauled trucks of green copra from the field to the driers, then the dried copra onto the store. Father McConvil travelled on a hand-pushed trolley on the tramline during his escape from the Japanese about Christmas 1942<sup>24/</sup>.

A feature of the railway was the use of concrete sleepers. Although the lines were removed in the 1960s, many concrete sleepers and a large iron bridge (damaged) remained when the site was inspected in 1982.

The Choisel-operated **Teopasino Plantation** 15 km south of Tinputz had a light plantation

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<sup>22/</sup> Letter, RA Lister Australia, 21 March 1984.

<sup>23/</sup> *Rabaul Times*, 3 July, 1925.

<sup>24/</sup> Fr McConvil, personal communication, Chabai, 1983.

railway, 4.1 km in length. It was established pre-war<sup>25/</sup>. Oral history recollections indicate that the railway operated in conjunction with ox-drawn carts to haul green copra to the driers<sup>26/</sup>. Rail trucks were fitted with high sides for the green copra and were hauled by a small petrol locomotive, probably a Lister. A substantial bridge was built to cross the river. The system was pulled up in the 1960s and the rails are reported to have gone to Soraken<sup>27/</sup>. The extensive earthworks remain through the plantation.

### Central Bougainville

**Arigua plantation** managed by Choisel Plantations and **Kuwina plantation** managed by Burns Philp were linked by a common light railway line. The line, served Arigua with a branch line to the Kuwina bungalow and labour complex<sup>28/</sup>.

One view of the operations on this railway during the 1930's are recorded in the writing of the then manager, Robert Stewart:

We had a small diesel engine which pulled flat-top cars on rails which were used for transporting green copra from the fields to the driers. All copra cut in the field was collected by bullock drays or the truck and then transported to the diesel train... A train load of copra was usually accompanied by boys who had finished their tasks for the day which, on account of the transport available, was four bags a day instead of three at Tenakau.

As the return journey by train to the driers was all down hill, it was not an uncommon occurrence for the train to be derailed when negotiating the curves. Sometimes the brakes failed and when this happened, the train would career down at a great speed, and if not derailed would eventually be stopped and derailed by buffers, installed near the driers. When this occurred there would be utter chaos, bags of copra and boys would be thrown in all directions but curiously enough, no one was ever seriously injured.<sup>29/</sup>

The locomotive was one of the early Lister units imported by Choisel Plantations<sup>30/</sup>. It could haul nine trucks on the line. There are no reports of post-war operations.

Buoi Plantation came into BPs ownership in 1928 when it was auctioned<sup>31/</sup>. Some 4 km of 2 ft gauge tramway are reported on the plantation. Wagons were hand-pushed and the line was still in use up to the Bougainville crisis.

### West New Britain Railways

Lindenhafen plantation on the isolated Kandrian coast of West New Britain came under Burns Philp ownership. In 1932, 8 km of light railway was in operation. The railway extend from the factory and kilns at the beach right through the middle of the estate to near section 11, where

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<sup>25/</sup> / Allied Geographical Section, South West Pacific Area (AGS SWPA), Terrain Study No. 41, Updated 24/5/1943. Area Study of The Mandated Solomon and The Shortland Islands p 25, 26, 35

<sup>26/</sup> / Interviews with local villagers, particularly Mr Hoagae of Yokomore village, 1983.

<sup>27/</sup> / One 2 ft gauge wheel and axle set was found with markings "Hadfields Best Toughened Cast Steel H.C.M."

<sup>28/</sup> / AGS SWPA, Terrain Study No. 41, Mandated Solomons and the Shortland Islands, revised 20/12/1942; Updated 24/5/1943, p. 24.

<sup>29/</sup> / Stewart. Robert, *Nuts to You*, --- p. 133.

<sup>30/</sup> / AGS SWPA, Terrain Study No. 41 p 24

<sup>31/</sup> / *New Guinea Gazette* No. 195, 29 February, 1928, p.1390.

it branched to serve sections 10 and 12<sup>32/</sup>. Another branch line served No. 6 block, thence into the bush to transport firewood for the factory and driers. These lines required major overhaul in 1932, suggesting they had been in operation for some time. A further branch had recently been constructed parallel to the beach to transport shingle for ballasting the main line. The seven trucks on the railway were pushed by hand.

In 1943, Allied intelligence reported 11 trucks on the plantation, each with a capacity of 1 ton of green copra<sup>33/</sup>. A *kiap* who visited Lindenhafen in 1955 reported seeing a steam locomotive housed in a shed, while the railway was operated by a home-built locomotive based on a Ferguson tractor<sup>34/</sup>. One manager is reported to have named "stations" after railway stations on the Sydney suburban railway system.

The track was in bad condition in 1978 and was lifted the following year. A small Lister-powered locomotive was transferred from Lindenhafen to Soraken at this time.

Bali Plantation on Unea Island in the Witu Group of today's West New Britain Province had a railway from the copra driers through the plantation to Bali Harbour. The gauge was 2 ft 6 in (762 mm). No other details are known.

At some time following the First World War, the tramline on Meto Plantation on Garove Island, also in the Witu Group (see Chapter 2), was extended to the adjoining Ilia Plantation owned by the Catholic Mission, a distance of 1 km. The line served the factory and copra sheds at Ilia<sup>35/</sup>.

### Other Plantation Railways

**Neinduk plantation** on the Gazelle Peninsula had a timber-railed line which ran through the plantation to haul raw copra to the smoke house on the beach<sup>36/</sup>. There was a branch, running 4.5 km inland to a small sawmill owned by Bolton Brothers at **Namburg**<sup>37/</sup>. This led down to a wharf on the adjoining plantation to Neinduk. There were four flat-trucks which were loaded with timber and hand-pushed to the loading point on the beach<sup>38/</sup>. The grade allowed the workers to ride on the trucks as they free-wheeled for much of the journey.

Several plantation lines on New Ireland date from the Mandated Territory era. At Kalili Plantation a line ran through coconut groves to the copra drier, then down to a jetty. Trucks were hand-pushed on the line<sup>39/</sup>. In the post-war period, rails from the line were used for various applications on the plantation. A 610 mm gauge wheel set located in 1995 is said to

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<sup>32/</sup> / Extract from letter addressed to the Secretary, Lindenhafen Estates Ltd. Sydney from A.H. Gauld, District Plantation Manager, Lindenhafen, New Britain dated 17th December 1932.

<sup>33/</sup> / Allied Geographical Section, South West Pacific Area, Terrain Study No. 60, 19/7/1943. Area Study of Gasmata p 16, 23.

<sup>34/</sup> / Interview D Moorehouse, July, 1987.

<sup>35/</sup> / Allied Geographic Section, South West Pacific Area, Terrain Study No. 67, 1943, pp. 43, 52 and map 11.

<sup>36/</sup> / Letter M A Ferguson, 8 Aug 1979.

<sup>37/</sup> / Mandated Territory of New Guinea Annual Report, 1921-1922, p. 69-70

<sup>38/</sup> / Interview with Maria Bonnet's father at Hanahan, 1982.

<sup>39/</sup> / Interview with two old men in Mesu village, September 1995.

come from this railway. At Lossu plantation on the east coast, a buffalo-worked railway carried coconuts from the field to driers. Other lines are reported on Kimadon plantation on the east coast and Waramung plantation on Anir Island.

### **Forestry**

As described in chapter 2, German mission sawmills employed rail technology in their forestry operations. They were low impact operations which were able to sustain their venture over the long-term. By the 1930's, however, the availability of crawler tractors and motor trucks were bringing about basic change in forest logging operations. Contractors could now fell large numbers of trees quickly and move on to plunder new areas. This technology came to New Guinea, notably in the Bulolo area. Few new logging or timber tramways were constructed in the Mandated Territory.

A small sawmill operation was established by the New Britain Timber and Mercantile Company Ltd in 1926<sup>40</sup>. A steel-railed line, half-a-mile in length, was constructed to serve the mill. The venture was unsuccessful and the receiver called tenders for the sawmill and railway in 1931<sup>41</sup>.

On Bougainville the Marist Brothers Catholic Mission established a sawmill at Tinputz. A narrow gauge railway was constructed for the transport of logs and timber in 1930. The line extended into the forest where the lumber was cut and placed on trucks and pushed to the sawmill<sup>42</sup>. It is reported that about 50 tons of rail for this sawmill (equivalent to 4 km of line) was lost at sea. Rails which went down with the MV *Raphael* off Teop Island 1934 were raised and used at Tearouki mission<sup>43</sup>. The line later served as transport from the wharf to store. A stationary steam engine was noted at the former sawmill site during a field inspection in 1975.

### **Mining Railways**

The gold finds of Edie Creek and the Bulolo area in the 1920's brought a rush of prospectors to the field. However, the fields were inland and supplies had to be transported over inhospitable country.

Carrier lines of up to 200 men were hired for the task. Carriers were able to handle only 20 kg apiece. It took two weeks for the journey, so half the load of each carrier consisted of food for the journey. Conditions were wet and slippery, while disease and accidents, as well as head hunting Kukukuku (a local tribe) took their toll on the carriers. Soon there was pressure for a railway to solve the transport task.

### **Bulolo Railway Proposals**

CJ Levien, the main driving force on the field, was the first to push for a narrow-gauge railway to Bulolo<sup>44</sup>. He saw that such a railway would not only bring in the equipment needed by the miners, but that back-loading of timber from the fine stands of klinki pine in the area would meet the costs of the investment. Levien also looked at road and air transport

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<sup>40</sup> / *Rabaul Times*, 11 June, 1926

<sup>41</sup> / *Rabaul Times*, 30 October, 1931

<sup>42</sup> / Mario Takasi, interview at Tinputz, 1983.

<sup>43</sup> / Rev A H Voyce, letter, 2 September, 1981.

<sup>44</sup> / CJ Levien, letter to director Wells, 6 April, 1925.



options from an early stage<sup>45/</sup>.

A government engineer, Wisdom, inspected the terrain in April 1928, and selected the Markham-Wampit-Bulolo route for a light railway or road<sup>46/</sup>. However, the Administration ran out of funds before a survey could commence.

Recognising that the government was unlikely to provide the necessary transport infrastructure, the mining companies began their own search for a solution. The Ellyou Corporation, backed by the massive Mining Trust of London, commissioned Broughton Jensen, a former railway draftsman, to prepare a plan for a railway to link the Bulolo goldfield to the coast<sup>47/</sup>. Jensen's initial proposal was for a 90 mile line down the Buang route at an estimated cost of 250,000 Pounds.

The Ellyou Corporation entered into negotiations with the Administration for the rights to construct the railway, rights to timber and water, rights to minerals in the right-of-way (1000 m wide) and the right to set freight rates<sup>48/</sup>. Negotiations continued over the next 12 months with little progress, until the Administration rejected rights to minerals and to set freight rates.

By 1929, the gold beds at Bulolo were assessed to be suitable for profitable dredging. The Ellyou board put pressure on local managers to undertake a survey for a light railway to establish the most favourable route from the coast to the field<sup>49/</sup>. This was completed in November, 1929 based on a route from Salamaua, along the Markham, then to Bulolo and Wau via Wampit. The proposed 2 ft gauge line was 166 miles (266 km) in length with many bridges and tunnels. However, the cost was prohibitive. Several alternatives were examined, including an aerial ropeway from the goldfields to link with a 45 km narrow-gauge railway to Salamaua<sup>50/</sup>.

With escalating costs and unsatisfactory negotiations with the government, the railway proposal spluttered to a halt. Levien looked to a quick fix solution which would by-pass the need to provide expensive transport infrastructure.

### **Lae Railway**

Mr Levien backed aircraft to handle the transport task. He formed the Bulolo Gold Dredging Company, ordered a new all metal Junkers G-31, the largest transport plane of the times, for Guinea Airways. He had a dredge prefabricated into parts of not more than 3-tons, the G-31 payload.

For the Bulolo Gold Dredging operation, a 1200 metre standard gauge (1435 mm) railway was constructed from the wharf at Voco Point to the Lae airstrip in 5 weeks during 1931<sup>51/</sup>.

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<sup>45/</sup> / Sinclair, J, *Wings of Gold*, Sydney, Pacific Publications, p. 44.

<sup>46/</sup> / Healy, AM, *Bulolo: a history of the development of the Bulolo region, New Guinea*, NG Research Bulletin No. 15, 196-, p. 34.

<sup>47/</sup> / *Ibid*, p. 35.

<sup>48/</sup> / Grabowsky, I, AMF 70, UPNG Library NG Collection, p. 246-248, conditions of Ellyou railway proposal.

<sup>49/</sup> / Sinclair, *op. cit.*, p. 55.

<sup>50/</sup> / *Rabaul Times*, 14 March 1930

<sup>51/</sup> / *Ibid*, p. 73; *Pacific Islands Monthly*, February, 1931, p.3; interview with Adolf Balse who supervised construction of the line.

Dredge components and other equipment were transported along the line for freighting to Bulolo in the Junkers G-31 aircraft. The railway was operated by a 10-ton self-propelled steam crane and the rolling stock consisted of a number of flat cars. The crane arrived in mid-1931 and was operational by August<sup>52/</sup>.

The airlift was the largest in the world to this time. By November the G-31s were lifting over 500 short tons a month and some 40,000 tons of material were carried between 1931 and 1942. In total, eight large dredges weighing 1500 to 2500 tons each were airlifted to Bulolo and assembled there for operation on the field. Lighters carried the goods from steamers to the Voco Point jetty<sup>53/</sup>. The locomotive crane lifted the item from the lighters and swivelled it around to the flat trucks behind. Lloyd Rhys described the scene in 1932:

Two steel barges and a hundred tons capacity steam lighter bring the cargo to the wharf. Here the chattering natives saunter, bustle when bustled, and with never-ceasing interest, watch the steam-engine which has been installed for landing machinery. Then comes into fussy action New Guinea's novelty - a broad-gauged railroad running from the wharf to the aerodrome.<sup>54/</sup>

The self-propelled steam crane was a fascinating technology to European and New Guinean alike. Ian Grabowsky recalled:

The loco crane was a perfect example of mechanical Heath Robinson nudity. When working, either lifting, lowering or swinging into place various cargoes, it belched steam from everywhere, but its glory was most apparent as it towed a dozen six-foot long trucks along a perfectly level railway. Lucas, the licensed qualified operator, was always amazed how pilots were able to judge distances so accurately when landing, whilst the pilots always marvelled how Lucas managed in later months to load 3-ton hunks of machinery into the frail aircraft without doing any damage to them.<sup>55/</sup>

In August 1932, an earthquake and subsidence occurred at Voco Point without warning as the crane was unloading cargo from the *Macdhui*<sup>56/</sup>. The wharf, steam crane and trucks collapsed into the water, taking the driver, *Trousers* Jim Lucas with it<sup>57/</sup>. Lucas got free within seconds and escaped, but his beloved steam crane, some 200 yards of railway line and 3 acres of foreshore were lost.

The wharf and the railway line were rebuilt closer to the airstrip, opposite the Cecil Hotel, and a 7-ton steam crane replaced the lost unit. The crane and new rolling stock arrived on the *Macdhui* on 6 October, 1932<sup>58/</sup>. The pace of operations picked up and crews worked double shifts moving the cargo from the wharf and fitting items into the confined space of the G-31's. Three rail branches were established at the aerodrome: one to the loading tarmac, one to the BGD freight shed and a third to a stiff-legged electrically-operated crane which

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<sup>52/</sup> / *Pacific Islands Monthly*, September, 1931, p. 2.

<sup>53/</sup> / Idress, IL, *Gold dust and ashes*, Sydney, Angus & Robertson, 1934, p. 244.

<sup>54/</sup> / Rhys, L, *High lights and flights in New Guinea*, UPNG Library A919.546, R479, p. 158.

<sup>55/</sup> / Grabowsky, *op. cit.*, Part 2, p. 46.

<sup>56/</sup> / *Rabaul Times*, 16 September, 1932

<sup>57/</sup> / Weston, AE, "Pre-War shipping, Huon Gulf, New Guinea", *Journal of the Morobe District Historical Society*, 3:1, July 1975, p. 42-52.

<sup>58/</sup> / *Ibid.*, p. 146.

handled heavy lifts onto aircraft<sup>59/</sup>.

A small petrol mechanical locomotive was imported from the US builder Brookville in 1932 (B/N 1704/1932) to assist with haulage of wagons from the wharf to the aerodrome, thus releasing the crane for lifting duties at the wharf<sup>60/</sup>. The 4-wheel, 2-ton, standard gauge locomotive was classified by Brookfield as their Model BFA.

Operations on the Lae railway came to a sudden halt in February, 1942 when Japanese bombing destroyed the Guinea Airways operational base and the railway<sup>61/</sup>. Photographs of the damage depict bogie flat wagons on the railway.

### **Salamaua Railway**

Salamaua, 28 km south of Lae, was an early base for the Bulolo goldfields as it had a safe anchorage compared with Lae. Diggers set out from here with their carriers for the new goldfields in the 1920s. An airstrip was constructed at Salamaua to service the field, but it had restricted approaches and was subject to flooding<sup>62/</sup>.

A light railway connecting the wharf with the airstrip, a distance of 2.5 km, was reported in early 1929<sup>63/</sup>. This line apparently fell into disuse. In 1933 it was proposed to relay the railway in association with a project to construct a new jetty<sup>64/</sup> and the line is clearly depicted in a 1938 photograph of the jetty.

In September, 1936, a contract was given to Mr BE Watson for maintenance of the Salamaua runway<sup>65/</sup>. A narrow-gauge light railway, some 2 km in length, was established to transport stone from a quarry to the airstrip. It ran parallel with and close to the runway for a distance of 700-800 metres and was used solely for airport maintenance<sup>66/</sup>. A number of tip trucks were hauled by a small petrol or diesel locomotive.

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<sup>59/</sup> / Cooke, J, *Working in Papua-New Guinea, 1931-1946*, Lara Publications, 1983, p. 219.

<sup>60/</sup> / details provided from Brookfield builders list by Ray Graf.

<sup>61/</sup> / *Courier* newspaper, 27 February, 1942.

<sup>62/</sup> / Grabowsky, *op. cit.*, 1929, p. 12.

<sup>63/</sup> / *Rabaul Times*, 18 January, 1929.

<sup>64/</sup> / Grabowsky, *op. cit.*, p. 130.

<sup>65/</sup> / *Pacific Island Monthly*, September 1936, p. 75.

<sup>66/</sup> / Allied Geographic Section, SW Pacific Area Terrain Study, No. 33, Salamaua, November 1942.

**Wau-Bulolo Railways**

The inland towns of Wau and Bulolo grew rapidly as miners were attracted to the goldfields. In addition to the huge dredges introduced by the Bulolo Gold Dredging Company to work the alluvial field, New Guinea Goldfields operated a number of mines. Their Upper Ridges and Golden Ridges Mines had light railways hauling ore from adits to crushing mills by 1938<sup>67</sup>.

**Kupei Goldmine**

A goldfield was proclaimed at Kupei, behind Kieta on Bougainville Island in 1930<sup>68</sup>. The Roman Catholic Bishop of Brisbane, Dr Duhig, established the Kupei Gold mine which had a narrow-gauge railway to haul ore from the adit to crushers<sup>69</sup>. The site was to be later developed as the giant Bougainville copper mine.

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<sup>67</sup> / P. L. Lowenstein, *Economic Geology of the Morobe Goldfield Papua New Guinea*, Volume 1, PNG Dept. Mines, 1982.

<sup>68</sup> / MTNGAR, 1929-30, p. 92, p. 262; *Rabaul Times*, 10 January, 1930.

<sup>69</sup> / Rev A H Joyce, *Peacemakers*, p. 49; Nelson, H, *Black White and Gold*, p. 264.