

# Date Nails of Australia and New Zealand

Rolland Meyers



Australia and New Zealand



Well, I said when I finished my last book, the one on known “Hubbard” nails that it would be the last one I did. But after a year I decided I would put together a book of what I have found to be the known nails found in Australia and New Zealand, along with some relevant information regarding these nails.

I am sure there are more, unreported nails out there than are shown on the following pages, and it is my hope that anyone reading this book that has information regarding such nails will report those finds to me so I can add that to future addendum pages. It goes without saying that I would also like to get a sample of any not shown on these pages.

The list of people who I want to thank is located below. I am sure I have overlooked someone, that is always the case. But you know who you are and my thanks are extended to you as well as those whose names appear. THANKS.

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## Thank You

I know I will have left someone out of this list of thanks. It is impossible to remember everyone who has helped me over the years with information, history, advice, encouragement and nails (not necessarily in that order). The names are in no particular order but some are grouped by State. To that purpose let me thank:

*Steve Williams, Stuart Dix, David and Sandy Bull, Bryan Blanchard, Don Patterson, Michael Lee, Aaron Young, Josephine Williams, William Jessop, Bob Slater, Ken Fairbairn, Joh Bentvelzen, Chris Stephens, Ian Nibloe, Tony Duboudin, Steve McNicol, Anthony Viana, Ian Jenkin, Peter Knife, Dr. Reece Jennings, Andrew Thompson, Rohan Sinclair, Mike Caldwell, Adrian Ponton, Peter Wallbank, Phillip Ryan, Don Copley, Peter Murphy, Jeff Austin, Fred Steer, Antonio Notte, Robert Stawarz, John Syers, Ron Hann, Andrew Dix, Alan Williams, Hugo van den Berghe. Hannah Jenkins, Gabby Sexton, Roy Spurr. To Sonja Barfoed, Kaye Guidetti and Rob Birtles of CSIRO. Special thanks to Leonard Jannese for his help with the photos, nails and discs from WA. My sincere apologies to those that I overlooked. Without your help this article would not have happened. Also special thanks to Jeff Oaks for hosting this book on his Web Page.*

**Rolland Meyers  
Oakland, California**

## ~ New Zealand ~

A lot of the material relating to the date nails of New Zealand comes from Ron Hann, of Christchurch. Ron spent a lot of time pulling the nails and researching them for valuable information. I visited New Zealand and traveled extensively on both islands and never once saw a date nail in a tie (sleeper). In fact, most of the railway people I talked with had never seen a date nail. So finding them anymore in situ is a rarity. Years ago Ron graciously let me use his material for a small pamphlet I had put together. I am reusing that material here for an expanded book. Thank you Ron. I would also like to thank Bryan Blanchard who wears many hats, one of which is the Director of the Pleasant Point Railway and Museum on the South Island. For years there was a persistent rumor that a 1918 New Zealand date nail did, in fact exist. I finally tracked it down to Bryan's museum collection and he admitted that it had been "made" to fill in the series of nails! (See photo in this section). So there is no known legitimate 1918 New Zealand date nail.

"The nail may be driven either into the end of the sleeper (tie) or in the face about midway between the rails. However, the practice of end-driving the nails was discouraged in 1913 when a memo was issued instructing that they be always placed on the top of the sleeper in the centre of the track (Memo 7566/68. Dated 6.2.1913)."

This, along with much more information came from an article written in May of 1977 by Ron Hann of Christchurch, New Zealand for the New Zealand Antique Bottle Collector Magazine.

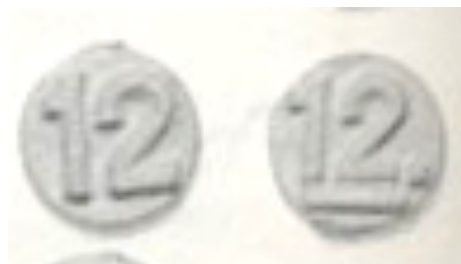
In another article for the same publication written in February of 1977, Ron writes: "A department official in 1903 referred to an advertisement in a trade magazine relating to the date nails of the company of John Milliken of Belfast, Ireland. Subsequent enquiries revealed that the nails cost 2.5 Pounds per cwt. (approximately 4,500 nails). An order was apparently placed for 100,000 for 1904, just the first of many thousands to be imported into New Zealand over the next 23 years."

So the set of New Zealand nails spans the period from 1904-1927, with a few oddities and an absentee in the mix. There are varieties of the 1910 nails, the 1912 nails and no nail for 1918 except for the one noted above at the Pleasant Point Railway on the Canterbury Plain of the Southern Island at the town of Timaru.

From the 1977 article Ron reports that he “once heard of ‘someone down outland way’ who had a 3 (1903) but until I actually see it I would discount that report.”

The 1910 nail variation is fairly obvious. There is a flag on the 1 on one nail and none on the second variation. The rarity of these two variations is not known to me, so I cannot speculate on that.

The second nail with the variation is also obvious. It is the 1912 nail. One variety has a line under the date with a dot after the date, the other does not have this line and dot. I do not have the second variety and it is considered rare by all of those collectors familiar with the New Zealand set of nails. Ron’s comment: “To the best of my knowledge I have only ever had one and this I gave to another collector before I realized the difference.”



In the research I have tried to conduct, I have found very few people there that are even aware of the existence of date nails in New Zealand. This includes railway employees! When I visited that country in 2004 I checked several miles of old trackage and did not see one nail, nor evidence that a nail had been there! In talking with railway folks I only found a handful that knew what a date nail was and all of them said they had not seen one in a sleeper in years.

When Ron started collecting them he said “he came across them in quite a few places (there was one line about 100 miles away - Washdyke to Farlie - which had literally hundreds of them - mainly 13’s) but they were constantly becoming harder and harder to find.” He also notes that nails are also found in sleepers (ties) used for fence posts, retaining walls and landscaping, often many miles from any existing rail line. That is also the case here in the U.S.

The last known New Zealand nail is 1927 but Ron notes: “Enquiries were made of gangers as to their needs for 1928 and 1929 but no nails for these years appear to have arrived. Also in 1939 and 1940 it was considered desirable to re-introduce the use of nails, but nothing appears to have come from the proposal, possibly because of wartime conditions.”

One last item that Ron printed regarding the absence of a 1918 nail. “Departmental records definitely state that there were no nails used in 1918 and, originally, 1919 but apparently some 19’s became available later as 40,000 are shown as arriving on the ‘Remuera’ ex London. In the same shipment were 60,000 for 1920.



“To over come the lack of 18’s and 19’s, the following provisions were made: To indicate 1918 two nails were to be used with their heads touching, while for 1919 two were to be used also, but one head diameter apart.”

There have been reports of variations of the single digit dates in the New Zealand set by some collectors. I have already covered the legitimate variations of the 10 and 12, but the variations in the single digit nails may be caused by the inclusion of English code nails which were made by the same company (Milliken of Belfast, Ireland) and sent not only to England, but a few other countries. This may also be the root of the rumor of the 3 (1903) nail that Ron Hann heard about years ago? In any case, one should be aware of the existence of these code nails. There is a set with double or twin shanks, but the nails pictured on the following page have the single shank - the same as the nails used in New Zealand. (Photo from DATE NAILS COMPLETE - Wiswell & Evans, Pg. 81)





# ~ NEW ZEALAND SET OF NAILS ~

MADE BY JOHN MILLIKEN CO. - BELFAST, IRELAND



## ~ AUSTRALIA ~



The story of the Australian nails is a very interesting one and several collectors I know of have one set of nails they usually call it the “Australian Set.” Most of these nails are usually from the South



Australian Railway (SAR), but other States also had their own railways and their own nails, although the SAR was the first in Australia to use them and the most prolific user of them.

Over the years I have written several articles about the date nails of Australia, both for publication here and in Australia. I will include one of those articles here to serve as a primer of the over-all picture of the nails that have been found so far. I am sure there are more to be found and reported and it is my hope that anyone reading this who has some of those nails will report that to me so I may include that information in the future addendum pages for this book. Following that article I will try to add some more information and the pages showing the individual State sets known so far.

But what I originally thought would be nice concise sets of nails for each State run railway has not turned out that way. So far I have confirmed that five States had railways with date nails found in them, but in the case of two of those states, Queensland and Victoria, at least some of the nails may be put into the sleepers not by the railway of that state but by the Commonwealth Scientific & Industrial Research group (CSIRO) for sleeper (tie) treatment testing. These tests were done in very limited areas, but some records and memories do exist.

There are also a few private mining operations that used their own set of nails. So from what I thought would be a simple task of matching each State with its own set of nails has not proven to be that easy.

One last note. The date nails manufactured and used in Australia - which include all of the nails other than that original SAR 1929 were made under a government contract and therefore not public information. I have only been able to substantiate one manufacturer to this point, although there are probably at least three or four who made the nails under government contract for the railways. Sydney Cooke Ltd., of New South Wales is the only company at this point that I know manufactured at least some of the nails used.

Here is that article:

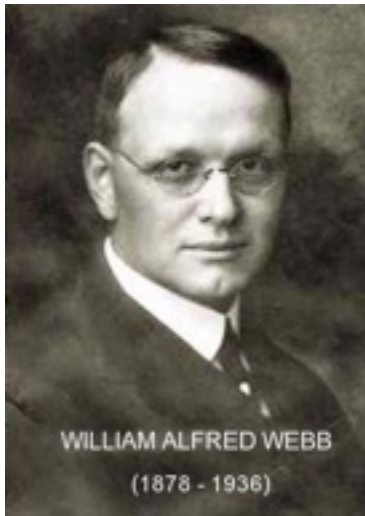


# Australian Date Nails and Some History.

Rolland A. Meyers

The use of date nails in the sleepers of the Australian railways is well established. I have pulled several myself. There are still many unanswered questions about them and their use: who made them, how many States actually used them and why some and not others? The answers may never be fully found, but some facts are known and it is the purpose of this paper to present what is known and perhaps add new information as it becomes available.

The first railway system in Australia to use date nails was the S.A.R., or South Australian Railway. In the early twentieth century this railway system was in total disarray. Routes that did not make sense, gauges that did not agree that required transferring of loads from one system to the next, outdated and un- matched equipment, lack of safety systems and chaos at almost every level, including governments that changed often and without any overall direction with regard to modernization of the rail system.



A call went out to search for a person who could reconstruct the S.A.R. and turn it into a competitive modern rail system. That search ended with the hiring of William A. Webb (1878-1936), a citizen of the United States with a long history of railroad management in his resume. Mr. Webb took the job in 1922 at a relatively high salary and arrived in 1923 to start his revitalization of the railway system of South Australia.



For those that are interested there is a wonderful biography regarding this period of Webb's life written by Dr. Reece Jennings: W.A. Webb South Australian Railway Commissioner, 1922-1930: a political, economic and social biography. (1973).

One of the things Mr Webb did was introduce date nails to Australia. In his renovation of the system he decided to use date nails to keep track of the new sleepers that were added to the upgrade. The use of date nails in the U.S. at this time were at their peak and most major railroads were using them. The first year they were used in the sleepers of Australia was 1929. I believe that Webb ordered his 1929 nails from American Steel and Wire Co. of Pittsburgh, PA and had them shipped to Australia.



The 1929 nail is basically the same as the 1929 used here in the U.S., but all date nails used after this first one are of Australian manufacture and different then any nails used on any other rail lines in the world. But the 1929 nail that was used on the S.A.R. was a nail made in the U.S. In a correspondence with Dr. Jennings he commented:

*You are right to blame Webb and his Chief Engineer, Robert Hall Chapman, for the introduction of date nails in South Australia.*

“Between 1901 and 1920 sleepers were dated by means of a single auger hole and between 1920 and 1929 by two auger holes bored in each sleepers as indicated in diagrams issued to each ganger. Between July 1929 and June 1930 by a 1929 nail. Between July 1931 and February 1933 by a “32” nail. From March 1933 to early in 1934 by a “33” nail. From then onward nails appear to have been supplied to correspond approximately with each calendar year.” (S.A.R. Document).

In another railway memo the Office of the Chief Engineer on October 6, 1930 read: “The Railways Storekeeper has in stock 80,000 dating nails for the year 1929. I propose to use these to indicated sleepers put in the track during the financial year 1929/30. Will you please requisition the Railways Storekeeper for your requirements and have the sleepers put in during the last financial year dated as soon as possible.

So nails were used in 1929 but no nails purchased for 1930 or 1931. In 1932 they take on a totally different appearance and from that point on are definitely manufactured in Australia.

The use of date nails in the sleepers of the S.A.R. continued the the years following 1932 until 1973, Dr. Jennings credits an S.A.R. packer (fettler/maintenance of way worker) named A. Blackstone at Nantawarra for suggesting that they be discontinued in 1971. His idea was approved by the Railways Commission and he was given a ten dollar bonus. On the second of August 1973 a circular was issued:

#### DISCONTINUANCE OF USE OF DATING NAILS

The use of dating nails is to be discontinued forthwith. Please arrange accordingly. Any stocks on hand should be returned to “B” Depot, Mile End for disposal. (Assistant CME)

It is noted also that “in the last year of use, 1973, nails cost \$515 per ton. Few of the 1972 nails were used and it is believed that none of the 1973 nails were issued. The railway then reverted to drilling holes to indicate year of insertion.”

Shown here is the set of South Australian Railway nails. The 1973 is shown separately as I do not have it in my set and this 1973 belongs to Steve McNicol, Editor and Publisher of Railmac Publications.



If anyone reading this article has an extra 1973 (shown above) I can use it for my personal collection.

No other State railway in Australia used date nails - at least none are known to me - until 1969, when ironically two of them decided to start using sleeper nails in their systems. Those two railways, which are about two thousand miles apart are the West Australian Government Railway (WAGR) and the Tasmanian Railway. So for the period 1969-1973 there were three State railways using date nails in Australia. Here are scans of the years that all three were using nails.





Below: SAR/TAS/WAGR nails from 69-73



As you can see there are some nails common to more than one of these railways, indicating the nails were made not by the railways themselves but by an outside source after an order was placed.

After trying many years to learn who manufactured the date nails for the railways of Australia I have only been able to find one company that I have evidence of doing that. I am sure that there are others as the shank markings and date structures on many of the nails are so distinct as to indicate a manufacturer different than other nails with the same date.

The one confirmed manufacturer was actually located in a State whose railway has never been found to use date nails - New South Wales. After a long period of searching for nail



sources I finally tracked down Don Patterson who was a Production Supervisor for Sydney Cooke Ltd. in NSW. I spoke with Don in 2011 and he said as far as he knows they were the ONLY company in all of Australia to make the date nails. They had manufacturing branches in several States. The company has been around a long time so they could very well have made them from 1932 until 1985? Don said they took orders directly from the railway, which was considered a government order and the item was not listed in any Sydney Cooke catalog because it was a specialized government purchase.

Don also said these nails were bagged in #112 pound sacks for shipment and a government inspector would check quality at the plant. The government would supply the dated metal cylinder dies for the nail machines. He said as far as he knows Australia did not have a shank identification system like that used in the U.S. that would allow identification of the manufacturer by the markings on the shank of the nail.

Perhaps there are more manufacturers of the Australian date nails other than Sydney Cooke. But I have never been able to find any who could be verified.

West Australia Railway (WAGR) used date nails from 1969-1985 with no nail being used in 1979. They were also unique in being the only railway I am aware of that used dating discs - concave aluminum discs with one or two dates on them that placed in pre-drilled holes in the sleeper. These discs were used in 1979, 1980, and from 1985 to 2000.



Finding more information regarding these discs is a work in progress and hopefully will result in another article dedicated specifically to them. The © photos of the discs is the wonderful work of Leonard Jannese of West Australia. He too is seeking answers to several questions about the discs.

WAGR also used letter nails - three known at this time - that indicated the type of eucalyptus timber used to make the sleeper. (SEE PHOTO OF WAGR SET)

J= Jarrah

K= Karri

M= Marri



To the right are the three “J” varieties that are known. The B73, J73 and J74 shown above are three different letter date combination nails known to have been used on a mining line in Western Australia

Tasmania is the other railway that started using sleeper date nails in 1969 and continued using them until 1980. I had the pleasant experience of visiting Tasmania in 2013 and pulled quite a few nails while there. They were all located between the rails in the center of the sleeper. A friend from Hobart (The Capitol) collects nails and has done quite a bit of nail hunting there. He found some single-digit code nails in the unused portion of the yards outside of Launceston. I looked for these but did not see any in the parts of Tasmania I checked. So these must have been an experiment for that particular area only. Below is a scan of the Tasmanian set of nails.

The 1980 nail, the last year Tasmania used nails, is a very unusual nail with the date and four letters on the head. I have asked several railway workers and historians and have yet to find out what the four letters mean- K M and K U. My guess it indicates the type of tree (timber) used for the sleeper , much like the J, K and M were used in West Australia, but why where they only used on the last nail of the series?

TASMANIA (AUSTRALIA) SET OF DATE NAILS  
1969 - 1980





**WESTERN AUSTRALIA SET OF NAILS**  
**1969 - 1985**  
**THERE IS NO 1979 -THERE IS A B 73 AND J 74**





There are two other States that used sleeper date nails. One very sparingly and the other to an even lesser degree. The first of these two States is Queensland. They used nails in the Northern part of the State in the Tablelands in the 1980's to indicate a treated sleeper. In a Queensland Rail memo to the workers dated January 17, 1983 and issued by the Office of the Chief Engineer, Brisbane the following is noted:

- 1.1 *The depletion of hardwood timber resources throughout the State has led to the increasing use of preservative teated timber sleepers.*
- 1.4 *The treatment process involves the pressure impregnation of the timber sleeper with a creosote-oil blend that contains the termiticide aldrin. - Creosote 70% Mineral Oil 29.5% Aldrin .05%*
- 1.5 *During the treatment process, sleepers are gang-nailed both ends. This is done to restrict splitting during and after the treatment process. **The year of treatment is indicated on either the head of a date-nail driven into the sleeper end, or alternatively on the hangnail itself.***

In *DATE NAILS COMPLETE* on page 14 is a quote from William Pagan, Chief Engineer of Queensland Railways dated March 6, 1903:

*“In this State, for the past five years we have been keeping records, and I send you for your information results of the first four years returns. . . . but I may say that we are now using the date nails from America, as being, if anything, cheaper than boring a hole.”*

I have never seen or heard of anyone pulling a U.S. date nail from sleepers in Queensland, but these would have been from 1902 or 1903 and if they were used are no longer to be found. What has been found are nails from the 1980's with very small dates on them, unlike the nails used in the other States of Australia. And as I noted earlier most, if not all, of these date nails were found in the “Tablelands” away from the coast. Below is a scan of the known date nails from Queensland.



This brings us to the last State in Australia that is known to have used date nails in their railway sleepers - Victoria. I had heard rumors for several years that they did use nails but could never find any written evidence and absolutely no confirmed nails. A lot of email swapping and information seeking finally revealed something called the CSIRO - Commonwealth Scientific & Industrial Research Organization. They are an Australian group with over 6,000 people/scientists who do testing in several fields trying to develop improvements to existing models. One of the experiments carried out by CSIRO was treating sleepers for longevity in the State of Victoria. These tests sections were dated with a date nails and from reports I have found they were conducted primarily in the 1970's but one report mentions the 1960's but no mention of date nails then.

Quoting a person familiar with the testing: *"I first encountered date nails on the Broad Gauge track in a test track stretch just North of Glenrowan on the North East Main. These were from the 1960's (I think) and were identifying various treated sleepers installed in collaboration with the CSIRO who held extensive records of the test area. Some time around early in the 1970's I accompanied two scientists from the CSIRO who assessed and evaluated the condition of the existing in track sleepers. Some of the sleepers on test were treated pine, others were treated non durable (white) hardwoods. From memory treatments were varied."*

*"In 1975 creosote treated pine sleepers were installed in the Down North East main line North of Kilmore and many of these were still there in the track in the early 2000's. Test patches were installed at Stavely on the Ararat to Portland line which were also quite successful. Less successful were test patches East of Cranbourne on the Gippsland line. Breakages in the wet formation reduced the service life of softwood sleepers."*

*"All of the nails were galvanized with a pointed shank about 1 1/2" long and 3/16 diameter with a flat head approx 1/2 inch diameter. Numbers were raised e.g. '75'."*

Out of all the communicating I have done with folks in Victoria I have only one nail thus far from those tests. It is a 1976 and is the same '76 as used by the Tasmanian Railway. It is different than that used in 1976 by the West Australia railway.

In the scan to the right the Victoria 76 is on the left, the Tasmanian 76 is in the center and the West Australia 76 is on the right.





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The date discs used by the WAGR will be covered following the pages showing the known nails and varieties used by States that are known to have used them. The CSIRO nails have been included in the State where they were found.

Additional photos, samples or information would be great appreciated and accepted.  
Please send that/those to:

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**The following pages show the known date nails by State. Followed by the date discs used by WAGR**



# Queensland

				
1	2	3	4	5
				10
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

All nails are 2 x 13/64 round raised. 1988 same size bigger head





# SOUTH AUSTRALIA



 1		 3	 4	 5
 6	 7	 8	 9	 10
 11	 12	 13	 14	 15
 16	 17	 18	 19	 20
 21	 22	 23	 24	 25
 26	 27	 28	 29	 30

				
31	32	33	34	35
				
36	37	38	39	40
				
41	42	43	44	45
				
46	47	48	49	50
51	52	53	54	55
56	57	58	59	60

All nails are 2 x 1/4 round raised steel





# TASMANIA




				
1	2	3	4	5
				
6	7	8	9	10
				
11	12	13	14	15
			<b>Tasmanian Code Nails</b> 1 1/2 x 1/5 round raised steel Found only in the Launceston Yards	
16	17	18	19	20
				
21	22	23	24	25
				
26	27	28	29	30

All nails are 1 3/4 x 1/4 round raised steel



# Victoria




				
1	2	3	4	5
6	7	8	9	10
<p>— This 1976 is the only nail so far that I have been able to obtain from Victoria. It came from the Kilmore area and was put into the sleeper (tie) by C.S.I.R.O. - the Australian Scientific Organization for treatment/longevity tests. It is the same nail used by the railway of Tasmania, but different that that used by the West Australian (WAGR) railway. I have lots of communications indicating several other years were used in this and other areas, but no nails have surfaced as yet. Size: 1 1/2 x 1/5 round raised, steel.</p>				
				15
21	22	23	24	25
26	27	28	29	30





# West Australia



				
1	2	3	4	5
				
6	7	8	9	10
				
11	12	13	14	15
				
16	17	18	19	20
				
21	22	23	24	25
				
26	27	28	29	30

All nails are 1 1/2 x 1/5 round raised steel





## Date Nail Discs from West Australia (WAGR) Railway



These unusual aluminum concave discs were used by the West Australian Railway (WAGR) to take the place of date nails. They were first used in 1979 when no nails were used, and again in 1980, when both discs and nails were used. A return to nails until 1985 when both were used and from then until 2000, the last confirmed year they were used.

With the wonderful help of Leonard Jannese who's interest in these discs is as dedicated as mine, we have found some of the information about these discs.

From a former supervisor of WAGR: "The discs were designed to replace the traditional date nail which signified the date of sleeper placement. Although the date nails were used for some years, the date could be disfigured if the driving was too severe. The discs on the other hand showed the date of processing of the sleeper and the installation was part of the sleeper processing (adzing and pre boring to specified patterns for rail sizes).



The concept was not new being used by SEC to mark information regarding their timber power poles. We introduced the discs in collaboration with the sleeper processing contractor at the Picton Sleeper Depot where a circular recess was counter bored centrally on the top surface of the sleeper, referenced to that face to allow for variable sleeper depths. The recess was limited to around 3mm deep - sufficient to allow the slightly crowned aluminum disc to fit neatly. During the process the sleeper would exit the boring machine where a worker would physically fit the blank disc and flatten it using a stamp with the date embossed within the tool. This would expand the disc to wedge into the recessed hole and imprint the date all in the one motion.

I'm not sure when the discs were discontinued but were still being used when I pulled out in 1992 when concrete and steel sleepers were being introduced and timber stocks were diminishing.

The discs proved to be successful although, in cases where the top surface of the timber would check, the recessed hole would be affected and the discs would dislodge." (john Syers)

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Koppers Inc. has a plant in West Australia at Bunbury, which is about 80 miles south of Perth along the coast. It was rumored that Koppers treated the sleepers for the WAGR and put the date nails into them at the plant before they were put into use by the railway. Confirmation of a sort has shown up. I received an email with the following information in it:



" . . .one of the contacts in Brookfield Rail went and check(ed) out the old workshop at Koppers and found several unused Date nails and Discs. . .This confirms even more so that these where installed at Koppers ,another ex- employee that worked at Koppers which I have just contacted informed me He can remember boxes of nails and Discs coming down from Perth, I have had it mentioned by several people its possible the nails and Discs where made at the Midland Rail Workshop, which was very large, had its own foundry and manufacture most items for the Rail, I am planning to meet up with the latter person in a couple of weeks."



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# Notes Regarding the Nails - By State

## Queensland Railways (QR):

- Chris Stevens was a volunteer on the Herberton/Atherton line and saw nails from 1980-1989.

- Andrew (?) posted on WHEELS OF STEEL photos of the 1986, 1987 and 1989 nails he pulled in the "So. Yard of Townsville and also at the start of the former Greenvale line. At the time of this contact Andrew worked for Queensland Rail (QR).

- William Jessop, a retired railway worker in the Herberton/Atherton area. Has nails and also reported a 1976 was found on a line further North, but no substantiation for that.

- Bob Slater who owed the Harberton/Atherton line when we communicated say's they are re-sleepering the line and will keep their eyes open. Bob eventually sent me several nails.

- From Ken Fairbairn, Officer in Charge of the Gulflander wrote: "I spoke with Granger (Normanton to Croydon Section) Joh Bentvelzen about the nails and he remembers them well, form the mid 80's, and also when he was stationed in Normanton in 1996. Although we predominantly use steel sleepers, there are some under the points (turn-outs) and those nails were indeed used.." He included a page from the Grangers Manual - section 1.5 that states in part....." *The year of treatment is indicated on exit her the head of a date-nail driven into the sleeper end, or alternatively on the gang nail itself.*"

From John Davey an employee of Queensland Rail: *It appears QR pushed them in the mid to late 1980's, I understand the intention was for them to be put on the ends of all new timber sleepers throughout the network. It appears this was not followed through extensively as, by then, we were purchasing large quantities of concrete and steel sleepers. When these were inserted on a face, it led to the removal of timber sleepers before their lives had expired.*

*Around this time, QR was also buying treated timber sleepers and it became the practice to place gang nails on the end of them to try to reduce end splitting. I think the gang nails also had the year of the manufacture stamped on them so that obviated the need for date nails.*

## South Australia Railways (SAR):

- Bulletin from Office of the Chief Engineer - Adelaide (SAR) dated August 2, 1973 Titled "*Discontinuance of the dating nails.*" *The use of dating nails is to be discontinued forthwith. Please arrange accordingly. Any stocks on hand should be returned immediately to 'B' depot Mile End for disposal.* This bulletin also has hand written on the bottom the Purchases of nails made 1970-1973. 1970 (2 tons @ \$425 /ton), 1971 ? quantity and price not known, 1972 (2 tons @ \$492/ton), 1973 (1 ton @ \$515/ton - last nails purchased.)

- In a letter from Dr. Reece Jennings, Biographer of Webb and the SAR dated 6/20/10 he writes regarding the end of the use of date nails: "*They lasted until 1974. Then one of the SAR packers (=fettlers) A. Brackstone at Nantawarra suggested that they be discontinued. I think he actually put forward the idea in 1971. His idea was approved and the railways commissioner generously gave him a \$10 bonus.*" (docket reference #2917/1971)

- Also, note must be made of the great help from Steve McNicol who is now retired, but was Editor and Publisher of *RAILMAC* Publications. He shared a lot of information, including photos of his personal collection (shown below)





SOUTH AUSTRALIAN RAILWAYS.

IN THIS CASE PLEASE REFER TO

A. H. CHAPMAN,  
Chief Engineer.

OFFICE OF CHIEF ENGINEER

C.E.R. 3150/20.

(Box 1404c, G.P.O.), ADELAIDE, \_\_\_\_\_ 19

SLEEPERS - DATING NAILS FOR,

THE DISTRICT FOREMAN, ADELAIDE.

I was under the impression that an instruction had been issued that surplus stocks of dating nails from one year could be used up in the early months of the following year, as that practice has been followed for a number of years on the four northern districts.

However, I cannot find any trace of a such a circular, but there was a C.E.R. Circular dated 6-10-30 (apparently not re-issued to District Foremen) which read:-

Sleeper - Dating Nails for

"The Railways Storekeeper has in stock 80,000 dating nails for the year 1929. I propose to use these to indicate sleepers put in the track during the financial year 1929/30. Will you please requisition on the Railway Storekeeper for your requirements and have the sleepers put in during last financial year dated as soon as possible."

Another circular dated 18-8-32, and signed by the C.E.R. read:-

Sleeper Dating Nails 1932

"The Comptroller has been asked to deliver to you dating nails numbered "1932". These are to be used for sleepers applied in 1931/32 and 1932/33 and I will be glad if you will so arrange. The year 1930/31 will be left undated."

On 10-2-33, a third circular letter was issued by the C.E.R. stating:-

"Dating nails numbered "1933" have now been received and the Comptroller has been requested to deliver them as enumerated below. These are to be used for sleepers applied in 1933 and I will be glad if you will so arrange."

This was followed by a circular letter dated 14-2-33 from the Resident Engineer to all District Foreman on the Adelaide Division, as follows:-

Sleeper Dating Nails.

"Sleeper dating nails numbered 33 (i.e. 1933) are now available and you may have them on application. Please let me know your requirements. These nails should be driven in to any sleepers put in during 1933. Of course, if you have already driven a "32" nail, it may remain but "33" nails should be used in the future."

On 11-9-35, a further circular letter was issued by the C.E.R. as follows:

Sleeper Dating Nails.

"It has been brought to my notice that there is a certain amount of negligence displayed by some Gangera in dating the sleepers. Will you please instruct your District Foreman to see that



gangers take dating nails with them whenever they are renewing sleepers and insert the nails before they leave the vicinity the same day."

On 22-12-42, the Chief Engineer of Railways in writing to the Comptroller stated inter alia:-

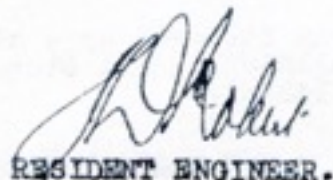
"I do not think we waste many (nails), as I have no objection to a carryover to the following year of, say, three months, to use up previous stocks of dating nails."

Then followed Circular Letter No. 10A, dated 14-3-44 instructing that forthwith when gangers remove sleepers from the tracks the information supplied shall include the following details:-

Year sleeper was laid.  
Kind of sleeper, and  
Line from which sleeper was removed.

Summarising, between 1901 and 1920 sleepers were dated by means of a single auger hole and between 1921 and 1929 by two auger holes bored in each sleeper as indicated in diagrams issued to each ganger on 27-7-44. Unfortunately, many sleepers were put in undated between 1923 and 1928 (June). Between July 1929 and June 1930 by a "29" nail. Between July 1930 and June 1931 unmarked. Between July 1931 and February 1933 by a "32" nail. From March 1933 to early in 1934 by a "33" nail. From then onwards nails appear to have been supplied to correspond approximately with each calendar year.

Please file this letter for your future guidance and that of your successors as it serves the dual purpose of advising you how sleepers have been dated in the past for assisting your Gangers in giving the age of sleepers removed, and also repeats instructions governing the future dating of sleepers.

  
RESIDENT ENGINEER.

20-1-47. Q-7.

Copies to THE DISTRICT FOREMAN, MILE END.  
BALHANNAH.  
GAWLER.  
RIVERTON.  
BOWMANS.  
KADINA.

Copy to MR. JENSEN.  
MR. MURN.

# Tasmanian Government Railways:

- Several folks have been very helpful and forthcoming regarding information, photos and samples of the date nails used in Tasmania. The main person in the process was/is Steve Williams of Hobart. Steve was so open to helping, it was one of the main reasons my wife and I took a trip to Tasmania, not only to see the country, pull a few nails, but also to meet Steve and his wife.

Below is the chart Steve made of where he found his nails:

The nails were located in the centre of the sleeper. My collection so far, (as of 20/03/11) range from 70, 71, 73 – 80. I have no idea how sleeper installation dates and maintenance was performed before and after these dates.

I have done some measurements of my collection and all nails seem to have a consistent shaft length of 43mm. The head diameter range in size from 12.5mm – 17mm the head size within some years does also vary See table 1.

Note that this table is an observation from my collection and details locations of nails first pulled (other locations also contained examples)

Year	Diameter (mm)	Line Pulled(year)	Comments
69	15	Derwent Valley Line (2011)	
70	15	Risdon Line (2011)	The 7 on this nail is a different font than following years
70	16	Risdon Line (2011)	The 7 on this nail is a different font than following years
71	16	Risdon Line (2011)	
72	17	Derwent Valley Line (2011)	
73	17	Derwent valley Line (2010)	
73	16	Risdon Line (2011)	
74	15	Derwent valley Line (2010)	Some examples with a painted head
75	17	Derwent valley Line (2010)	Some examples with a painted head
75	16	Derwent valley Line (2010)	
76	12.5	Derwent valley Line (2010)	Some examples with a painted head
77	12.5	Derwent valley Line (2010)	
78	12.5	Derwent valley Line (2010)	
79	12.5	Derwent valley Line (2010)	
80	13	Derwent valley Line (2010)	This has the letters KM above the 80 and KU Below the 80

- Below is the same chart for the very unusual code nails that Steve found. These are the only single digit code nails used in Australia that I am aware of at this point. WAGR used letter nails .

Single Digit Date Pads (not known to have existed)  
 Were they used as a replacement for when multi digit date pads were unavailable?  
 At least one set was found as a 7 and an 8 in the sleeper. The rest were single nails

1		Inveresk - East Tamar	Nov 2011
2		Inveresk - East Tamar	Nov 2011
3		Inveresk - East Tamar	Nov 2011
6		Inveresk - East Tamar	Nov 2011
7		Inveresk - East Tamar	Nov 2011
8		Inveresk - East Tamar	Nov 2011

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- I would also like to thank Andrew and Stuart Dix who both have connections with the TGR and affiliated Historical Societies for their informative help and photos. Stuart sent me a copy of a CDIRO report regarding its numbering of nails there. These nail have never been found to my knowledge.

*“Numbering: The sleepers were numbered in the track from 1-146 by means of galvanized numeral nails driven into the top surface of each sleeper. Appendix 1 shows the end stamp number and the numeral nail number of each sleeper. It also shows the order of laying of the sleepers at each of the ten test sites with some corrections made as a result of the first inspection.”*

# Victoria Railways

- I believe at this time, the only date nails used by the Victoria Railway were put in by the Commonwealth Scientific and Industrial Research Organization (CSIRO) for sleeper treatment test sections. Apparently there were several of these test sections, but finding any nails seems to be a real challenge. So far I have just the '76 in my collection and it is the same '76 that was used in Tasmania but not the same as the '76 used by the WAGR.

- From Adrian Ponton: *"I have worked in the Victoria rail scene for 40 years. The use of date nails in sleepers does not appear to be a widespread practice, unlike Tasmania and South Australia. I am however aware of date nails in sleepers inserted in Victoria, in fact, recently with the replacement of timber sleepers with concrete sleepers between Dandenong and Cranbourne, a number of the removed sleepers had date nails from the 1970's. The sleepers by and large were sleepers that had been treated. I am also aware of some sleepers on the North East Standard Gauge of a similar vintage with date nails that were replaced with concrete about 4 years ago."*

- From Mike Caldwell (District Engineer and District Supervisor for VR): *"I first encountered date nails on the Broad Gauge track in a test track stretch just North of Glenrowan on the North East Mainline. These were from the 1960's (I think) and were identifying various treated sleepers installed in collaboration with the CSIRO who held extensive records of the test area. Some time around early in the 1970's I accompanied two scientists from the CSIRO who assessed and evaluated the condition of the existing in track sleepers. Some of the sleepers on test were treated pine, others were treated non-durable (white) hardwoods. From memory treatments were varied.*

*Later this century (20th) I visited the same area with a contractor and staff preparing a trial of treated pine sleepers.*

*In 1975 creosote treated pine sleepers were installed in the Down North East main line North of Kilmore and many of these were still there in the track in the early 2000's. Test patches were installed at Staveley on the Ararat to Portland line which were also quite successful. Less successful were the best patches East of Cranbourne on the Gippsland line. Breakages in the wet formation reduced the service life of softwood sleepers. The only other Victorian line with date nails was the Mt Gambler line in the SA Section west of the Victorian border where the track was operationally Victorian but maintenance was by SAR. Those dated back to 1965 or thereabouts.*

*All of the nails were galvanized with a pointed shank about 1 1/2" long and 3/16" diameter with a flat head approx. 1/2 inch dim. Numbers were raised.*



- From David Watson: *"I do not have any personal knowledge of this subject but as a former Senior Manager with VR I certainly never saw any nails in use in Victoria. I have obtained the following information from a former Chief Civil Engineer.*

*It was not normal Victorian practice to apply date nails. However in the 1970's the VR in conjunction with the CSIRO conducted trials with sleeper to which various timber preservative treatments had been applied. The sleepers were placed in the track at possibly four locations including Carnegie and Glenrowan and monitored over a period of time. It is probable that sleepers at these locations had some form of identification. It is understood that the trials did not result in any action by VR as the whole questions was overtaken by improving concrete sleeper technology."*

- When I tried to contact CSIR) directly I found they were much like the Government bureaus everywhere! *"....testing undertaken by CSIRO is commercial-in-confidence, and the test results are property of the organization which commissioned the test. To obtain the test reports, you need to contact the company that commissioned the tests directly to make enquiries regarding testing of the product....."* (Read: Government run around).

Finally, in January 2018 one of my e-mails fell on sympathetic ears and I was able to enlist the help of two or three people at CSIRO to help try and locate more information. But it appears I am several years too late to uncover any records of the testing done. The Timber Section of the CSIRO was disbanded in the late 1980's and the records have been destroyed! I am still in contact with a CSIRO librarian who feels there may be one or two of these documents still available. Should they surface, I will add that information in addendum pages.

# Western Australia Government Railways (WAGR)

- Regarding the Letter/Date Nails used by the Hammersley Railway, a mining railway for the operations run by Rio Tinto Corp. This from the Vice President of the Pilbara Rail Historical Society. *“Hammersley Iron mainly introduced its Date Nail around 1972, when the Tom Price - Paraburdoo track was laid and they began converting the Dampier-Tom Price line from the original 8-ft long untreated timber sleepers to the new rack standard using 9-ft treated sleepers. Both projects required large quantities of hardwood timbers, beyond Australia’s capabilities in the timeframe required, so significant numbers were imported from Malaysia (including ‘Kempass’ and ‘Keruing’ timbers). The Western Australian timbers used were ‘Jarrah’ and ‘Karri’ and possibly also ‘Blackbutt’ and ‘Yellow Tingle.’*  
The known nails used in 1973 and 1974 would fit in with the Tom Price main-line’s timber-to-timber re-sleeping project.

In an email exchange with Roy Spur and Anthhony Notte, both Corporate Representatives of Brookfield Rail, the company that does all the maintenance for WAGR comes the following information. Both have many, many years of experience with the railway. My questions are followed with comments by Tony:

Q) It has always bothered me that the discs were installed by Koppers at time of treatment and then the sleepers were delivered to WAGR for installation in the road bed by the Maintenance of Way crews - I think you call them “gangers” over there? The same thing was tried over here in the earlier years of the use of dating nails and it was found that the nail would end up fad down as often as it would end up i a readable position - face up. So my question here is, are the gangers more careful over there as to which side of the sleeper is placed up or down or was there a formal railway directive stating that the date disc should always be placed up? I know in the process of cutting and treating sleepers (ties), because of the wood grain inherent in the timber that it is beneficial for longevity to install the sleepers properly, but out in the field little attention was given to this concept - at leas over here. They even went so far as to put the treatment nail in the end of the sleeper so it would not matter which way it was laid, it would always be readable! So what, if any, rules and procedures were practiced to insure the dating disc would be face up?

*A) While I am sure that track personnel were always careful in their work practices, the reason date discs were always placed face up was that Technical Standards required the timber*

*sleeper to be laid “heart face” down. That is, the timber sleeper face closest to the heartwood would always be placed down not the track formation. **Every single Trackman knew this - it was the first thing a trackman learnt on the job.** When date discs were introduced, it was simply a matter of specifying that all date discs were to be installed on the opposite sleeper face to the heart face.*

*Obviously, prior to the introduction of date discs, the timber sleeper would be laid “heart face” down above (in accordance with the Technical Instruction) and then “date” marked by the trackman either by:*

- 1. Drilling a hole on the top surface of the installed timber sleeper in a predetermined pattern. This sleeper dating method predated the introduction of date nails in 1968.*
- 2. From 1968 onwards, hammering a date nail into the top surface of the installed timber sleeper, centrally placed.*

Q) Blank discs have been found throughout the system, sometimes in several sleepers in a row, which would indicate to me that they had some particular meaning and not just a random error in them not having a date on them. Were you ever aware of them, their use or purpose?

*A) I was not aware of any use of or requirement for blank discs. At the time, I did discuss the possible use of blank discs by the mining railways (BHP, Rio, etc) that operated in the north of Western Australia and to whom Koppers also supplied timber sleepers. Koppers also were able to confirm that to their knowledge there were no specific requirements for the use of blank discs.*

*My best guess is that any blanks found on sleepers in track should not have been there in the first place - they are discs that failed to have the date pressed onto them and should have been removed from the supply chain as failures and definitely should not have found their way onto the sleeper. Hopefully, there was not a lot of these blanks in track!*

Q) The use of the nails. I believe the nails were used from 1969-1985 with none being used in 1979? There were also three letter nails, a J, K and M, which indicate the type of eucalyptus timber used for the sleeper.

*A) Correct. Date discs were introduced in 1979 with some use in 1980. Roy Spur has a collection of Date Nails and Date Discs . . . I must say that Roy Spur has done a marvelous job in preserving some of WAGR/West Net Rail history - an excellent collection. J=Jarrah species; K=Karri and M=Marri. It has to be said that Jarrah was by far the dominant species used for sleepers - my best guess 90%.*



Q) I believe the discs were installed by Koppers, but also believe the nails were put in by the WAGR at the time the sleeper was put into service? Do you know if this assumption is correct? Were the nails a railway application and the discs as treatment application?

*A) As mentioned in my comment against your first questions above, auger holes (for dating purposes) and **date nails** were placed in situ by the track gangs that installed the sleepers. Initially, the **date discs** were installed by the Sleeper Processing Co - a subsidiary of Bunnings, a then major West Australian Company in the timber supply industry. The Sleeper Processing Co was responsible for processing the sleeper prior to preservation treatment by Koppers. The Sleeper Processing Co would:*

*\*Drill the holes, as required into which dog spikes and/or other fastening types would later be installed by the field track gangs*

*\*Adze the sleepers, if and as required*

*\*Incise all faces of the timber sleepers to aide with the later preservation treatment process by Koppers and finally*

*\*Drill the recess on the top surface of the timber sleeper into which they, i.e. the Sleeper Processing Company, installed the date discs.*

*The processed timber sleepers would then be moved to the adjacent Koppers Yard where they would undergo a preservation treatment process using the Boulton Treatment Process. Following these “processing” and “preservation treatment” process, the timber sleepers would then be available to be transported to site anywhere within the WAGR/WestNet Rail network for installation into track.*

*In the mid 1990's, the Sleeper Processing Co was purchased by Koppers who then carried out both the “processing” and “preservation treatment” processes. Their facilities are located in Picton, which itself is located in the south west of Western Australia, near the major coastal town of Bunbury.*

Q) For years now I have been trying to find out who actually manufactured the nails for the railways of Australia. I know from some research that they were issued under Government contracts to the various railways in the States that use them and that is why you do not see date nails offered in any of the nail manufacturing company catalogs. I was able to track down one manufacturer, Sydney-Cooke Etc., of NSW. But looking at the nails used by the different States of Australia it is apparent that there was more than one manufacturer involved. Over here there is a shank identification system in which each manufacturer had a “signature” marking on the shank which would identify thermal Looking at the shanks of the nails used by WAGR it is obvious they are made from different equipment which might indicate entirely different

manufacturers. So basically what I am asking here is - do you know who made any of the nails used by WAGR.

*A) My recollection was that a company named Ajax Fasteners was involved in the supply of these date nails for WAGR/WestNet Rail. This company manufactures all types of screw spikes, etc for the rail industry. At the time I contacted this company, but there was no one there that had the length of service to be able to confirm or otherwise their involvement in the manufacture and supply of these date nails. So, unfortunately I cannot shed any light on this matter.*

Again, my thanks to Tony for taking the time to reply with his expertise to the questions I had for him.



## Lastly, Who Made The Nails?

- I have tried several times to learn who made the date nails used in the sleepers of Australia's Railways. This has proven to be an overwhelming challenge and to this point, after 15 years of off-again, on-again trying, I have only been able to confirm one manufacturer. I am sure that there are more and possibly some of these may have been "in-house" manufacturers by the railways themselves, although because a lot of the nails are the same ones used by more than one railway, that would counter that idea.

I did contact Don Patterson who used to be "responsible for making the date nails for Sydney Cooke Fasteners. On 4/7/11 I spoke with Don who said *"as far as I know we were the only company in all of Australia to make the nails. They had manufacturing branches in several States, The company has been around for a long time so they probably made them from the 1929 nail used by SAR until the 1985 nail used by WAGR. They took orders directly from the railway, which was considered a Government order and the item was not listed in Sydney Cooke catalog because it was a specialized government purchase.."*

*These nails were bagged in #112 pound sacks for shipment and a government inspector would check quality at the plant. The Government would supply the dated metal cylinder dies for the nail machines.."*

Don said as far as he knows Australia did not have a shank identification system like that used in the U.S. where you could identify the manufacturer by the markings on the shank.

- Since there are so many different sized nails with different shank markings and date designs I do not believe Sydney-Cooke was the only manufacturer. But have not been able to prove any other one to this point. The plant that Don was in was in New South Wales.



