

Currumbin Creek Railway Bridge (former)

LHR0075

Place details

Address/location	Currumbin Creek
Title details	
Principle period(s)	1902 - 1961
City of Gold Coast division	13, 14
Other known names	Sarawak Avenue pedestrian bridge, Currumbin Creek pedestrian bridge, South Coast Railway Bridge No. 21
Area for protection	Bridge plus 5 metre heritage boundary
Place components	Bridge superstructure, abutments, location and height in Currumbin Creek
Place category	Bridge
Context	In-situ
Other listings	
Register entry date	5 June 2018

Statement of heritage significance

The former Currumbin Creek Railway Bridge is a place of local heritage significance for its historic importance, rarity, potential to yield information, class characteristics, technical achievement and special association as evidenced by, but not exclusive to, the following statement of heritage significance, based on criteria (a), (b), (c), (d), (e), (f) and (h) of the Gold Coast Local Heritage Register.

Criterion (a) Historic importance

The construction of the South Coast Railway Line was a critical part of the economic development of the Gold Coast and an important link between Brisbane and the New South Wales border. The remaining infrastructure associated with the South Coast Railway line, including the Currumbin Creek Railway Bridge, demonstrates the evolution of the state railway network on the Gold Coast and throughout Queensland.

The railway line was a result of a movement towards a new maturity for the Gold Coast region, then known as the South Coast. The provision of expensive rail technology signalled the region had moved into the modern age and that local influence of government and the need for public resources was coming to the fore.

The railway also influenced the development of the local economy. It opened up opportunities for hinterland farmers to move their goods quickly and more efficiently to markets in Brisbane and New South Wales. Rail was also instrumental in opening up tourism. Crowds of holiday makers and visitors used the train service to visit the safe southern Gold Coast beaches at a time when there was a growing interest in surf bathing. The greatly improved access provided by the railway presented economic opportunities for the seaside villages along the coastal strip as visitor numbers would double or triple the normal populations.

As one of the last remaining, intact pieces of the South Coast Railway Line infrastructure on the Gold Coast, the Currumbin Creek Rail Bridge is important in demonstrating how the past has shaped the present, particularly the influence that rail transport had on the early agricultural and tourism industry in the region, the resulting economic boom and shaping of the Gold Coast identity as one of Queensland's premier holiday destinations.

Criterion (b) Rarity

The Currumbin Creek Railway Bridge is one of many pieces of infrastructure built for the Gold Coast extension of the South Coast Railway Line between 1885 and 1903. There were numerous overbridges, sidings, stations and tunnels and many major and minor rail bridges were constructed across the rivers and creeks on the South Coast. Of all the rail bridges constructed for the South Coast line only the Currumbin Creek Railway Bridge remains extant.

The Pacific Motorway largely follows the route of the inland sections of the former South Coast Railway Line and the construction, and subsequent upgrades, of the motorway has resulted in the removal or demolition of the railway line and most of the associated infrastructure. Over time other pressures, such as residential and commercial developments, have led to the destruction of remaining infrastructure and evidence of the South Coast Railway Line.

The Currumbin Creek Railway Bridge is one of only three extant examples of infrastructure associated with the South Coast Railway Line remaining in the City of Gold Coast and the only remaining intact creek crossing bridge.

Criterion (c) Potential information

The Currumbin Creek Railway Bridge has the potential to yield information that will contribute to a greater understanding of the construction of the South Coast Railway Line and Queensland Government Railway bridges. It retains both original and early fabric as well as reconstructed fabric from various additions and alterations made to adapt the bridge from rail to pedestrian use. The earliness and rarity of this bridge, when combined with associated documentary evidence, allows for further research into the design, form, engineering features and materials of early twentieth century Queensland Government Railway steel bridge construction.

The intactness of the bridge provides the potential to contribute knowledge that will assist in comparative analysis of similar types of screw pile bridges that may have been constructed elsewhere in Queensland. There is also potential for archaeological material to be present at the site of the Currumbin Creek Railway Bridge. Archaeological investigations may reveal material culture evidence, both domestic and industrial, relating to the workers and construction of the bridge.

Criterion (d) Class Characteristics

The Currumbin Creek Railway Bridge demonstrates a particular class of Queensland Government Railway bridges constructed in the early twentieth century. Much of the original substructure fabric remains and the bridge is largely intact, providing important physical evidence of early twentieth century railway bridge design and construction in Queensland.

Two of the creek crossing bridges on the South Coast Railway Line were of the same design: Currumbin Creek Railway Bridge (known as bridge no. 21) was comprised of twenty-one 27 foot spans, (approximately 8.2 metres), with rolled-steel joists on screw pile piers, and; Tallebudgera Creek Railway Bridge (known as bridge no. 15) comprised of twelve spans with rolled-steel joists on screw pile piers. Tallebudgera Creek Railway Bridge is no longer extant.

Currumbin Creek Railway Bridge is a wrought iron bridge and many components were manufactured and imported from various parts of the world. The wrought iron joists are marked 'Earl of Dudley' and these were manufactured by the Round Oak Steelworks in England. The wrought iron girders are marked 'Carnegie' and were manufactured by the Carnegie Steel Company in the United States.

The survival of much of the original substructure fabric of this bridge illustrates the style, construction technique and use of materials for this type of screw pile railway bridge. The steel work used in the construction of the Currumbin Creek Railway Bridge demonstrates the use of steel imported from England and America for Australian engineering projects.

Criterion (e) Aesthetics

The Currumbin Creek Railway Bridge has been a recognisable part of the Currumbin Creek landscape for over 110 years. There is evocativeness in the longevity of the structure and location of the bridge. Today it is a visual reminder of past human endeavour and a past way of life.

The physical setting and location of the bridge is part of the story of the South Coast Railway Line and the development of the Gold Coast from a collection of distinct villages to the city it is today. The juxtaposition of the two aesthetic codes - the old, steel railway bridge with the modern, high level concrete highway bridge immediately beside - gives this place distinctive visual qualities and impact and a rare glimpse of an early twentieth century bridge side by side with an expression of late twentieth century bridge construction.

Criterion (f) Technical achievement

The Nerang to Coolangatta railway extension was one of the first railway lines in Queensland to use a day labour model for the construction period. This represented a new way to deliver large scale infrastructure projects, effectively removing the need to establish temporary work camps or provide semi-permanent accommodation for railway line workers. The success of the day labour model on this railway extension project ensured, in part, that day labour would be the favoured means of constructing railway lines in the state for the next thirty years.

Criterion (h) Special association with particular person or organisation

The South Coast Rail Line has a special association with the work of Queensland Government Railways. The decision to extend the railway from Beenleigh to the South Coast is of great importance in the history of the Gold Coast and made Queensland Government Railways not only part of the local economy, but also a noticeable part of the Gold Coast landscape, for over half a century. Huge numbers of local men and women were employed by Queensland Government Railways, from the early construction crews of the late 1880s, to the train crews, station masters/mistresses and station staff, fettling gangs and workshop employees that ran the rail until it closed in 1961.

The South Coast Rail Line and Currumbin Creek Railway Bridge is also associated with William Pagan who held several senior positions within Queensland Railways prior to being appointed Chief Engineer in March 1902. In 1911 Pagan was appointed Deputy Commissioner of Queensland Railways.

In 1917 William retired to Southport where he was elected as an Alderman on the Southport Town Council and served for five years. During his time with Queensland Railways, Pagan was responsible for the design of many railway bridges and the plans for the Currumbin and Tallebudgera Creek railway bridges carry his authorisation.

Image



Currumbin Creek Railway Bridge, 2017. Image courtesy of City of Gold Coast.

History

In the 1870s and early 1880s a railway link between Brisbane and the Logan and Albert district was considered by many as a necessary and logical step for advancing the economic development of the region. Railways were also considered a status symbol marking a regions or districts political maturity and advancement into what was considered a new age of technology.¹ Detractors, however, argued that a railway line linking the Albert region and the South Coast to Brisbane was an unnecessary distraction and too costly.

At the time the Commissioner of Railways, Arthur Orpen Herbert, was also not in favour of the proposal despite the Queensland parliament approving a survey of a coastal railway route to the New South Wales border.² It was considered that such an endeavour would prove to be too expensive given the number of waterways that required bridging and a belief that the regions navigable rivers and coastal shipping would undercut any potential profitability of such a railway.³ The district's small population and relatively modest amount of acreage under cultivation could not justify the expense.

Ultimately, though, the South Coast Railway was built. In 1881 the member for Logan, Mr Mclean, presented a motion in Parliament to build a railway to connect the districts of Logan, Pimpama, Coomera and Nerang with Brisbane.⁴ Although the motion was defeated, the following year the Minister for Works recommended that plans be approved for a railway to Logan Village and Beenleigh, branching at Bethania, to connecting the pastoral establishments of those districts with their principle market and providing reliable access to the timber resources of the hills behind those locations.⁵

In April 1885 the railway line from Yeerongpilly to Longlea was opened and by July the section from Yeerongpilly to Beenleigh was completed.⁶ Later extensions to the railway occurred, with the Beenleigh to Southport section opening in January 1889 and the Ernest Junction to Nerang section opening in July that year.⁷ The extension of the line to Southport, which became known as the South Coast Railway Line, allowed the town to boom as one of Queensland's major seaside holiday destinations.

Agitation for a railway from Nerang to the NSW border commenced even before the line to Nerang had been completed. At a public meeting held in December 1888 at Tallebudgera it was proposed that a railway follow an upper route via Reedy Creek, Tallebudgera and Currumbin to the NSW border.⁸ Despite the proposal being forwarded to the local member of the Legislative Assembly, with the request that he wait on the Minister of Railways for consideration, little support for the proposal was forthcoming from Brisbane. Public support for a southern South Coast Railway extension continued throughout the 1890s with observations that significant revenues could be made by the railway should a line connect the large south coast timber reserves, sheep and dairy farms of the Tweed, potential cane farms and other cropping operations with local mills and markets in Brisbane.⁹

Plans for the extension of the South Coast Railway from Nerang to Tweed Heads, along with plans for five other lines, were tabled in the Queensland Legislative Assembly on 30 November 1900.¹⁰ The route to be constructed generally followed the road south from Nerang to Reedy Creek where the road branched in two directions – one branch running to Burleigh and the other continuing on to Tallebudgera and then onwards across the border to Murwillumbah. From Reedy Creek, the proposed route of the railway ran about half-way between these two roads, crossing Currumbin Creek just above the mail coach route between Southport and Tweed Heads and then on to the surveyed township of Currumbin before following the coast to terminate at Coolangatta. As the rail route bisected the two branch roads it was known as the ‘middle route’ and was the most direct and least expensive route.¹¹

A major concern regarding construction of the line extension was the potential that the line could become a drain on finances unless there was a guarantee from the New South Wales government that the gauge difference between the respective rail heads at Murwillumbah and Coolangatta was addressed. Without connecting these two rail networks the revenues derived from the line would fall far short of the expenditure incurred in operating the line.¹²

Despite this concern the Queensland government were confident that the line would eventually be connected to the New South Wales rail network and would become part of a greater, profitable coastal interstate railway. To prepare for this eventuality the tunnels and bridges on the South Coast Railway Line were to be constructed to accommodate the New South Wales wider 4' 8½" (1.435 m.) gauge, although the tracks laid were initially Queensland's own standard 3' 6" (1.0668 m.) gauge.¹³

It was considered that, at least for the first few years, there would probably be considerable rail traffic transporting timber felled from the ranges behind the coast and, as more swamp land became drained, the growing south coast dairy industry would utilise the service. The railway itself would lead to the development of Burleigh and Currumbin as seaside resorts which, in turn, would lead to greater demand for passenger traffic.¹⁴

In early 1901 the practice of using day labour to construct railways in Queensland was introduced.¹⁵ Construction on the Nerang to Coolangatta South Coast Railway Line extension began in March 1901, making this one of the first lines to be constructed under these working arrangements.¹⁶ As a day labour project, the number of men employed in the construction of the railway varied depending on construction demands at that time. The Resident Engineer's monthly report filed in late November 1901 notes that 375 men were employed during the period whereas the monthly reports filed for September 1902, October 1902 and May 1903 mention that 219, 175 and 227 men respectively were employed as day labourers.¹⁷ These numbers excluded contractor teams and other allied workers such as sleeper-getters.

The construction of the concrete abutments at Currumbin Creek Railway Bridge were completed by early June 1902¹⁸ and the following month John McCormick and Sons were successfully awarded the contract to manufacture the steel wrought-iron work for both Tallebudgera and Currumbin Creek Railway Bridges for the sum of £5458 4s 11d (approximately \$757,151.00 today).¹⁹ This was in addition to steel components imported from England and the

United States. By mid-October the construction of the bridge was reported to be well forward with timber for the staging in the process of being delivered.²⁰

In January 1903 the hollow cast iron screw piles for Currumbin Creek Railway Bridge were being carted to the site and an early start on sinking the piles was expected.²¹ An engineering assessment conducted on the bridge in 2015 notes the high level of workmanship in construction of these piles.²²

Progress reports in newspapers of the time note the construction of the railway extension was generally satisfactory.²³ Some delays in bridge construction along the railway extension was reported, namely delays incurred awaiting a decision on the weight of engines that the bridges at Tallebudgera and Currumbin Creeks would be required to take²⁴ and, later, plate-laying at the Currumbin Creek Bridge site was be delayed as the bridge was not ready due to heavy timbers being encountered in the foundations.²⁵ In order to overcome these and other delays in construction additional gangs were hired to hasten any outstanding work.²⁶

By April 1903 works on the railway extension had progressed so well that there were questions as to whether the station buildings at Coolangatta would be finished by the time the line was completed as the New South Wales government had yet to finalise the required land resumptions.²⁷

The Coolangatta rail extension opened with the usual fanfare on 14 September 1903²⁸ with an estimated cost of £168,000²⁹ (approximately \$23,780,060.00 today) even with the use of cheaper day labour. The Coolangatta rail extension had its critics both during and after construction not only because of the cost but because it failed to serve many of the residents and industries of the south coast.³²

The use of day labour however proved extremely successful in Queensland and, by 1910, the state had more miles of railway than any other state³⁰ leading to the day labour model being used to construct Queensland's railways for 30 years.³¹ Construction of lines such as the Nerang to Coolangatta extension were key in ensuring the future success and longevity of the day labour approach.

Within a few weeks of opening, the railway from Brisbane to Coolangatta was being used by tourists as much as for the intended goods trade.³² At the time of connection to the South Coast Railway Line, the township of Coolangatta had only one hotel and about five houses³³ and most travellers stayed in Tweed Heads and ventured back over the border to enjoy Coolangatta's beaches and surf. In 1903/04 almost 7,000 people travelled to Coolangatta and Tweed Heads and this number had doubled by the outbreak of World War I. By this time Coolangatta boasted seven guesthouses and three hotels.³⁴

While Tweed Heads initially held sway over northern holidaymakers, significant growth at Coolangatta occurred following the influenza epidemic of 1919 which saw the closure of the border with New South Wales. While the border closure was short lived it did result in a dramatic increase in services at Coolangatta which served to support and encourage a growing tourist economy spurred on by the railway and, to the detriment of the railway, the increasing ownership of motor cars from the mid-1920s.³⁵ Coolangatta became the place to holiday with legendary guest houses like Greenmount, the Beach House and Stella Maris providing not only accommodation but organised social events for this early tourist market.

Despite a lack of encouragement from the New South Wales government, the Queensland government remained hopeful that the two state rail networks would eventually join at the Twin Towns (Coolangatta and Tweed Heads). The New South Wales Public Works Committee were, however, not desirous of the idea and the opening of the Kyogle line in 1930 finally put to rest any suggestion of joining the two networks at the Twin Towns.³⁶

Rail transport continued to dominated throughout the 1920s, 30s and into the 40s on the South Coast with the post-war years marking the peak of the service.³⁷ In the long term though there were factors which worked against the viability of the railway. Motor transport became increasingly reliable and better roads were constructed, while the trains were slowed by the many curves and bridges they encountered. The railway had been expensive to

construct and was costly to maintain due to the frequent damage to bridges and track foundations during floods. The railway began to see substantial losses and was eventually unable to compete with improvements in road transport.³⁸

As consequence, the line from Nerang to Coolangatta was closed on 1 July 1961 and Beenleigh to Southport three years later on 1 July 1964.³⁹

In 1963 the then Gold Coast City Council arranged to acquire the railway bridges spanning Tallebudgera Creek and Currumbin Creek from Queensland Government Railways.⁴⁰ The cost of the two bridges was £2,000 (approximately \$55,566.00 today) and it was stipulated that the rails on the Currumbin Creek Railway Bridge be included in the price. The bridge served as an unofficial pedestrian creek crossing from this time, although the rails remained in place on the bridge at least until 1969.⁴¹ It was also later used to carry a water pipeline across the creek. Records from 1968-1969 suggest that agreement had been reached between the then Gold Coast City Council and Albert Shire Council to split the maintenance costs relating to the Currumbin Creek and Monaco Street footbridges evenly.⁴²

By August 1990 an Albert Shire Council engineering report concluded that the bridge was generally in poor condition due to the lack of maintenance since the closure of the railway. The report indicated that without maintenance and remedial work the bridge would deteriorate into an unsafe condition within a few years.⁴³ The overlaid pedestrian footbridge was also in a state of disrepair with large holes in the deck, termite damage and reports of cyclists falling due to their wheels being caught in spacing in the wooden decking.⁴⁴

The future of the bridge was the subject of on-going discussions within and between the then Gold Coast City Council and Shire of Albert. Although located just outside of the Albert Shire's boundary the bridge was considered an important link across the Currumbin Creek for the local Albert Shire community. The then Gold Coast City Council wished to demolish the bridge while the Albert Shire wanted the bridge retained.⁴⁵ Until a decision could be made on the future of the bridge, interim repairs were carried out during September 1993 to make the bridge safer for pedestrians and cyclists.⁴⁶

On 28 November 1994 an agreement was signed between the respective councils of the then Gold Coast City Council and the Shire of Albert to retain the bridge with the Shire being responsible for the maintenance and upkeep of the bridge and the Council paying the Shire the one-off sum of \$10,000 as a contribution towards the maintenance of the bridge.⁴⁷ As part of the pre-conditions of the transfer of maintenance responsibilities the then Gold Coast City Council removed obsolete water mains from the bridge, these had been transferred to the newly constructed Pacific Motorway Bridge across Currumbin Creek, and replaced the decking with a plywood timber deck and 'Locsteel' posts and handrails fixed directly to the girders.⁴⁸ This replacement of the decking involved the removal of the original sleepers and the addition of mild steel top plates at the end of all RSJ girders.⁴⁹

The first evidence of major repairs to the steel work of the bridge occurs in the years 2000 through 2002. In 2002 the steel girders were extensively repaired with welded steel plates and a protective coating applied with the exception of the northern most span, this having been recoated the previous year.⁵⁰ This work also included the removal of the single remaining water main from the downstream side of the bridge.⁵¹

In 2008 Steel Post and Rail were engaged by Gold Coast City Council to replace some of the handrail posts and panels originally installed in 1994. Some repairs to the joints between the plywood decking sheets are likely to have occurred around this time.⁵²

A series of condition inspections of the bridge during the early 2010s noted extensive and major corrosion to various elements of the structure and loose handrail connections. The condition rating of the bridge triggered a maintenance project and repairs were carried out including the insertion of a strengthening beam on the underside of span 1 (northern end).⁵³ As part of this upgrade to the bridge a combined condition inspection, structural analysis and load rating of the bridge structure was undertaken during 2015 to better inform management

options.⁵⁴ This report noted generalised surface corrosion on the piles considered to be of a minor concern, minor corrosion of the bracing in places, significant corrosion of the girders and corrosion on the headstock beams.⁵⁵ The piles were, however, found to be inadequate in times of Q100 (100 year event) flood debris loading.⁵⁶

Work carried out in 2016 on the Currumbin Creek Railway Bridge included refurbishment of existing wrought iron girders and installing new precast concrete decking, CHS Cyclist Railing on either side of the bridge and lighting.⁵⁷ As part of this upgrade the 1994 decking, posts and handrails, including 2008 post and handrail inserts, were removed. On-site historical interpretation was also included as part of this upgrade.⁵⁸

The Currumbin Creek Railway Bridge has spanned Currumbin Creek since its construction in 1902-03. The historic continuity of this place has been retained while much of the surrounding setting has changed over the past 100 years. The bridge includes both original fabric as well as reconstructed fabric from various additions and alterations over this time to adapt the bridge from rail use to pedestrian and cycle use. Of all the railway bridges constructed in association with the Gold Coast section of the South Coast line, only the Currumbin Creek Railway Bridge remains extant.

Description

The bridge consists of twenty-one equal and identical supporting spans of 27 feet 5 inches (8.24 metres) comprising three plated longitudinal wrought iron RSJ girders carrying the new concrete deck with an overall length of 567 feet (173 metres). The twenty hollow cast iron screw piles consist of three wrought iron pile bents extending up to a headstock.⁵⁹

Steel work includes 'Carnegie' stamped wrought iron RSJ girders and 'Earl of Dudley' stamped wrought iron joists. 'Carnegie' steel was manufactured by the Carnegie Steel Company in Pittsburgh, United States. The company was formed from the consolidation of a number of local steel and allied works in 1892 and subsequently sold in 1901 to the newly formed United States Steel Corporation (U.S. Steel).⁶⁰ 'Earl of Dudley' steel was manufactured at Round Oak Works (later the Round Oak Steelworks) in Brierley Hill, West Midlands, England. The Round Oak Steelworks, built in 1857, closed on 23 December 1982 after 125 years of operation.⁶¹

Maintenance and upgrade work on the bridge since 1961 has resulted in the removal of the original sleepers and rails. Records indicate that the original sleepers were removed in late 1994 or early 1995. The bridge's superstructure now comprises precast concrete decking, cyclist railing and lighting which were installed in 2016. It is unknown when the rails were lifted however this would have been prior to, or as part of, work carried out to convert the former railway bridge for use as transportation for water mains and as a footbridge.

References

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- ³⁹ Kerr, J. and Armstrong, J. 1978. *Destination Sth Brisbane: An Illustrated History of the Southside Railways of Brisbane*. Brisbane: Australian Railway Historical Society Queensland Division, p. 118.
- ⁴⁰ City of Gold Coast. 2014. 'Cultural Heritage Significance Assessment for Currumbin Creek Railway Bridge', Unpublished heritage report prepared for Sarawak Avenue Pedestrian Renewal Project (SarawAve.010PM). City of Gold Coast file series WF50/1181(P2)
- ⁴¹ A photograph of the bridge, dated circa 1969, shows the bridge with rails in-situ. See Ward, John (photographer). circa 1969. *Image of Currumbin Creek Railway Bridge circa 1969* [photograph] reproduced in Arundel, A (2011).
- ⁴² Gold Coast City Council. 1969. *Twentieth Annual Report and Financial Statements for the Year Ended 30th June, 1969*, p. M-26.
- ⁴³ Cardno & Davies. 1990. 'Currumbin Creek Footbridge Report on Structural Adequacy'. Unpublished engineering report. Toowong, Qld: Cardno & Davies, p. 4.
- ⁴⁴ 'Item 9: Old Railway Bridges - Currumbin Creek and Tallebudgera' in *Report of Coordinating Committee Meeting, Gold Coast City Council Meeting, 3 May 1991*. p. 16
'Repair of Former Railway Bridge across Currumbin Creek'. Letter from Dorothy Bates, Secretary, Palm Beach Concerned Ratepayers and Citizens Association to The Town Clerk, Gold Coast City Council dated 21 September 1993. Old Index, Gold Coast City Council 997/4/2(p1).
- ⁴⁵ Various Gold Coast City Council documents. Old Index, Gold Coast City Council 997/4/2(p1).
- ⁴⁶ Handwritten note reading "Repairs carried out 28-9-93" and signed by unidentified persons on 'Old Railway Bridge across Currumbin Creek'. Letter from R.H. Brown, Town Clerk/Chief Executive Officer, Gold Coast City Council to Mrs Bates, Secretary, Palm Beach Concerned Ratepayers and Citizens Association dated 22 September 1993. Old Index, Gold Coast City Council 997/4/2(p1).
- ⁴⁷ 'Agreement Council of the City of Gold Coast & Council of the Shire of Albert' dated 28th day of November 1994. Old Index, Gold Coast City Council 997/4/2(p1).
- ⁴⁸ Pacific Highway: Helensvale - Coolangatta Road: Local Authority Services Requirements Associated with Proposed Duplication Bridges at Tallebudgera Creek (Job No 91/12B/N12; 169/12B/32) and Currumbin Creek (Job No 91/12B/N15; 169/12B/35)' letter from District Engineer, Main Roads, Queensland Department of Transport to The Town Clerk, Gold Coast City Council received 30 May 1990. Old Index, Gold Coast City Council 997/4/2(p1).
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