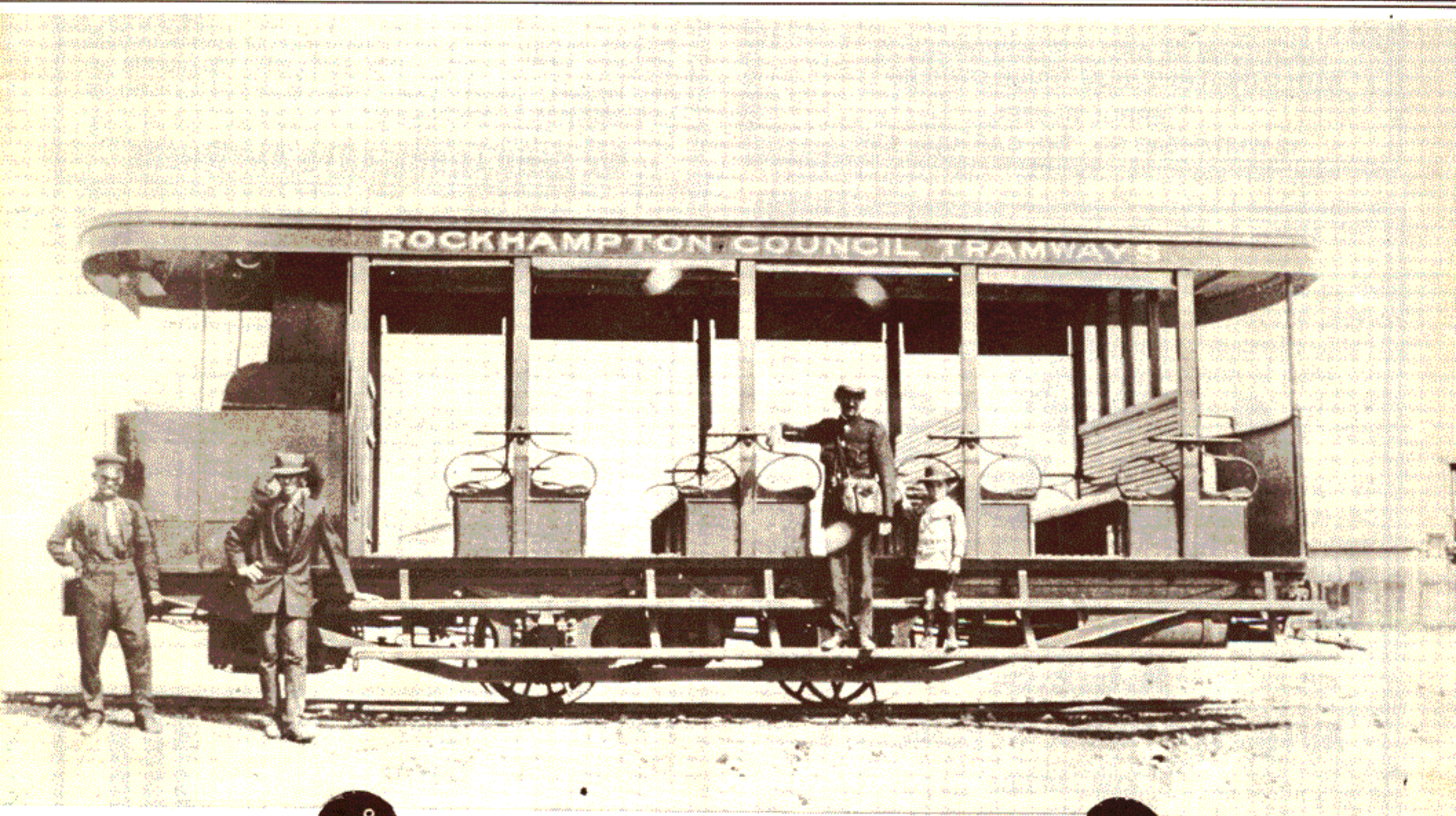


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Rockhampton's Unique
Purrey Steam Tram

Purrey Steam Tram

Rockhampton Queensland, ran the only Purrey steam trams in Australia and when the Purrey is recommissioned on the 5th June 1988, it will be the only one in the world.

Background

As early as 1875, horse drawn buses were operating in Rockhampton and after 1883, various proposals of electric and steam trams were presented and considered by the Council and private individuals. Nothing was decided until in August 1908 when a contract was let by the Rockhampton Council for Purrey steam trams. It seems strange that with the emergence of the motor buses at that time, the Council turned to steam but it must be remembered that the Purrey system was seen as a success in France, Italy, Spain, Portugal and the Argentine. Rockhampton was also a major rail head serviced by steam locos and it is suggested that the capital costs would be less with the Purrey system as compared to electrification. On the 5th June 1909, the Rockhampton Council began their urban steam tram service that continued until 1939 when buses alone continued the routes.

The service was started with two tram cars and two trailers. A further car was yet to arrive and another was being used as a ballast car. All the tram cars at this stage were purchased complete from the Firm of V. Purrey, Bordeaux, France. The trailers were manufactured by Brown Engineering, London. Later, five further tram cars were added where the bodies were built locally on Purrey's components. All ran on a 3' 6" gauge along a 6 1/2 mile track. The original track was the normal tramway girder type set on iron bark sleepers and covered to the level of the street. Only one part of the track has been removed and the old line has always been visible on some sections at various times.

General Description of the Units

The 'toastrack' type Purrey tram cars had four wheels.

The boiler and the driver were located on a platform on the front and the steam engine placed under the floor. The cylinders were forward and the chain drive from sprockets on each side of the crankshaft ran directly to the front driving axle.

Boilers

The boiler was a water tube type with a horizontal drum at the top and another at the bottom and equipped with super heating tubes. Much like a simplified marine boiler of that time. This was surrounded by a large casing and located on the front platform behind the driver and in front of the passenger compartment. The water feed was automatic. A float valve controlled the valve gear on a small steam water feed pump. They must have been reliable as no gauge glasses were fitted. A coke hopper fed the coke directly to the fire and the driver controlled the entry of fuel. The exhaust from the engine and

the feed pump were directed through the heating space to create total dissipation. The smaller cars (1 to 6) had a 8.5hp. boiler supplying steam to a 36hp. two cylinder simple engine. Cars 7 and 8 each had a 9.5hp. boiler supplying steam to a 75hp. four cylinder compound engine. Some Queensland Railways trials showed that steam could not be maintained on long runs thus it seems that the boilers were designed for frequent stopping to allow for the generation of steam. This marginal generation of steam meant that the burning of poor quality coke and using unsuitable water caused immediate attention and more maintenance. Until 1914, when better quality water was available, it is reported that on average, a tube needed replacement every day in one of the fleet. The superheater tubes blew regularly and had to be replaced every 6 to 8 months. The water tubes were

renewed every twelve months and the bottom drum replaced every two to three years. The pressure on all boilers was 240psi. which was the highest boiler pressure used on rails in Queensland. The Rockhampton Firm of Burns & Twigg Pty. Ltd. is constructing the boiler to be placed in the recommissioned Purrey.

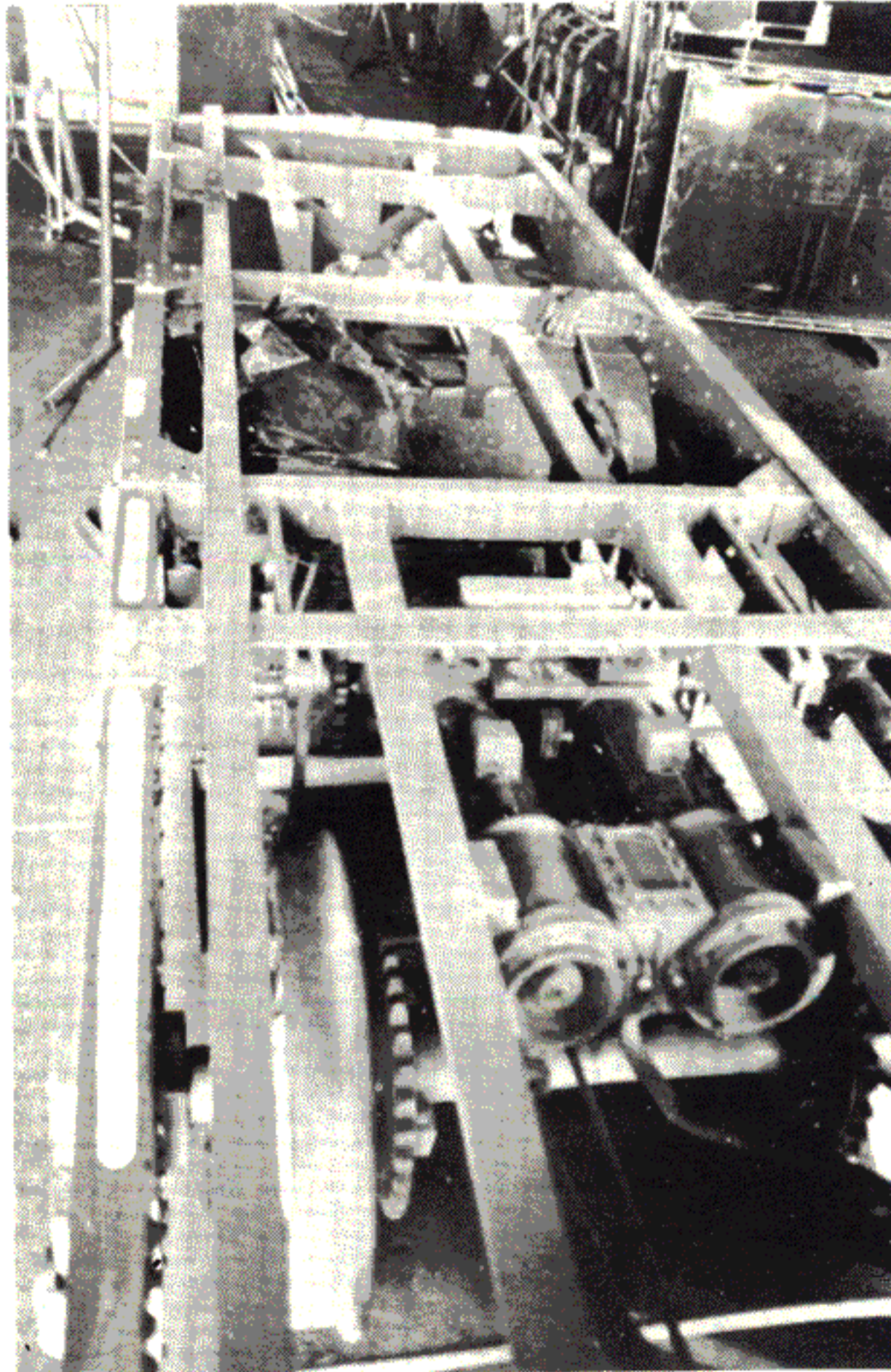
The engines

Cars One to Six had two cylinder simple engines with a 7" bore by a 6 3/8" stroke. Cars Seven and Eight featured a four cylinder compound with a 5 1/4" and a 7 7/8" bore with a stroke of 7 7/8". No. 9 had a four cylinder simple engine and one reference suggests that they operated 'as 2 sets of 2 in tandem'.

The compact simple engines had a common steam chest with side valves. Reversing was achieved by changing the stroke of the eccentrics by using wedges. Runners guiding these were controlled by the driver on the footplate.

Operating Problems

The shortage of rolling stock and units made a regular timetable difficult to maintain. Borrowings increased as more stock was purchased and a Frenchman experienced with this type of operation was engaged to supervise the



The purrey chassis complete with the new twin cylinder simple steam engine mounted above the front drive axle. Note one set of the two driving sprockets.

A Doug Press photo

service. The service, the track and the amenities improved and by 1911, three cars operated daily and the next year, a fifth car was added. In 1912, ten tram drivers were being employed by the Council. By 1916, the revenue met the running costs but not the capital borrowings. A sixth car was introduced into regular service in 1918 and the venture was now breaking even financially. It was estimated that an average of 12 passengers alighted for every tram mile run at this time. An extra fuel depot was established on the route and the coke hoppers were filled by the conductor.

Competition from buses and increased individual transport by 1922, brought about promotion of the service and the purchase of more units. The 1920's were the busiest years although revenue only met the running expenses. The 1930's saw a decline in revenue and losses by the Council. As early as 1931, concern over this is evident where the Council gained quotes for buses. An advisor was called in and after reviewing the situation, recommended that the present system be continued and savings in cost were suggested and implemented. From then till 1939, the service was gradually reduced as buses began to work the closed routes and operate close to the existing service lines. By 1937, it was evident that buses were a better alternative and a combined bus-tram service was implemented and in January of that year, it was decided to do away with the trams completely. The first of the ten Albion busses arrived in Rockhampton on the 15th April 1939. By the 26th of April, the buses were operating the tram

schedules using trams to assist at peak hours. On the 24th June 1939, the end of Carnival Week, all the busses were available and at 10.40pm., tram car No.6 and two trailers completed the last run.

Most of the rails were sealed over and at times appear through the bitumen. The buses proved to be a great success and the revenue after costs allowed some of the capital costs to be paid. It is ironical that by the 1960's, the buses were facing the same financial problems because of a gradual decline in revenue.

Accidents

1. 28th September 1913- Car No.6 with an open trailer derailed and capsized (due to excessive speed) killing one passenger and injuring four others where two were to die later.
2. 8th January 1919- Car No. 7 and a trailer collided with a loco tender and although the roof came off and a passenger was caught between the trailer and the tender, no one was killed.
3. 1928- a man attempting to board a moving tram fell and a trailer passed over him and he died.
4. 1929- a man tried to cross from a trailer to the tram when he slipped and fell and he was killed by the trailer passing over him.
5. Around 1929/30, a man was hit by a tram at night and was killed.

Restoration

Before 1982, the Rockhampton Branch of the National Trust had collected a number of Purrey parts from various locations throughout Queensland. July 1982, the Rockhampton Passenger Transport Manager recommended to the Rock-

hampton City Council (R.C.C.) that a Purrey steam tram be reconstructed. August the 23rd, the R.C.C. approved the project and appointed Mr. Doug Press, the City Transport Manager, to supervise the venture. The collected parts and \$4,000 made available by the R.C.C. began the task. A special Steam Tram Restoration Committee was formed and the project began on the 21st March, 1984 and launched officially on the 5th June 1984- celebrating 75 years of the R.C.C. involvement in public transport.

Since then, the R.C.C. has employed a tradesman in the construction and the excellent response by local manufacturing firms and suppliers who provided materials, service, skills and money, reduced the R.C.C. commitment to about \$70,000 of the \$250,000. The receipt of a Bicentennial endorsement of \$13,000 assisted greatly.

A number of parts have come to hand after restoration began- the front and rear bumpers were found under a tree root and a Purrey Lamp was located at a rubbish dump.

Locating the Engine

The trams were sold at auction in 1939 and one was purchased by the Handcock Brothers, sawmillers of Ipswich. They used it for years to move logs from the railway yards into the sawmill. When it became redundant, the body was scrapped and the engine stored under the mill floor where it became flooded at times. A machinery inspector noticed it and passed on the information to an A.M.R.S.Q. member who retrieved it in December 1980 on behalf of the Society. The Rockhampton enthusiasts heard of this and swapped it for a Crossley gas engine. The low pressure side of this engine was used as a casting pattern to make the simple twin engine that will power the restored Purrey.

In their 30 years of operation, the Purrey steam tram system in Rockhampton carried 40,619,924 passengers, ran 4,526,932 miles and collected £355,475 in revenue. On June 5th 1988, the recommissioning of the steam tram will extend this mileage and allow the Purrey to become an on going historical and relevant attraction in Rockhampton. ***

References: Australian Railway Historical Society Bulletin, No 440, June 1974; No.442, August 1974. The A.M.Q.R.S. Gazette and the Rockhampton City Council Literature.

The near completed Purrey in the Rockhampton workshops. Note the boiler and the bogey suspension.

A Doug Press photo.

