Northern Pacific Railway Company. Engineering Department Records.

Copyright Notice:

Version 3
August 20, 2018

N. P. 1757
6-24

OFFICE OF Chief Engineer

FILE NO. 3659-6

SUBJECT:

Ties-Method of Treating

From: 7-21-39

To : 12-31-57

CLOSED

3659
6

3659-A

FORM 2199 Insert

NORTHERN PACIFIC RAILWAY COMPANY

PURCHASING DEPARTMENT

W. K. SMALLRIDGE,
DIRECTOR OF PURCHASES
H. [redacted]OWDER,
G. M. [redacted]ARR,
PURCHASING AGENTS
W. C. NELSON,
ASST. TO DIRECTOR OF PURCHASES
C. C ANDERSON,
STATIONER

ST. PAUL, MINN. OCTOBER 3, 1957

REQ'N. NO. 16689-9 ORDER NO 1057-387

SHOW THESE NUMBERS ON YOUR INVOICE

FARMERS UNION CENTRAL EXCHANGE, INC.
POST OFFICE BOX 2520
BILLINGS, MONTANA

ATTENTION:
MR. HENRY GROVES
MGR. ASPHALT SALES

Please furnish the following material consigned to **NORTHERN PACIFIC RAILWAY COMPANY**
Care of R. G. ZIETLOW, ENGINEER TIMBER PRESERVATION - AS DIRECTED
Route Via NP RY.

THIS ORDER IS GIVEN AND ACCEPTED, SUBJECT TO THE CONDITIONS APPEARING ON THE BACK HEREOF.

500,000 GALLONS (APPROXIMATELY) FUEL OIL A.W.P.A. SPEC. P4-56

$2.25 PER 42 U.S. GALLON BARREL

F.O.B. TANK CARS REFINERY, LAUREL, MONTANA

PER YOUR QUOTATION DATED SEPT. 20, 1957

SHIP IN TANK CARS

DELIVERY: (APPROXIMATELY) 70,000 GALLONS PER MONTH
COMMENCING LATE OCTOBER, 1957

TO BE DELIVERED AS CALLED FOR

IMPORTANT PLEASE COMPLY

AT TIME OF SHIPMENT PLEASE FORWARD IMMEDIATELY ONE COPY OF SHIPPING NOTICE TO CONSIGNEE, DESTINATION AS INDICATED ON ORDER, ONE COPY TO E. L. JENSEN, GENERAL STOREKEEPER, AND ONE COPY TO W. K. SMALLRIDGE, DIR. OF PURCHASES NORTHERN PACIFIC RAILWAY, ST. PAUL 1, MINN., SHOWING CAR NUMBER, OUR ORDER REFERENCE AND HOME ROUTING.

COPY: E.L.J. (3)
H.R.P. (2)
RGZ (2)
E.T.G.
E.S.U.
FILE 182-2A
W.C.N.

ED

DIRECTOR OF PURCHASES

3659

Brainerd, Minnesota, April 1st, 1957

PERSONAL

Mr. H. R. Peterson:

Referring to our recent discussions about the possibilities for the changes in location and personnel of this office that have been suggested to become effective on my retirement, the first of next month.

In my letter to you on July 19, 1956, and the accompanying memoranda dated July 15, 1956 and May 25, 1949 (Revised July 25, 1956), I believe I have indicated as clearly as I can the reductions in supervision personnel that have been effected in this department since my appointment to this office on July 1, 1930.

On my appointment I was asked by Mr. Blum to be prepared to move this office to St. Paul at once but at that time and on several occasions afterwards when this has been suggested it was determined by the Management after due consideration and investigation in each instance that it was to the best interests of the Railway Company to leave the office at Brainerd, as it has always been since its origin.

From my own close observation of the work being performed in this office under my supervision I have found no reason to disagree with the General Office investigators who in every instance in the past have recommended that this office should remain as it is.

After careful consideration of your requests for my recommendations I can only repeat that in my estimation, operation of the treating plants cannot be performed more effeciently or economically with any less supervisory personnel either here or in St. Paul.

AJL/dm

Brainerd, Minnesota, April 1st, 1957

Mr. H. R. Peterson:

Confirming my recommendation of our Chief Clerk, Mr. J. W. Sundberg, for the General Foreman's position at Brainerd Tie Plant, on September 1, 1957, when this position becomes vacant due to the retirement of Mr. Levi Johnson at Age 70.

Mr. Sundberg has 38 years continuous service in this department and has filled the Chief Clerk's position very efficiently for the past 20 years. He is without doubt better qualified for the General Foreman position than any of the employes at the treating plants. Mr. Johnson also served as Chief Clerk in this office for 9 years immediately previous to his appointment to his present position.

In the event of Mr. Sundberg's appointment as General Foreman, I would recommend Mr. R. W. Madsen to succeed to the Chief Clerk position and Mr. D. E. Madsen to succeed Mr. R. W. Madsen as Distribution Clerk in this office.

AJL/dm

St. Paul, Minn.
March 26,1957

Mr. H.R.Peterson
Chief Engineer
N.P.Railway Co.

Dear Sir:

It has been brought to my attention that Mr. A.J.Loom, Superintendent of Timber Preservation, is about to retire.

At the suggestion of Mr. Loom I am writing you regarding my qualifications for following in his footsteps.

In June 1938 I received the degree of Bachelor of Science in Forestry from the University of Minnesota which gave me a basic knowledge of Forest problems and products. Besides my Forestry studies I have had courses in bio-chemistry while studying for my Master of Science degree in Plant Physiology. The degree of Master of Science was granted to me by the University of Minnesota in June 1941. During the past fifteen years while serving the Northern Pacific Railway as Water Inspector and Assistant Engineer of Water Service I have gained considerable knowledge in railroad activities and operations. I have also completed the N.P. Freight Traffic Correspondence Course with a score of 96% and the N.P. Transportation Correspondence Course with a score of 100%.

I believe that my education and training qualify me as a successor to Mr. Loom as Superintendent of Timber Preservation and would appreciate it very much if you would consider me for this position.

Respectfully,

R. Zittlow

3659

Brainerd, Minnesota, July 19th, 1956

Mr. H. R. Peterson:

You may wish to have at hand the attached statement that I have prepared from records in this office relating what the supervision in the Timber Preservation branch of the Engineering Department has been since it was organized on August 1, 1907.

The first five years operation of the two treating plants was performed with only one crew under supervision of the Superintendent, the Assistant Superintendent and a Timekeeper-Yard Clerk. The Timekeeper-Yard Clerk at each plant also acted as Foreman for the contractor who during this period employed all of the piece workers at both plants.

In 1912 the contractor was eliminated and from that time on the piece workers have been company employes. The Timekeeper-Yard Clerk was promoted to Yard Foreman and separate crews were organized at each plant. From 1912 to 1930 supervision was performed by an Assistant Superintendent and a Yard Foreman at each plant, under direction of the Superintendent.

In 1930 the Superintendent's title was changed to General Superintendent. The title of the Assistant Superintendent at Brainerd was changed to Superintendent Brainerd Tie Plant and the title of the Assistant Superintendent at Seattle was changed to Assistant General Superintendent with headquarters at Paradise. A Yard Foreman was retained at Brainerd and at Paradise and only a Treating Inspector was retained at Seattle.

In 1932 the position of Superintendent Brainerd Tie Plant was abolished and only the position of Yard Foreman was retained at Brainerd.

In 1940 the position of the Assistant General Superintendent was abolished and the Yard Foreman positions at Brainerd and Paradise were changed to General Foremen.

1531-11

Since 1940 I believe we have operated the treating plants with the least supervisory personnel possible.

On May 25, 1949, a memorandum was made in your office, and a statement was prepared in this office outlining in detail the "Clerical Work Performed by Employes in the Office of General Superintendent Timber Preservation" of which I believe you have copies. The situation is essentially the same now as it was then but if you so desire a revision can readily be made to include duties of the General Foremen at Brainerd and Paradise and clerical work performed in their offices as well. Also duties of the Treating Inspector at Seattle.

Shall be glad to submit any additional information you may request concerning supervision or personnel in this department.

AJL/dm

Brainerd, Minnesota, July 19th, 1956

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You may wish to have at hand the attached statement that I have prepared from records in this office relating what the supervision in the Timber Preservation branch of the Engineering Department has been since it was organized on August 1, 1907.

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AJL/dm

History of Timber Preservation Supervision, Engineering Department, Northern Pacific Railway

1907 - 1957

In 1905, after thorough investigation of the various methods and patented processes for preservative treatment of wood in Europe and in this country, Mr. Howard Elliot, President of the Northern Pacific, ordered construction of two identical treating plants. One at Brainerd, Minnesota, and one at Paradise, Montana.

A contract was made with the American Creosoting Company of Indianapolis, Indiana, to build and equip the plants for pressure treatment with creosote by what is known as the Lowry Process, which at that time had recently been patented by Mr. C. B. Lowry, President of the American Creosoting Company.

Construction of both plants was completed in 1907 and operation commenced in October of that year at Brainerd and in April, 1908, at Paradise.

Effective August 1st, 1907, Mr. Andrew Gibson, a civil engineer with many years experience on the railway, was appointed by General Manager H. J. Horn as Superintendent Timber Preservation and Tie Treating Plants with headquarters at Brainerd.

Effective October 1st, 1907, Mr. Lowry Smith, an experienced engineer and plant operator of the American Creosoting Company was employed as Assistant Superintendent Timber Preservation in direct charge of treatment and operation at both plants.

In 1912, Mr. Gibson was promoted to System Engineer, Maintenance of Way, with headquarters in St. Paul and Mr. Smith was appointed Superintendent Timber Preservation and Tie Treating Plants with headquarters in Brainerd. In 1917, on his return to service after a serious illness, Mr. Gibson was re-appointed Superintendent Timber Preservation and Tie Treating Plants and Mr. Smith was appointed Assistant Engineer in the office of the Chief Engineer in St. Paul. Mr. Gibson's health improved and he continued as head of this Department until retirement age of 70 in 1930.

Effective February 1, 1912, Mr. C. H. Nichols was appointed Assistant Superintendent Timber Preservation and Tie Treating Plants with headquarters at Paradise, Montana. Mr. Nichols held this position until July 26, 1917, when the Paradise plant was closed down for an indefinite period.

Effective August 16, 1919, Mr. A. J. Loom was appointed Assistant Superintendent Timber Preservation and Tie Treating Plants with headquarters at Paradise, Montana, and on the same date, Mr. Levi Johnson was appointed with the same title with headquarters at the Brainerd plant.

In 1926, an agreement was entered into with the West Coast Wood Preserving Company at Seattle, Washington, to treat requirements on the west end of the railway at their Seattle plants and thereby avoid back haul on materials purchased in the Coast District and heretofore treated at Paradise.

Effective March 1st, 1927, Mr. G. R. Hopkins was appointed Assistant Superintendent Timber Preservation and Tie Treating Plants with headquarters in Seattle, and on August 19, 1928, Mr. C. L. Harding was appointed General Timber Inspector, Seattle, Washington, to assist Mr. Hopkins and handle the details of treatment of materials for the Railway Company under our contract with the West Coast Wood Preserving Company. Mr. Harding also performed special work for the Assistant Chief Engineer in Seattle and was promoted to Assistant Engineer on April 1st, 1933. On December 3, 1932, Mr. G. H. Stone, previously employed as Yard Foreman and Chemist at the Brainerd plant was appointed Treating Inspector at Seattle. Mr. Stone retired on January 1st, 1953 at age 70, succeeded by Mr. H. E. Benjamin, same date.

Effective July 1st, 1930, Mr. A. J. Loom was appointed General Superintendent Timber Preservation, vice Mr. Andrew Gibson, headquarters Brainerd, Minnesota. Mr. G. R. Hopkins was appointed Assistant General Superintendent Timber Preservation, headquarters Paradise, Montana, and Mr. Levi Johnson was appointed Superintendent Brainerd Timber Preservation Plant, headquarters Brainerd, Minnesota.

Effective July 1st, 1932, the position of Superintendent Brainerd Timber Preservation Plant was abolished account force reduction and Mr. Levi Johnson was appointed Yard Foreman, Brainerd Tie Plant.

Effective January 1st, 1940, the position of Assistant General Superintendent Timber Preservation was abolished account force reduction and Mr. Hopkins was appointed Assistant Engineer in the Assistant Chief Engineer's office at Seattle, afterwards promoted to Assistant Bridge Engineer and retired June 30, 1954.

Effective January 1st, 1940, Mr. Levi Johnson was appointed General Foreman, Brainerd Tie Plant and Mr. C. L. Willcutt was appointed General Foreman, Paradise Tie Plant. Mr. Johnson and Mr. Willcutt were previously employed as Yard Foremen and assumed the same duties as General Foremen. Mr. Willcutt retired on September 1st, 1952, at age 67.

Effective September 1st, 1952, Mr. E. L. Sears, Engineer-electrician at the Paradise plant was promoted to General Foreman, Paradise Tie Plant.

Since January 1, 1940, supervison in the Timber Preservation Department exists as follows:

1 General Superintendent, System
1 General Foreman, Brainerd, Minnesota
1 General Foreman, Paradise, Montana

No other employes in this department have any supervisory authority.

Office of Gen'l. Supt. Timber Preservation
Brainerd, Minnesota, July 15, 1956

Brainerd, Minnesota, July 19th, 1956

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Office of Gen'l. Supt. Timber Preservation
Brainerd, Minnesota, July 15, 1956

D R A F T

The clerical work attached to the office of the General Superintendent of Timber Preservation at Brainerd involves considerably more work than attaches to the majority of small offices on the railroad.

In addition to the normal duties of such an office, namely, preparation of payrolls, keeping records of the employes (and incidentally there are about 100 men employed in the Treating Department), keeping up the seniority lists, vacation schedules, requisitions for preservatives and other materials, etc., this office has under its jurisdiction the accounting for of cross ties and switch ties used on the system. In this is included the checking of all ties received at the treating plants as well as the checking and accounting of ties purchased on the Eastern District.

The recording of ties is a somewhat complicated matter in that there are 6 grades of ties, Nos. 1, 2, 3, 4, 4-A and 5, which must be listed, recorded and distributed separately for each of the three plants. The recording and listing of these ties is first on receipt of the white timber. After they are treated they are distributed over the entire railroad separately by grades from each of the three plants in accordance with detailed requisitions, all of which terminate at the Brainerd office, from whence they are assigned to the three treating plants. Between these two steps there is a great deal of intermediate work in rather fulsome detail due to the piece work handling. Each tie grade has a different piece rate for handling; for example:

In the unloading and cross piling of white ties there are 8 different rates, 4 for Brainerd and 4 for Paradise.

For loading from pile to boring machine trams there are likewise 8 rates, 4 for each of the two plants.

For handling through the boring and adzing machine there are 6 different rates for each of the two plants, or 12 in all.

For loading treated ties from trams to standard gauge cars there are 4 rates at each of the plants.

These rates are the same for both plants but must be accounted for separately.

For unloading treated ties from trams to pile on the ground for storage there are two rates at each of the two plants, and when it is necessary to unload and store treated ties beyond standard gauge tracks four additional rates are in effect.

Again, if we have treated ties loaded in standard gauge cars and they are piled on the ground for storage at some remote spot, two additional rates are in effect.

Finally, when loading treated ties from storage to standard gauge cars 4 different rates are in effect.

To summarize, this makes a total of 30 different rates at Brainerd and 28 different rates at Paradise.

Similarly in the handling of switch ties we have in effect 17 different rates at Brainerd and 15 at Paradise.

In addition to cross and switch ties we are having an increasing amount of structural timber to treat and account for and generally speaking these come in comparatively small lots for different jobs and it is necessary to record and account for same separately so that the proper AFE, etc. may be charged.

Incidentally, I might say that we are hoping to be able in the coming conference with the Organization to consolidate a number of these rates to simplify them in connection with the adjustment account of the 40-hour week. Our tie handlers and other employes in the treating plants come under a special branch of the Clerks' Union.

The Timber Treating Department is the only one on the railroad that I know of that handles its own accounting. The telegraph and Dining Car departments do have their own division accountants but they have a separate force for that purpose whereas the detailed accounting work in connection with the treatment of ties is done by the small force in Mr. Loom's office in Brainerd.

In addition to this general office work, they frequently assist in the actual checking of ties at the Brainerd plant itself when there is an extremely heavy movement of ties.

Mr. Loom conferred with Mr. Zapffe following the talk that Mr. Denney had with Mr. Loom last Friday. Mr. Zapffe stated that in his opinion it would be impractical to consolidate the stenographic work. Mr. Loom's own stenographer does more clerical work than stenographic. If the stenographer is used to take dictation and do other typing work in Mr. Zapffe's office, it is improbable that he would have any time left for clerical work in the tie office, and due to the increase in the amount of structural timber treatment, additional work has accumulated in the office.

Mr. Zapffe told Mr. Loom that for the past year he has endeavored to obtain an additional man in his office because the amount of work being handled was excessive for the present two employes. We, of course, know nothing of that side of the picture, but I mention it as indicating that Mr. Zapffe does keep his present two employes fairly busy notwithstanding the incident that occurred last Friday when Mr. Denny was in Brainerd.

Mr. Loom tells me that his force were on the job during Mr. Denney's visit on Friday although he did tell Mr. Denney that it was not unusual for his distribution clerk and personal stenographer to go out occasionally for coffee.

Clerical Work Performed by Employes
in Office of General Superintendent of Timber Preservation,
Brainerd, Minnesota.

Rewritten

Force

Chief Clerk	J. W. Sundberg
Distribution Clerk	R. W. Madsen } names changed
Personal Stenographer	D. E. Madsen }

1. Handling of requisitions from Chief Engineer's office on the treating plants (Brainerd, Paradise and Seattle) for treatment and delivery of cross ties, switch ties, lumber, piling, poles, etc. Handling requisitions for creosote shipped out on line. Keep record of cross ties by grade and species, number of each grade and species used for each purpose on each division. Keep record of switch ties by number of each length and species, number of each length and species used for each purpose on each division.

2. Employment records of all employes at each plant, and of Tie Inspectors in Eastern District. This involves maintaining seniority lists, vacation schedules, wage schedules and piece work rates, also expense accounts, automobile insurance, accident reports, transportation, and reports pertaining to Union Agreement.

3. Payrolls. Compile all details, including deductions, for employes at treating plants and tie inspectors, also monthly compensation report, Form 889.

4. Make requisitions for preservatives, material and supplies; also stationery required at each plant.

5. Do all Tie Plant accounting. Accounting Department, St. Paul, maintains only a control figure. Cost statements showing details of all expense items for each kind of material treated at Brainerd and Paradise. Keep record of all materials stocked and treated at Seattle under contract and make vouchers for payment to the West Coast Wood Preserving Company in accordance with prices and provisions in contract. Certification and transmittal of purchase invoices and freight bills.

6. Correspondence. Instructs and checks all clerical work performed at the plants. Assists with clerical work at the Brainerd plant on account of the numerous orders for treatment and handling of miscellaneous materials. Typing of emergency orders for material ordered by phone from Chief Engineer's office in advance of the regular requisition. Subject to call for miscellaneous typing for General Superintendent. Handle all filing and answer all phone calls.

7. Weekly and monthly reports covering preservatives, cross ties, switch ties, lumber, piling, poles and miscellaneous material, received, disbursed and on hand.

8. Annual reports. Keep records for making up "Annual Reports of Tie Plant Operation", annual inventory, and reports required by U. S. Department of Agriculture, showing quantities and description of materials treated, preservatives and processes used in treatment. Prepare information for Auditor Disbursements and Tax Agent relating to assessed valuation.

9. Perform clerical work in connection with purchase and delivery of ties to all of the plants and inspection in the Eastern District. Compiling reports on Tie Record Test Tracks. Compiling of oil analyses records.

10. Perform clerical work and typing incidental to the General Superintendent's active membership in the American Wood Preservers' Association, the American Railway Engineering Association, Forest Products Research Society, The Railway Tie Association and the Northwest Maintenance of Way Club.

Office of Gen'l. Supt. Timber Preservation
Brainerd, Minnesota
Original report dated May 25, 1949
Revised July 25th, 1956

3659-A

FORM 2199 Insert

NORTHERN PACIFIC RAILWAY COMPANY

PURCHASING DEPARTMENT

W. L. SMALLRIDGE
PURCHASING AGENT
G. M. deLAMBERT
G. M. CARR,
ASST. PURCHASING AGENTS
W. C. NELSON
ASST. TO PURCHASING AGENT
C. C. ANDERSON
STATIONER

ST. PAUL, MINN. SEPTEMBER 12, 1956

REQ'N. NO. 17065-8 ORDER NO. 956-886
SHOW THESE NUMBERS ON YOUR INVOICE

BERNUTH, LEMBCKE COMPANY, INC.
GRAYBAR BUILDING
420 LEXINGTON AVENUE
NEW YORK 17, N.Y.

ED-1349

Please furnish the following material consigned to NORTHERN PACIFIC RAILWAY COMPANY
Care of A. J. LOOM, GENERAL SUPERINTENDENT TIMBER PRESERVATION, C/O
Route Via WEST COAST WOOD PRESERVING COMPANY, SEATTLE, WASH.

THIS ORDER IS GIVEN AND ACCEPTED, SUBJECT TO THE CONDITIONS APPEARING ON THE BACK HEREOF.

250,000 GALLONS CREOSOTE - IN ACCORDANCE WITH ATTACHED NORTHERN PACIFIC SPEC. E-126 DATED AUGUST 25TH, 1938

24¢ PER U.S. GALLON AT 100 DEG. F.

DELIVERED INTO THE TANKS OF THE WEST COAST WOOD PRESERVING COMPANY, SEATTLE, WASHINGTON.

PER YOUR QUOTATION DATED SEPTEMBER 10TH, 1956

DELIVERY FROM THE S.S. ALBERT G. BROWN APPROXIMATELY NOV. 15TH TO THE 20TH, 1956

COPY: A.J.L.
L.S.M.
H.R.P. (2)
FILE 182-2
W.C.N.

PURCHASING AGENT.

AJLoom

Pls fill out

HRP 5
7/19

H.R.P.
Herewith.

[signature] 7/20-25

Mailed from Spokane 7/25/5-6

WOOD TREATING CHEMICALS CO. 5137 SOUTHWEST AVE., ST. LOUIS.

QUESTIONNAIRE File Copy 3659

SUBJECT: INCISING OF CROSS TIES FOR CONTROL OF CHECKING AND SPLITTING

As Chairman of Sub-Committee No. 4 (Incising), Railway Tie Association Committee on Checking and Splitting of Cross Ties, we are endeavoring to develop the following information for our annual report, and will appreciate if you will kindly complete the attached copy, returning it to me in the enclosed self-addressed, stamped envelope.

Name of Railroad

By Northern Pacific Railway

(1) We are (X) We are not ( ) incising cross ties.

(2) We are contemplating incising cross ties ( ).

If the answers to questions 1 and 2 are in the affirmative, we will appreciate having you supply the following additional information:

(3) What species are being incised? All species, namely Fir, Larch, Hemlock, Pine and Oak.

(4) What grades are being incised? All grades. All ties.

(5) Approximately what quantity? 19,500,000. Commenced in 1925.

(6) Are ties separated and graded before shipment into the treating plant for incising? Ties are graded, but more than one grade is received in the same car and stacked in separate piles in seasoning yard. Not incised before air seasoning and ready for treatment.

(7) What incising pattern is being used?
American Railway Engineering Association

(8) What type incising teeth?
(a) Chisel X
(b) Oyster Knife
(c) Other

(9) Is it your practice to adze, bore and end trim cross ties at time of incising, or is the adzing and boring, where specified, done before treatment? Ties are adzed, bored and incised immediately before treatment. We do not trim.

(10) Are your ties hewn, sawn or mixtures of both? All sawed.

We would like to make this report as complete as possible, and any comments which you care to give us on your reasons for incising ties, and as to your experience to date with ties which have been incised, treated and put in service will be most helpful, and we thank you for your cooperation.

(Over)

W. W. Hanly, Jr.

Note - It is our practice to adze, bore and incise all cross ties, switch ties and sawed materials in accordance with A.R.E.A. Specifications, immediately before treatment, to assure required absorption and most uniform penetration of preservative. Believe incising retards checking and splitting to some extent but not enough to warrant the high cost of handling envolved in incising green ties on arrival at the plants.

Renewals per mile of cross ties maintained for the past 10 years have averaged 56 ties and general condition of ties in all tracks is the best it has ever been on this railway. Believe incising assures best treatment and thereby extends service life of all ties.

3659

CHAPMAN

CHAPMAN CHEMICAL COMPANY

WOOD AND FIBRE PRESERVATIVES

AGRICULTURAL AND INDUSTRIAL CHEMICALS

C. F. GRAFTON, VICE PRESIDENT
WOOD PRESERVATIVES DIVISION

DISTRIBUTORS FOR
THE DOW CHEMICAL COMPANY

MEMPHIS, TENNESSEE

June 6, 1956

REPLY TO P. O. Box 138

TO THE WOOD PRESERVING INDUSTRY:

You will recall that last year we reprinted preliminary statistics prepared by Gordon D. Merrick of the U. S. Department of Agriculture entitled "Quantity of Wood Treated and Preservatives Used in the United States - Preliminary Report, 1955."

Enclosed is a reprint of these statistics for 1955. We are pleased to note the 18% increase in the use of pentachlorophenol by the wood-treating industry for this period. If additional copies of this report are needed, we will be most happy to furnish them to you.

Cordially yours,

CHAPMAN CHEMICAL COMPANY

C. F. Grafton

C. F. Grafton
Vice President

CFG/tl
Enclosure

3659

OFFICE OF CHIEF ENGINEER
MAY 11 1956
NORTHERN PACIFIC RY. CO.
ST. PAUL, MINN.

NORTHERN PACIFIC RAILWAY COMPANY
SUMMARY OF COST OF TREATING OPERATIONS PERFORMED AT
TIE TREATING PLANTS, DURING THE MONTH OF APRIL, 1956

MATERIAL	No. of Pieces	Equal F.B.M.	Cost of Untreated Material	Cost of Treatment	Total Cost of Treated Material	Cost of Untreated Material M-FBM	Cost of Treatment M-FBM	Cost of Treated Material M-FBM
BRAINERD, MINNESOTA								
Cross Ties	18208	675970	59295.34	14640.33	73935.67	87.7189	21.6583	109.3772
Switch Ties	4053	232138	21527.64	6668.32	28195.96	92.7364	28.7257	121.4621
Lumber		197609	*	6513.52	*	*	32.9617	*
Fence Posts	476	10083	*	326.12	*	*	32.3435	*
PARADISE, MONTANA								
Cross Ties	26428	1052044	62583.57	17195.23	79778.80	59.4876	16.3446	75.8322
Switch Ties	3511	207275	13841.82	4465.00	18306.82	66.7800	21.5414	88.3214
Anchor Logs	150	2777	100.41	71.24	171.65	30.0000	25.6536	61.8113
Lumber	14	5528	*	167.29	*	*	30.2623	*
SEATTLE (W.C.W.P.CO'S PLANT), WASHINGTON								
Cross Ties	3786	134272	8650.47	3447.22	12097.69	64.4250	25.6734	90.0984
Lumber		233287	**1794.87	# 10649.05	12443.92	*	45.6479	*
Piling (5936.46 Cu. Ft.)	218	71238	*	3437.51	*	*	48.2539	*

* Cost of Untreated Material not carred in Tie Plant Accounts.
** Cost of Untreated Lumber at Seattle includes cost of 21,547 F.B.M. only.
# Cost of Treatment of Lumber at Seattle includes $455.53 for Framing and $107.74 for Surfacing.

	BRAINERD						PARADISE				SEATTLE	
	#1	#2	#3	#4	#4A	#5	#3	#4	#4A	#5	#3	#4
No. of Pieces	85	3958	2384	5260	112	6409	5183	7924	825	12496	1326	2460
Equal F.B.M.	2040	110824	76288	196373	4443	286002	165856	295829	32725	557634	42432	91840
F.B.M. per Tie	24	28	32	37.3333	39.6667	44.625	32	37.3333	39.6667	44.625	32	37.3333
Cost of Untreated Material per M-FBM			87.7189					59.4876			64.4250	
Cost of Untreated Tie	2.105	2.456	2.807	3.275	3.480	3.914	1.904	2.221	2.360	2.655	2.062	2.405
Cost of Treatment per M-FBM			21.6583					16.3446			25.6734	
Cost of Treatment per Tie	.520	.606	.693	.808	.859	.967	.523	.610	.648	.729	.822	.958
Cost of Treated Material per M-FBM			109.3772					75.8322			90.0984	
Cost per Treated Tie	2.625	3.062	3.500	4.083	4.339	4.881	2.427	2.831	3.008	3.384	2.884	3.363

Office of Gen'l. Supt. Timber Preservation
Brainerd, Minnesota, May 10th, 1956

Copy - Mr. H. R. Peterson, Mr. W. K. Smallridge, Mr. W. J. Drannen
(2)

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Office of Gen'l. Supt. Timber Preservation
Brainerd, Minnesota, May 10th, 1956

Copy - Mr. H. R. Peterson, Mr. W. K. Smallridge, Mr. W. J. Drannen

3659

Brainerd, Minnesota, February 8th, 1956

Mr. H. R. Peterson:

The original letter from Mr. Franciosi dated December 12, 1955, was sent you by Mr. Burgess and you forwarded it to me on December 19, with notation to "Please Handle".

The original letter and copy of my reply of December 20, were returned to you on that date.

AJL/dm

St. Paul, Minnesota
December 22, 1955

File: 3659

Mr. C. H. Burgess:

Returning letter from Mr. G. F. Franciosi, President, Societa Italiana Rueping, received on December 19 with your note.

For your information and file, attached is copy of Mr. Loom's reply to Mr. Franciosi.

HRP/jwm
attachments

H. R. PETERSON

3659

December 20th, 1955

Mr. G. F. Francioni
President
Societa Italiana Rueping
Napoli (303) - Via Taddeo Da Sessa, 144
Italy

Dear Sir:

Referring to your letter of December 12, to the Northern Pacific Railroad Company, St. Paul, Minnesota, which was forwarded to this office for reply.

In 1925, after several years of experimental work, we commenced incising of all softwood ties in order to obtain best penetration, especially in our Mountain Douglas Fir, which as you may know is the most difficult to treat of all woods we have.

In view of the improved penetration and distribution of preservative in softwoods at our Paradise, Montana, and Seattle, Washington treating plants, in 1946 we commenced incising all hardwood ties at our Brainerd, Minnesota plant where the principal species is red oak.

It is our practice to incise only immediately before treatment. Our incisors are installed in direct connection with our adzing and boring machines and adzing, boring and incising is performed in one operation at a rate of 8-1/2 ties per minute.

We have conducted experiments at our own plants and we are observing results at other railroad plants to determine if incising will minimize checking and splitting of ties during the seasoning period to the extent that it would pay to incise our hardwood ties on arrival at the plant, before they are cross piled for air seasoning.

So far, we are not satisfied that the benefits derived from incising green ties would justify the additional costs and we are therefore continuing to incise all species immediately before treatment to obtain best penetration and distribution of preservative.

Yours truly,

A. J. LOOM
Gen'l. Supt. Timber Preservation

AJL/dm
Cy C+B

Quantity of Wood Treated and Preservatives Used in the United States

By

Gordon D. Merrick

These statistics are preliminary and subject to revision. A final and more detailed report will be released at a later date.

Division of Forest Economics Research
Forest Service
United States Department of Agriculture

In cooperation with the
American Wood Preservers' Association

April 1956

FOREWORD

The following statistics are compiled from reports of 300 of the 331 known wood-treating plants and are estimated to include about 95 percent of the output of the wood preservation industry in 1955. The statistics are preliminary and show the activities of the reporting plants only, with no estimate for the 18 pressure, 8 nonpressure, and 5 combined pressure-and-nonpressure plants which have not yet reported. A complete and more detailed report will be issued later.

Reports to date show 3 percent greater volume of material treated in 1955 than in 1954 in spite of a decrease of 18 percent in the volume of crossties treated. The increase is due chiefly to an increase of 41 percent in the volume of poles treated.

Use of pentachlorophenol increased 18 percent, while creosote decreased about 3 percent.

This preliminary report is made possible by the prompt reporting and fine cooperation of the majority of the wood preservation plants.

NUMBER OF TREATING PLANTS - 1955

	Commercial 1/	Railroad 2/	Other 3/	Idle	Plants not reporting
Region 1					
Connecticut	1	-	-	-	-
Delaware	1	-	-	-	-
Maine	-	-	-	-	-
Maryland	5	-	-	-	-
New Hampshire	1	-	-	-	-
New Jersey	4	1	-	-	1
New York	3	-	-	-	-
Pennsylvania	5	1	2	1	-
Rhode Island	1	-	-	-	-
Virginia	7	-	-	-	1
West Virginia	1	-	2	1	-
Total	29	2	4	2	2
Region 2					
Alabama	11	-	1	1	2
Arkansas	7	-	-	-	-
Florida	24	-	-	-	3
Georgia	16	-	1	-	1
Kentucky	5	-	-	-	1
Louisiana	24	-	-	-	3
Mississippi	16	-	-	-	1
North Carolina	11	-	1	-	4
Oklahoma	5	-	-	-	-
South Carolina	8	-	-	-	1
Tennessee	7	-	-	-	-
Texas	17	2	1	-	5
Total	151	2	4	1	21
Region 3					
Illinois	9	1	-	-	1
Indiana	4	-	-	-	1
Iowa	1	-	-	-	-
Michigan	1	-	1	-	-

NUMBER OF TREATING PLANTS - 1955 (Cont.)

	Commercial 1/	Railroad 2/	Other 3/	Idle	Plants not reporting
Region 3 (Cont.)					
Minnesota	10	1	-	1	-
Missouri	5	-	-	-	-
Ohio	8	-	-	-	-
Wisconsin	3	-	1	-	-
Total	41	2	2	1	2
Region 4					
Arizona	-	-	2	-	-
Colorado	4	-	-	-	-
Idaho	8	-	1	-	-
Montana	4	2	1	-	2
New Mexico	-	2	-	-	-
South Dakota	1	-	-	-	-
Utah	1	-	-	-	-
Wyoming	2	1	-	-	-
Total	20	5	4	-	2
Region 5					
California	5	1	2	-	2
Oregon	8	1	-	-	-
Washington	11	-	-	2	2
Total	24	2	2	2	4
Grant Total	265	13	16	6	31

1/ Plants that treat wood for sale or by contract.
2/ Plants owned or operated by railroads for the treatment principally of railroad material.
3/ Plants owned or operated by public utilities, mining companies, or government agencies.

TABLE 1 - TOTAL MATERIAL TREATED IN 1954 AND 1955

By Product in Usual Unit of Measurement

	1954 Final	1955 Preliminary
Poles . . . . . number	4,998,016	6,608,011
Crossties . . . . . number	33,510,196	26,432,118
Lumber & timbers 1/ board feet	444,075,300	425,234,196
Fence posts . . . . . number	23,761,818	23,376,416
Piling . . . . . linear feet	18,053,895	19,212,340
Switch ties . . . board feet	89,067,061	84,864,325
Crossarms . . . . . number	4,276,642	4,887,425
Wood blocks . . square yards	1,558,912	1,581,138
Miscellaneous . . cubic feet	2,770,445	3,500,006

By Product in Cubic Feet 1/

Poles	63,873,288	90,090,714
Crossties	105,529,303	85,983,680
Lumber & timbers 1/	37,006,274	35,436,183
Fence posts	15,231,700	16,025,702
Piling	12,317,768	12,893,401
Switch ties	7,422,255	7,072,027
Crossarms	3,743,192	4,355,673
Wood blocks	2,768,472	2,822,964
Miscellaneous	2,770,445	3,500,006
Total	250,662,697	258,180,350

1/ Includes material (mostly lumber) given fire-retardant treatment (tables 13 and 14).
2/ Based on cubic footage currently reported by treating plants.

TABLE 2 - PRESERVATIVES AND FIRE RETARDANTS USED IN 1954 AND 1955

Liquids

	Gallons	
	1954 Final	1955 Preliminary
Creosote:		
Straight creosote	86,862,493	92,881,109
Creosote content of --		
Creosote-coal tar solution	39,058,529	31,118,339
Creosote-petroleum solution	23,033,717	21,304,914
Other solutions	460,813	16,473
Total creosote	149,415,552	145,320,835
Coal tar content of creosote-coal tar solution	19,164,603	14,527,909
Total creosote and coal tar	168,580,155	159,848,744
Petroleum content of --		
Creosote-petroleum solution	27,344,712	25,107,017
Petroleum-pentachlorophenol solution	19,903,021	23,561,328
Other solutions	445,844	0
Total petroleum	47,693,577	48,668,345
Miscellaneous	102,413	109,856
Total liquids	216,376,145	208,626,945

TABLE 2 - continued

Solids

	Pounds	
	1954	1955
Pentachlorophenol[1/]	8,340,997	9,879,188
Wolman salts (Tanalith)	1,966,790	2,133,215
Celcure	1,088,948	1,431,780
Chromated zinc chloride	2,409,857	887,303
Minalith	307,799	883,947
Protexol and pyresote	721,570	682,709
Boliden salt	275,695	341,856
Chemonite	279,766	254,701
Copperized chromated zinc chloride	408,638	223,118
Osmose	56,775	194,961
All other	157,855	195,246
Total solids	16,014,690	17,108,024

1/ The quantity of ready mixed petroleum-pentachlorophenol solution reported used was broken down by means of the following computation: Number of gallons x 7.65 = pounds of solution. Pounds of solution x .05 = pounds of pentachlorophenol. Pounds of solution minus pounds of pentachlorophenol = pounds of petroleum. Pounds of petroleum ÷ 7.40 gallons of petroleum.

TABLE 3 - CROSSTIES TREATED IN 1955

By Preservative Used

	Number
Creosote and creosote-coal tar	15,063,053
Creosote-petroleum	11,307,775
All other	61,290
Total	26,432,118

By Kind of Wood

	Number	Percent
Oak	14,431,610	55
Douglas-fir	2,406,101	9
Gum	1,947,411	8
Lodgepole pine	579,226	2
Ponderosa pine	420,740	1
Southern pine	365,006	1
Larch	298,383	1
True firs	192,465	1
Douglas-fir and larch	140,015	1
Mixed hardwoods	5,071,353	19
Mixed softwoods	214,862	1
Not specified	364,946	1
Total	26,432,118	100

TABLE 3 - CROSSTIES TREATED IN 1955 (Cont.)

By Region

	Number
1--Atlantic Coast	3,730,614
2--Southern Coast	10,178,646
3--Interior Eastern	7,714,700
4--Interior Western	2,157,116
5--Pacific Coast	2,651,042
Total	26,432,118

Hewn and Sawn

	Number	Percent
Hewn ties reported	1,881,182	8
Sawn ties reported	22,528,051	92
Total reported by kind	24,409,233	92
Ties not reported by kind	2,022,885	8
Total	26,432,118	

TABLE 4 - POLES TREATED IN 1955

By Preservative Used

	Number
Creosote and creosote-coal tar	5,066,246
Petroleum-pentachlorophenol	1,428,470
Creosote-petroleum	98,868
All other	14,427
Total	6,608,011

By Kind of Wood and Method of Treatment

Kind of Wood	Pressure	Nonpressure	Total
Southern yellow pine	5,420,925	5,796	5,426,721
Western redcedar	3,060	336,024	339,084
Douglas-fir	231,611	36,874	268,485
Lodgepole pine	166,970	45,606	212,576
Larch	32,964	63,197	96,161
Northern white cedar	262	86,542	86,804
Jack pine	23,359	14,415	37,774
Ponderosa pine	63,474	1,982	65,456
All other and mixed	9,902	65,048	74,950
Total	5,952,527	1/655,484	6,608,011

1/ 190,316 butt treatment, 275,415 full length treatment, 189,753 not specified.

By Region

1--Atlantic Coast	192,557
2--Southern Coast	4,704,171
3--Interior Eastern	927,083
4--Interior Western	442,971
5--Pacific Coast	341,229
Total	6,608,011

TABLE 5 - LUMBER AND TIMBERS TREATED IN 1955

By Preservative Used

	Board feet
Creosote and creosote-coal tar	215,391,521
Wolman salts (Tanalith)	74,655,800
Creosote-petroleum	37,246,244
Petroleum-pentachlorophenol	38,930,310
Celcure	27,766,355
Chromated zinc chloride	5,706,875
Boliden Salt	5,675,928
Chemonite	4,857,498
All other	6,061,573
Total	416,292,104

By Kind of Wood

Southern pine	209,282,064
Douglas-fir	128,614,350
Oak	21,244,279
Gum	4,574,574
Douglas-fir and larch	1,871,498
Ponderosa pine	527,629
Lodgepole pine	351,545
White pine	200,479
All other and mixed	49,625,686
Total	416,292,104

By Region

1--Atlantic Coast	59,622,116
2--Southern Coast	208,830,332
3--Interior Eastern	54,316,431
4--Interior Western	17,810,065
5--Pacific Coast	75,713,160
Total	416,292,104

TABLE 6 - FENCE POSTS TREATED IN 1955

By Preservative Used

	Number
Creosote and creosote-coal tar	10,846,272
Creosote-petroleum	8,991,619
Petroleum-pentachlorophenol	2,793,428
All other	745,097
Total	23,376,416

By Kind of Wood

Southern pine	21,433,067
Ponderosa pine	662,264
Jack pine	486,286
Lodgepole pine	431,719
Norway pine	52,057
Western redcedar	50,844
Douglas-fir	16,856
Oak	9,646
Nothern white cedar	9,553
All other and mixed	224,124
Total	23,376,416

By Region

1--Atlantic Coast	457,540
2--Southern Coast	12,688,309
3--Interior Eastern	9,068,704
4--Interior Western	1,138,642
5--Pacific Coast	23,221
Total	23,376,416

TABLE 7 - PILING TREATED IN 1955

By Preservative Used

	Linear feet
Creosote and creosote-coal tar	18,479,519
Creosote-petroleum	653,413
All other	79,408
Total	19,212,340

By Kind of Wood

Southern pine	13,816,371
Douglas-fir	4,773,099
Oak	235,338
Larch	72,863
Jack pine	72,127
Ponderosa pine	63,405
Western redcedar	52,617
Norway pine	29,937
All other and mixed	96,583
Total	19,212,340

By Region

1--Atlantic Coast	4,805,628
2--Southern Coast	8,250,403
3--Interior Eastern	1,655,312
4--Interior Western	248,106
5--Pacific Coast	4,252,891
Total	19,212,340

TABLE 8 - SWITCH TIES TREATED IN 1955

By Preservative Used

	Board feet
Creosote and creosote-coal tar	58,161,441
Creosote-petroleum	26,537,831
All other	165,053
Total	84,864,325

By Kind of Wood

	Board feet	Percent
Oak	46,323,471	55
Gum	9,342,274	11
Douglas-fir	7,078,278	8
Southern pine	3,414,036	4
Douglas-fir and larch	2,099,431	2
Larch	596,952	1
Mixed hardwoods	15,300,046	18
Mixed softwoods	464,277	1
Not specified	245,560	1/
Total	84,864,325	100

1/ Less than 0.5 percent.

By Region

	Board feet
1--Atlantic Coast	17,460,740
2--Southern Coast	31,578,809
3--Interior Eastern	25,288,767
4--Interior Western	2,822,288
5--Pacific Coast	7,713,721
Total	84,864,325

TABLE 9 - CROSSARMS TREATED IN 1955

By Preservative Used

	Number
Creosote and creosote-coal tar	2,025,120
Petroleum-pentachlorophenol	2,851,499
All other	10,806
Total	4,887,425

By Kind of Wood and Method of Treatment

	Pressure	Nonpressure	Total
Southern pine	2,101,478	0	2,101,478
Douglas-fir	1,854,540	918,732	2,773,272
All other and mixed	12,675	0	12,675
Total	3,968,693	918,732	4,887,425

By Region

1--Atlantic Coast	268,728
2--Southern Coast	2,360,682
3--Interior Eastern	318,750
4--Interior Western	162,780
5--Pacific Coast	1,776,485
Total	4,887,425

TABLE 10 - WOOD BLOCKS TREATED IN 1955

By Preservative Used

	Square yards
Creosote and creosote-coal tar	1,157,107
All other	424,031
Total	1,581,138

By Kind of Wood

Southern pine	980,219
Oak	84,082
Gum	5,301
All other	511,536
Total	1,581,138

By Region

1--Atlantic Coast	628
2--Southern Coast	511,389
3--Interior Eastern	1,068,594
4--Interior Western	0
5--Pacific Coast	527
Total	1,581,138

TABLE 11 - MISCELLANEOUS MATERIAL TREATED IN 1955

By Preservative Used

	Cubic feet
Creosote and creosote-coal tar	1,229,506
Wolman salts (Tanalith)	613,729
Petroleum-pentachlorophenol	546,792
Creosote-petroleum	431,261
Osmose	265,787
Chromated zinc chloride	86,635
All other	326,296
Total	3,500,006

By Material Treated

	Unit	No. units	Cubic feet
Mine tbrs & ties	bd.ft.	6,980,948	581,746
Mine ties	bd.ft.	6,202,880	516,938
Mine timbers	bd.ft.	6,115,429	509,619
Car material	bd.ft.	3,455,107	288,025
Crossing plank	bd.ft.	3,404,706	283,725
Tie plugs	no.	159,257,017	211,000
Highway posts	no.	80,275	151,447
Conduit	cu.ft.	133,959	133,959
Plywood	sq.ft.	1,539,981	70,922
Bridge ties	bd.ft.	736,361	61,364
Pole stubs	no.	10,122	33,653
Anchor logs	no.	8,773	20,708
All other	cu.ft.	636,900	636,900
Total			3,500,006

By Region

	Cubic feet
1--Atlantic Coast	816,839
2--Southern Coast	1,260,259
3--Interior Eastern	314,737
4--Interior Western	960,065
5--Pacific Coast	148,106
Total	3,500,006

TABLE 12 - FIRE-RETARDANT TREATMENT OF WOOD IN 1955 1/

Region	Quantity	Chemicals used
	Board feet	Pounds
1--Atlantic Coast	1,600,009	715,703
2--Southern Coast	369,424	75,656
3--Interior Eastern	2/	2/
4--Interior Western	2/	2/
5--Pacific Coast	2,083,407	668,074
Total	4,275,131	1,552,656

TABLE 13 - COMBINED PRESERVATIVE AND FIRE-RETARDANT TREATMENT OF WOOD IN 1955 1/

	Quantity	Chemicals used
	Board feet	Pounds
1--Atlantic Coast	3,357,759	214,688
2--Southern Coast	635,555	92,234
3--Interior Eastern	656,016	83,779
4-- Interior Western	2/	2/
5--Pacific Coast	2/	2/
Total	4,666,961	393,711

1/ The quantities given in this table are included with lumber and timbers in Table 1.

2/ Less than three plants reporting. Data withheld to avoid disclosure of individual plant operations.

Mr. H. R. Peterson:

Please forward to A. J. Loom, instructing him to answer direct.

C. H. Burgess

OFFICE OF
CHIEF ENGINEER
DEC 19 1955
NORTHERN PACIFIC RY. CO.
ST. PAUL, MINN.

AJL

HRP mailed today

Acknowledged 12/20

HRP 12/19

SOCIETÀ ITALIANA RUEPING
PER L'INIEZIONE DEL LEGNAME
SOCIETÀ PER AZIONI
CAPITALE L. 200.000.000 I. V.
NAPOLI (303) - VIA TADDEO DA SESSA, 144

TELEGRAMMI: RUEPING - NAPOLI
TELEFONI { DIREZIONE 56.200
STABILIMETO 50.568
C. C. I. A. NAPOLI 8766
C. C. P. 6/3724

NAPOLI February 4, 1956

Northern Pacific Railway Company
N.P.Depot,
Brainerd, Minnesota

Dear Sir;

I have your letter of December 20th in answer to our inquiry about incising beech and oak cross ties.

I want to thank you for the information therein contained, and I would be delighted to reciprocate your courtesies.

Yours sincerely,

(G.F.Franciosi)
President

GFF/cf

Dile ✓ 2

SOCIETA ITALIANA RUEPING
PER L'INIEZIONE DEL LEGNAME
NAPOLI (303) - VIA TADDEO DA SESSA, 144

NAPOLI December 12, 1955

Noted to A J L to answer direct 12/19

Northern Pacific Railroad Company
St. Paul, Minnesota

Gentlemen;

We recently have been doing some experimental work on incising beech and oak cross ties, not only for the purpose of improving penetration but also to minimize seasoning checks. This originated from the information that we found on hardwood incising in A W P A Proceedings and other publications during the last few years.

We have written to the F P L in Madison, Wisconsin asking them for a list of U.S. treating companies and railroads who have adopted this method or have studied it. The name of your Railroad is included in the list that was sent to us in answer to our inquiry.

We would very much appreciat it if you could let us know whether you are doing, or consider using, incising on your hardwood cross ties and in case you do, whether this method is or will be applied on all hardwood cross ties or only on a selective basis.

All information you will be able to give us will be fully appreciated and we want to thank you in advance.

Yours sincerely,

(G.F.Franciosi)
President

Orig. noted
GFF/cf to A J L 12/19 and
Rec'd to CMS 12/22

3659

St. Paul, Minn.
November 7, 1955.

Mr. A. J. Loom:

You will recall that when we were at the Chapman Research Laboratories mention was made of the use of bottom oil from the fractionating still handling catalytic cracked petroleum for dissolving penta or creosote oil in the preservation of ties. From what I gathered in the conversation, I believe that this oil has many desirable properties, especially for the treatment of Intermountain Fir.

It is a waste oil for which I know of no market and it should be cheaper than #6 oil. It is high in aromatics and waxes, aromatics being in themselves, in a minor way, wood preservatives and the waxes would tend to coat the exterior of the tie and offer mechanical-wear protection as well as fill the cracks and checking. I understood it to be of high viscosity and it has a very desirable viscosity index. When heated to 200° the material should penetrate as well if not better than #6 oil.

I think the use of this type of oil would bear investigating and the next time you are at St. Paul, I would like to discuss the matter further with you and possibly contact the Purchasing Dept. and have them obtain prices and specifications.

H. M. SCHUDLICH

Engineer of Water Service.

HMS/gs

cc: Mr. H. R. Peterson.

3659

S-69-210

St. Paul, September 6, 1955

Mr. H. R. Peterson:

You have my letter of August 15 with regard to Mr. Perrin's missive of the 10th covering layout and copy for second advertisement on pressure creosoted wood.

In the recent tear sheet received from Mr. Perrin with copy of first advertisement, it is apparent that the writer again drew his own conclusions rather than relying on information given him. I refer particularly to the statement about: "The creosoted bridge is still brand new.....although this bridge has fresh water flowing under it" and the "untreated bridge spans a dry road". I certainly gave the gentleman no such information as obviously a sandy road condition such as the 1949 untreated bridge spanned near Lake Phelan was the most severe case for developing rot in cedar piling. I would have thought that this would have been checked up in the proof reading although I did not get a chance to see it.

By sent to LLP with return of proof.

WRB:m

District Engineer

see my letter 8/16 in file attached

I referred to 1st Adv. for which proof is Perrin's letter 8/23
Yours 8/16 covers 2nd Adv.
WRB 9/7/55

3659

St. Paul 1, Minn., August 23, 1955
File: A-A25

Mr. H. R. Peterson,
Chief Engineer

Attached for your information is a proof of the United States Steel Company's creosote ad featuring Northern Pacific picture and quoting District Engineer Bjorklund. I also am giving Mr. Bjorklund proofs of the ad.

Manager, Advertising
and Publicity Department

efw
Att.
CC - Mr. W. A. Bjorklund,
District Engineer

St. Paul, August 16, 1955

3659

Mr. L. L. Perrin:

Referring to your letter of August 10, file A-A25, with papers from the U. S. Steel Corporation pertaining to a second advertisement on pressure creosoted wood.

Your papers are returned together with copy of Mr. Bjorklund's letter of August 15 advising as to suggested corrections.

H. R. PETERSON

HRP/jwm

attachments

3659

S-69-210

St. Paul, August 15, 1955

Mr. H. R. Peterson:

Returning herewith Mr. Perrin's letter of the 10th, layout and copy for second advertisement on pressure creosoted wood:

I do not understand where the statement developed about the Leech Lake Bridge having been built in 1919. However, the man who was here was taking notes in a small book. I presume that there was confusion in his deciphering of his notes.

I would suggest that the paragraph relative to Leech Lake Bridge be rewritten approximately, as follows:

> "The ability of creosote to resist rot is effectively demonstrated in the 680 l. f. of creosoted treated bridges constructed at 12 different locations," says Walter R. Bjorklund, District Engineer. "Built in 1919, the bridge pilings look as good as the day they were installed."

I presume that we are safe in expecting the life of 30 years from our creosoted ties. Those in the past have given us at least 25 years and now with improved ballast, heavier and more rigid rail, we should expect a longer life of ties. I have discussed this on numerous occasions with Mr. Loom and we both agree that 35 years would not be unusual although the figure of 30 should be satisfactory.

I assume that you have the figures on the pressure creosoted communication pole as being 180,000 instead of 258,000. The figure on the sheet being returned herewith must have been received from the Communications Department.

WRB:m
Att.

District Engineer

St. Paul 1, Minn., August 10, 1955
File: A-A25

[redacted] H. R. Peterson,
Chief Engineer

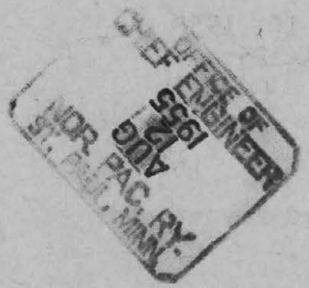
U. S. Steel Corporation has sent the attached layout and copy for a second advertisement on pressure creosoted wood.

Are there any corrections or suggested changes?

WRB
Pls review to
show Forest information
HRP 8/12

Manager, Advertising
and Publicity Department

efw
Att.


OFFICE OF
CHIEF ENGINEER
1955
AUG
NOR. PAC. RY.
ST. PAUL, MINN.

3659

St. Paul, Minnesota
April 6, 1955

Mr. W. K. Smallridge:

Referring to your letter March 28th, file 490-2 "N" and returning letter from Norfolk & Western Railway Co.:

We do not need any of the items listed.

Chief Engineer

TRG/dob
Attch.

St. Paul, Minn.
March 28, 1955

400-2 "N"

Mr. H. R. Peterson:

With return of attached letter from Norfolk and Western Railway Company, will you please advise to what extent you may be interested.

W. K. Smallridge.

WCN/ld
att.

A. J. Loom?
HRP 3/30

Mr. Peterson:
Believe we do not need any of the items listed.
Jean
4/5-55

St. Paul, March 11, 1955

File 182-2

Mr. H. R. Peterson
Chief Engineer

Referring to your letter of March 9 with which you furnished a copy of Mr. Loom's letter dated March 7 regarding a likely change in requirements for creosote and fuel oil.

Deferring deliveries offers no difficulties and can be arranged on advice from Mr. Loom as to when he wishes shipments suspended. It will be necessary; however, that in view of the limited supply of tank cars that this department be given at least thirty days advance notice before deliveries are to be resumed.

WKS:VN

cc: Mr. A. J. Loom

W K Smallridge

3659

St. Paul, Minnesota
March 9, 1955

Mr. W. K. Smallridge:

Attached is copy of Mr. Loom's letter of March 7 calling to attention surplus oil situation which has developed account of reduction in the current tie treating program. You will note Mr. Loom's comments in regard to postponement of oil delivery insofar as possible.

I see no objections to the diversion of oil to the Seattle plant if agreeable to you and that no extra cost will be involved.

HRP/jwm
attachment

H. R. PETERSON

cc: Mr. A. J. Loom

Brainerd, Minnesota, March 7th, 1955

Mr. H. R. Peterson:

Referring to our recent telephone conversation about the estimated number of ties that will need to be treated for use this year after completing treatment of all ties for which we have received approved requisitions to date.

As I mentioned we will complete present orders this month and plan to reduce forces to the minimum that will be actually required from April 1st to late next fall, to handle incoming stock, apply anti-checking irons, replace rotten sill ties, clean out working tanks, repair leaky steam coils, make general repairs to equipment and narrow gauge tracks and provide watchman service. Also to continue to treat lumber and miscellaneous materials at Brainerd.

Last August when our requisition TP-8-4-B, ED 1087, GSK 15584-8 was made and approved to cover estimated quantities of creosote and fuel oil required it was anticipated that we would need about the same quantities as we used the year previous and the requisition was made on that basis.

It now develops that 1955 tie requirements will be about 95,000 ties less from Brainerd and about 64,000 ties less from Paradise than we estimated.

After we complete tie treatment this month there will be due on Purchase Requisitions, for delivery to Brainerd and Paradise, the following quantities of oil for which we will not have storage capacity at these plants after our storage tanks are full.

	Gallons	
	Creosote	Fuel Oil
Brainerd	70,000	54,000
Paradise	27,000	14,000
Requisitioned in excess of apparent current requirements	97,000	68,000

All of this oil will be required for treatment of ties for the anticipated line changes you have mentioned but if these ties will not be called for until possibly next fall, they do not need to be treated for several months.

We expect treatment of lumber and miscellaneous materials will continue as it has at Brainerd and possibly there will be occasional orders on the Paradise plant so some of the present apparent surplus oil will be used before we start the 1956 tie treating program next fall.

We will continue to keep the Purchasing Department informed of actual delivery requirements and if they cannot postpone delivery of all the apparent surplus we have ordered for Brainerd and Paradise, I would suggest that some of it can be diverted to the Seattle plant.

Will discuss this with you at the first opportunity.

AJL/dm

Cy WLC 3/9

3659

Brainerd, Minnesota, December 1st, 1954

Mr. H. R. Peterson:

With return of the attached paper entitled "Handling Creosote at Wood Preserving Plants" by Mr. P. B. Mayfield of the Barrett Company.

Mr. Mayfield is a member of the executive committee of the American Wood Preservers' Association and is on the waiting list of applicants for Associate Membership in A.R.E.A. Committee 17. He has been in his present position since 1949 and for a long time previous to that he was Manager of Research & Development in the International Creosoting and Construction Co. of Galveston, Texas, so has a lot of actual experience.

I have known Mr. Mayfield for many years and believe his paper the best I have seen on this subject. I am therefore asking him to send me more copies so I can give one to each of our treating engineers, as you will note from copy of my letter attached.

AJL/dm

December 1st, 1954

Mr. P. B. Mayfield
Technical Consultant
Barrett Division
Allied Chemical & Dye Corporation
40 Rector Street
New York 6, New York

Dear Mr. Mayfield:

I wish to thank you for sending me a copy of your paper entitled "Handling Creosote at Wood Preserving Plants" which I received with your letter of November 18th.

In my estimation your paper covers this subject thoroughly and will prove very helpful not only to beginners in the industry but also as a standard reference and reminder for old operators who from their own personal experience I believe will all agree with the statements and suggestions you have compiled.

Five additional copies would be greatly appreciated.

Yours truly,

AJL/dm

A. J. LOOM
Gen'l. Supt. Timber Preservation

3659

Brainerd, Minnesota, November 30th, 1954

Mr. H. R. Peterson:

In reply to your letter of November 27th calling attention to poor penetration in some of the treated ties shipped recently to Pasco from Paradise Tie Plant.

The treating reports showed less than five pounds per cubic foot and I made two trips to Paradise while these ties were being treated to be assured that every effort was being made to get the best penetration and absorption possible.

I found that the larch ties took treatment fairly well but there was a higher percentage of Mountain Fir than usual and the ties had not been on hand long enough to be appreciably seasoned. Only one charge was treated in each retort in each 24 hour period and everything possible was done to improve the treatment but I know that some of these ties had poor penetration.

Treatment during August, 1954, averaged as follows: In oil at 189° F. for 10 hours followed by pressure of 150 lbs. for 11 hours and 44 minutes. Temperature 190° F. during pressure period; Vacuum 21" for One hour and 37 minutes. Absorption 4.65 lbs. per cu. ft.; Penetration .4". Plant output 2 charges per day.

Present treatment of seasoned No. 5 ties of the same species is averaging over 7 lbs. per cubic foot with .70" penetration and output is 3 charges per day.

We will continue to obtain best output we can consistent with best treatment possible.

Mr Robey & RWH Pasco

to note & return.

HRP 12/3

AJL/dm

Noted 12/6 RWH
" 12/7 R.A.R.


DEC
1954
ST. PAUL

Train 5, Tacoma Division
November 27, 1954

Mr. A. J. Loom:

While at Pasco hump yard yesterday, we noted a few creosoted track ties had been bumped so that small slivering occurred to expose white wood.

On close observation of such ties, we noted that the penetration of treatment was extremely small.

If I recall correctly, you had verbally advised me that you are not securing depth of penetration in the larch and Rocky Mountain red fir ties as compared to penetration in the Douglas fir ties. Is this correct?

HRP/jwm

H. R. PETERSON

BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

CREOSOTE & PITCH SALES

November 18, 1954

Mr. H. R. Peterson, Chief Engineer
Northern Pacific Railway Co.
176 East Fifth St.
St. Paul 1, Minn.

Dear Mr. Peterson:

Attached is a copy of a paper "Handling Creosote at Wood Preserving Plants", which was presented at a meeting of the Southern Pressure Treaters Association in New Orleans, October 26, 1954. Your comments and suggestions would be welcomed and helpful.

Additional copies of the paper are available and will be sent to you on request.

Very truly yours,

P. B. Mayfield

P. B. MAYFIELD
Technical Consultant

PBM/l
Enclosure

A. J. Soom
Pile advice
11/28


OFFICE OF
CHIEF ENGINEER
NOV
26
1954
MOR. PAC
ST. PAUL

HANDLING CREOSOTE AT WOOD PRESERVING PLANTS

P. B. MAYFIELD
Technical Consultant

BARRETT DIVISION
Allied Chemical & Dye Corporation

HANDLING CREOSOTE AT WOOD PRESERVING PLANTS

Creosote has been used successfully in wood preservation for over 100 years and with this long experience its processing in creosote-treating plants has become very well understood and standardized. It is difficult, therefore, to present information on the handling of creosote which is new to all operators of treating plants. However, a review of methods of handling creosote may be helpful to those who have not been engaged in the industry for a long time and may contain some suggestions which will be of benefit even to experienced operators.

CREOSOTE AND ITS CHARACTERISTICS

Before discussing the handling of creosote, it might be pertinent to comment briefly on its characteristics. According to specifications of the American Wood-Preservers' Association, creosote "shall be a distillate derived entirely from tar produced by the carbonization of bituminous coal". In the production of gas and coke from bituminous coal, by heating the coal in closed ovens, tar is collected as a liquid condensate of the volatile products resulting from the destructive distillation of the coal. The tar is distilled to make creosote. In this distillation the low-boiling fractions which are the source of solvents and chemicals are removed first, and are followed by the creosote fraction; pitch remains as a residue in the still. Creosote is composed of hundreds of different aromatic compounds with boiling points over a wide temperature range. Only a dozen of these are present in any appreciable quantity. While many of the individual compounds of creosote are toxic to certain destroyers of wood, the efficiency of creosote as a wood preservative is not due primarily to one or a few highly effective components, but to the many and varied compounds which occur throughout its boiling range. A review of the literature has shown that this view of creosote's preservative action is quite general. The value of creosote as a wood preservative depends largely on whether or not it remains in the wood under the conditions and throughout the period of service. Therefore, it is not important whether creosote contains 100 or 200 compounds or whether or not some particular compound is present. It is important that a large number of the characteristic creosote components stay in the wood for the desired service life.

If creosote were separated into its components, one would find that more than 90% of them are solid at room temperature. Taken all together they make a finely balanced liquid with varying amounts of crystals at room temperature. These "salts", sometimes erroneously termed sludge, will settle to the bottom of tanks and storage vessels at lower temperatures and are composed of crystalline compounds boiling at temperatures substantially below 355° C. The crystals are a normal part of

creosote and can be maintained as part of the creosote when their nature is understood and proper handling methods are used. The temperatures used in treating are far above those required to dissolve the crystals and there is no danger of crystals separating from the oil at these temperatures.

HANDLING DELIVERIES OF CREOSOTE

In the handling of creosote the operator of a wood preserving plant is first concerned with the material when it arrives at his plant, generally in a tank car. The handling of such a receipt involves measuring the quantity, sampling and unloading of the creosote. Some recommendations pertaining to these three features are presented.

MEASURING QUANTITY:

It is necessary to know the calibrated volume of the tank car and the temperature of the creosote. Using a rule or gauge, measure the distance from the shell to the surface of the liquid, which may be in the dome or below the shell. Determine the temperature by means of a cup-type thermometer suspended to the center of the car. Using the tank car table, add to the rated volume the amount in the dome or subtract the volume below the shell. Correct the measured volume to volume at 100° F. using American Wood-Preservers' Association Volume Correction Table F - 1.

SAMPLING:

To obtain truly representative samples it is necessary to give consideration to the possible presence of free water and crystalline matter. It is usually necessary to take separate groups of samples for the determination of water and for the analysis of the creosote.

Water may be present dispersed in the oil and sometimes as free water. Observe whether or not free water is on the surface of the material. If so, measure the depth of the layer and determine its volume by reference to tank car tables.

One method of measuring the depth of free water is to use a glass tube, about one inch in diameter and attached to a rod, which can be closed at the bottom by a conical cork attached to a cord passing through the tube. With the cork hanging about a foot below the bottom of the glass tube, the tube may be slowly lowered vertically into the material until its lower end has reached a depth well below the suspected depth of free water, when the cork should be raised to seal the bottom of the tube. The tube may then be withdrawn and the height of the free water in the tube observed. If it is not possible to see the line of demarcation readily, loosen the cork and allow the contents of the tube to

drain out slowly, stopping the flow when free water appears, and then measuring the height of the free water in the tube. Calculate the percentage of free water, based on the volume of creosote in the tank car.

To obtain a sample for the determination of dispersed water, take four samples of equal volume by means of a thief or bottle as follows: one sample a foot below the lower level of free water, two additional samples at the center and one sample one foot above the bottom of the car. Combine these four samples and mix them thoroughly. This composite sample is used to determine the percentage of dispersed water which must be added to the free water to determine the total water content. If the tank car contains crystalline matter, this composite sample is not suitable for analysis other than the determination of water. The presence of crystals in the bottom of the car may be determined by probing.

If the tank car contains crystals, connect steam lines to the heating coils and start heating, with precautions in early stages to avoid rapid, uneven expansion and breakage of the coils. Connect air lines and begin slow agitation of the creosote with a stream of air. If the tank car is not equipped with air agitation lines, temporary lines may be installed. These lines may be made from ½-inch pipe, bent in such form that they can be inserted through the dome, and will extend along the bottom of the car to each end; portions of the lines near the end of the car should be drilled on each side with $\frac{1}{8}$ - inch holes at one - foot spacing, and portions toward the center of the car with $\frac{3}{32}$ - inch holes at one - foot spacing. Where there may not be adequate space for expansion during heating, care should be taken to avoid overflow from the car; if necessary, a minimum quantity of material should be drawn off. The creosote should be heated to the temperature necessary (up to 200° F.) to effect solution of the crystalline matter within a reasonable time. When creosote in the car has been heated so that it is completely liquefied and has been thoroughly agitated, obtain samples for analysis and tests. Take 4 samples of equal volume, as described in sampling for dispersed water. These samples are combined and mixed thoroughly; the composite sample is used for the analysis of the creosote.

UNLOADING:

The tank car may be unloaded either directly to working tanks or to storage. Various methods have been used to determine whether or not the car is completely unloaded. The Barrett plant at Birmingham has developed an apparatus for viewing ends of tank cars from the inside, which has been found to be quite convenient and useful. This equipment, which is illustrated in Figure 1, should not be used while the tank car is so warm that vapors will condense on the mirror.

STORAGE:

For ease of handling creosote at treating plants, it is preferable that the material remain in a uniform liquid condition. If the creosote is held at a temperature of 100 to 110° F., practically all of the crystals will remain in solution. Some plants are able to maintain this temperature in their storage tanks by passing exhaust steam and hot water from the plant through the coils of the storage tanks. Allowing the creosote to cool to lower temperatures and heating intermittently for short periods to higher temperatures may permit the accumulation of crystals which will be difficult to dissolve. When desirable to remove all of the oil from a tank, it should be heated to around 175° F. and held at this temperature until the crystals are in solution. An agitation system is helpful in stirring up and dissolving the crystals. It is not advisable to attempt to remove the crystals 6" or more below the heating coils as they will quickly accumulate again in this portion of the tank, which remains relatively cold. If creosote is allowed to drop to a low temperature in storage, an appreciable amount of crystals may drop out. Even so, some wood preserving plants in the south do not heat their storage tanks, finding that the angle of slippage of the crystals will reach a constant after which no further crystals will accumulate. With this method of handling, considerable quantities of crystals may settle out in a large flat tank before the angle of slippage is reached and an appreciable part of the storage volume will be lost. In tanks of relatively small diameter, the loss of effective storage space will be much less.

CHANGES IN CREOSOTE DURING USE

WATER:

The most common source of water picked up by creosote is the stock being treated. With the usual balance of volume between the working tank and cylinder, the average pick-up of water from green stock will amount to approximately $\frac{1}{2}$% per charge. Leaking coils, either in the working tank or in the cylinder, are common causes of water pick-up. Coils may be tested for leakage by closing both the inlet and outlet valves while steam is in the coils and then allowing it to condense. The condensation of steam in the coils causes a vacuum which will draw in creosote, and, when steam is again turned through the coils, creosote will show up in the first condensate coming through. An added difficulty with leaking coils is that creosote can be driven through the leaks in the coils back into the boiler when the pressure in the cylinder exceeds that in the boiler. Transfer of creosote from storage can also be a cause for water pick-up when free water has been allowed to accumulate on the top of the oil. As oil is removed

from the storage tank to a low level it is advisable to check for free water and separate this water before transferring the creosote to a working tank.

The pick-up of water from wood during treatment represents a loss of creosote to the treaters provided no correction is made for the water pick-up. For example, if the retention requirements of the specification are met and the working stock of creosote shows an increase in water of $\frac{1}{2}$ of 1%, then this represents a loss of 250 gallons of creosote when the working stock amounts to 50,000 gallons.

A method of correction for water at plants determining retentions from gauge readings, developed by the Bell Telephone Laboratories, Inc., is given below. In this method the A reading is the initial volume of oil in the working tank and the D reading is the final volume, after all oil not remaining in the wood has been returned to the tank.

"5.11 At plants employing gauges showing volume of oil in treating tanks, the observed readings shall first be reduced to 100° F., by applying the proper factor ***.

5.111 When treatment is being conducted on a water-interchange basis, the A and D readings at 100° F. shall then be reduced to a water free basis by multiplying them by,

$$\frac{100 - \%\text{ water by volume in oil at that reading}}{100}$$

5.112 ***

5.113 The A - D reading at 100° F. water-free multiplied by the proper tank constant (***), and the dry weight of oil per gallon, computed from the observed specific gravity and determined water content (***) will give the total pounds of dry oil used in treatment".

Knowing the pounds of dry oil used in the treatment, the pounds of oil containing a known percentage of water may be calculated.

Water may be removed from creosote either by separation, by boiling in a tank, or by boiling under vacuum in the cylinder. Separation is the least expensive and can be accomplished by allowing the creosote to stand and then drawing off the water, either by a set of draw-off valves or by siphoning from the top. Water is slow to separate from creosote which has been in use for a long time and has picked up a considerable quantity of sugars and resins from the wood and solid matter not soluble in the creosote. Water may be slowly removed by boiling in a tank, but the loss of creosote is likely to be considerable where there is a large volume of water present. Boiling under vacuum in the cylinder is a quick way to remove water, and, when done correctly, the loss of creosote is held to a minimum. To hold down losses due to oil being carried over with water vapor, the cylinder should be only a little over half full. Before boiling under vacuum

in the cylinder is started, the oil should be heated to a temperature of around 200° F. The vacuum should then be applied slowly. After the temperature of the creosote has fallen to about 175° F., it is advisable to discontinue the vacuum and to raise the temperature again before re-applying the vacuum. Even though water boils under vacuum at lower temperatures, the rate of removal is higher at the higher temperature.

It is sometimes possible to remove small percentages of free water by blowing the creosote with air while it is held in the work tank at 200 to 210° F. This will not remove water from water-in-oil emulsions, as the air will not come in contact with the water. Blowing with air will cause more loss of creosote then either boiling in the cylinder under vacuum or boiling in the tank. However, it is sometimes useful when it is necessary to remove a small amount of water between the treatment of charges, especially when cylinder space is not available and time does not permit raising the temperature of the creosote in the tank to the boiling point and then allowing it to cool to treating temperatures.

BENZENE - INSOLUBLE:

Before considering changes in the insoluble content of creosote, it may be of interest to discuss the nature of material in creosote insoluble in benzene. The type of material insoluble in benzene in new creosote consists primarily of high molecular weight compounds which are soluble in creosote but are precipitated by benzene. A very small amount of material may be present which is insoluble in the creosote. As creosote is used in treatments, the benzene-insoluble may increase by the pick-up of truly insoluble materials, such as dirt, iron rust, fragments of wood, etc. and also by the pick-up of substances extracted from the wood, as shown several years ago by M.S. Hudson of the Taylor-Colquitt Company. This material includes sugars removed from the wood during steaming, which may amount to 50% or more of the total insoluble matter as determined by the American Wood-Preservers' Association test. Since the sugars are soluble in water, their relative quantity may be determined by extracting with hot water the filtered benzene-insoluble matter as found in the standard test. The effect of this small amount of water soluble material on penetration or cleanliness should be negligible considering all of the other factors involved.

Various methods have been employed to reduce the amount of material insoluble in benzene. Filter presses and centrifuges have been tried for this purpose, but they are expensive to buy and operate and the loss of creosote in removing the insoluble material is considerable. Manufacturers of equipment continue to show interest in these methods for mechanically removing insoluble matter and it may be that some apparatus will be developed which will accomplish the desired reduction at low cost.

The quantity of benzene-insoluble matter can be reduced appreciably by boiling the creosote to a water content of ½% or less and then allowing the creosote to stand in a tank. The removal of water breaks the partial emulsion of suspended solid matter, allowing this material to settle, and also concentrates the sugar solution to a specific gravity such that the solution also settles to the bottom. Such a treated creosote drawn from the tank above the level of about three feet from the bottom will show a greatly reduced benzene-insoluble content. For example, some used oil in a plant showed about 50% water and 4% benzene-insoluble; after the water was removed and the oil allowed to stand, the benzene-insoluble content of the oil drawn from the tank was only 0.6%.

The material drawn off during the final vacuum following the treatment of green pine generally contains from 15 to 50% of water, and this water will contain a considerable quantity of sugars which will show up as benzene-insoluble if the water is removed simply by boiling. If this material, after gauging, is accumulated in a separate tank and allowed to stand, it is possible to remove the water, thus preventing some build-up of benzene-insoluble matter in the stock. Separation of water in some cases may be slow; and if the water drawn from the top of the tank contains considerable creosote, it can be passed through the waste-water separating tank. The oil drawn from a point about three feet above the bottom of the separation tank will have a low water content. The suspended solid matter will settle to the bottom of the tank and it will be necessary to clean the tank at frequent intervals to prevent build-up to the point where solid matter will pass out with the settled oil.

Intermixing in the cylinder or lines with creosote-coal tar, creosote-petroleum or penta solution will cause a rapid build-up in benzene-insoluble matter. Separate lines and pumps will completely eliminate this source of increased insoluble content; otherwise, in operating, the plant drainage of the cylinder and lines should be complete to prevent intermixing.

Did you ever wonder about the composition of the material which frequently must be cleaned from the bottom of your work tank? We obtained samples of this material for examination in our laboratory and the following is a typical analysis of the material, which was a viscous carbonaceous emulsion containing no crystals and only a trace of free oil.

		Remarks
Apparent Sp. Gr.		1.200
Water,	% by wt of sample	31.5
Soluble in benzene	% by wt. of sample	37.3
Insoluble in benzene	% by wt. of sample	31.2

		Remarks
Analysis of soluble in benzene		
Sp. Gr. 38/15.5° C.	1.067	
Creosoter's distillation, % by wt.		
to 210° C.	0.0	
235° C.	5.3	
270° C.	29.3	
315° C.	53.7	
355° C.	80.9	
Residue	18.6	
Sp. Gr. of fractions 38/38° C.		
235-315° C.	1.033	
315-355° C.	1.101	
Sulfon. Res. of fracs. ml./100g. Dist.,		
235-315° C.	3.8	
315-355° C.	2.8	
Analysis of insoluble in benzene		
Soluble in water, % by wt.	51.3	Slightly acid to litmus. No chlorides. No sulfates. Extract evaporates to dark brown residue. Odor strongly suggests caramelized wood saps and sugars.
Insoluble in water, % by wt.	36.6	Carbonaceous matter, wood dust, dirt, etc.
Ash, % by wt.	12.1	Strong odor of charring wood resins and other vegetable matter during ignition.

This analysis shows that 32% of the material was water, 37% creosote and 31% material insoluble in benzene. The material soluble in benzene passes all creosote specifications and the benzene - and water - insoluble was composed of carbonaceous matter, wood dust, dirt, etc., containing 12% of ash. You might question how water could be in the bottom of a tank of creosote when water is lighter than creosote. This can be explained by the fact that the water is present as a solution that contains $^1/_2$ its weight of wood sugars and therefore has a specific gravity higher than creosote.

OTHER PROPERTIES:

Tests of used creosote are not likely to exceed specification limitations on points other than water and benzene insoluble. However, if the creosote becomes quite dirty or is intermixed with solution, the coke residue might become too high. Also, where creosote is held at high temperatures for long periods in open tanks or tanks with large vents, it may lose enough light distillate to cause it to fall below the minimum limits set for distillate at 235° C. To reduce loss by evaporation, working tanks should have normally closed vents which can be opened when necessary. Some tanks have water seals on the vents, which will prevent loss. The limits on coke residue and distillation established by American Wood-Preservers' Association specifications are believed to be sufficiently liberal to allow the creosote to be consumed in normal operations before it fails to meet the tolerancess of the specification.

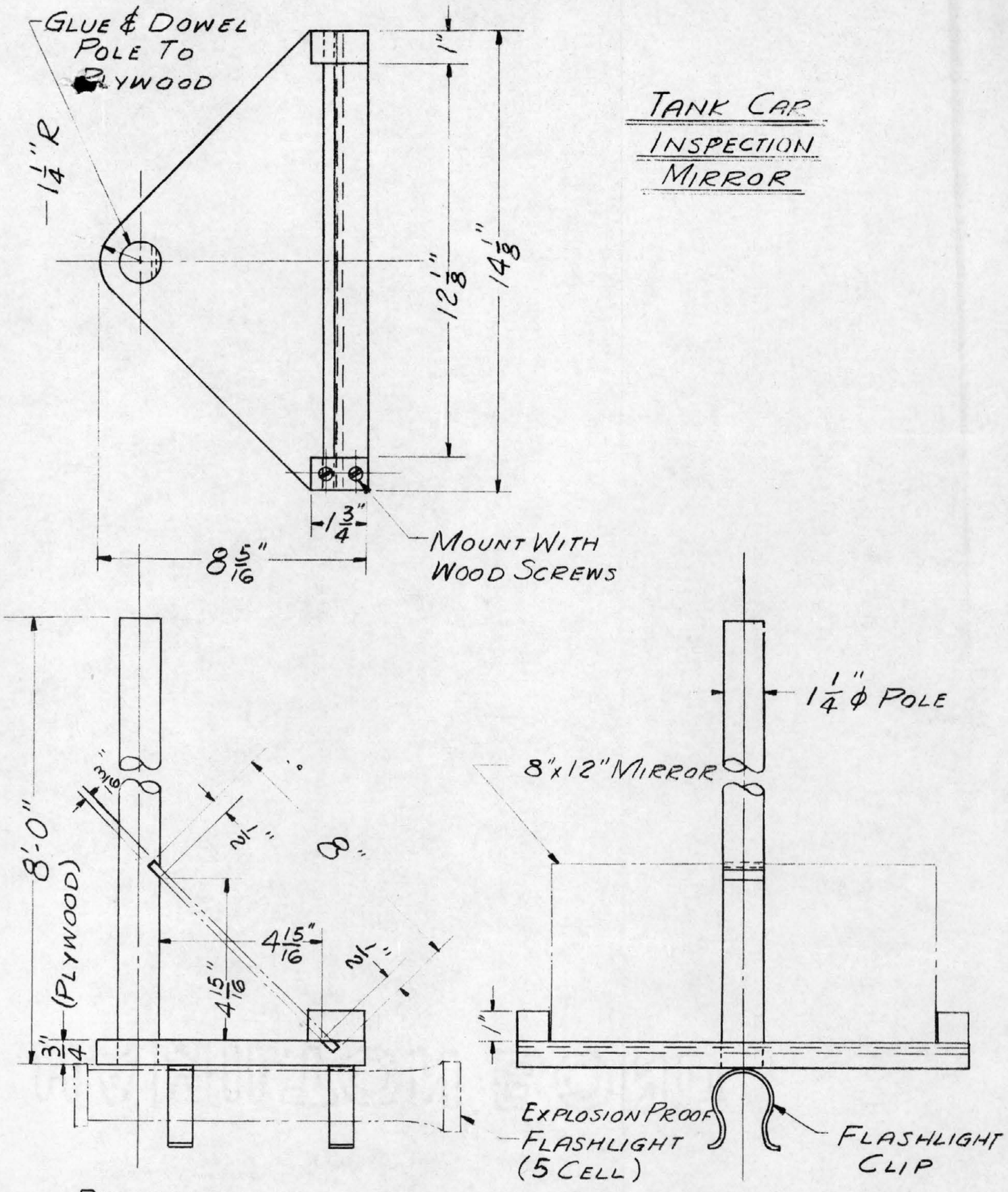
DISPOSAL OF PLANT WASTE WATER

Recent State and Federal laws have made it necessary for operators of wood preserving plants to give more consideration to the problem of disposal of waste water. When used properly in conjunction with beds of coke or hay, the ordinary baffle-type separator will separate most of the creosote from the water. Live steam should never be blown into material flowing to the separator, as emulsions will be formed which are very difficult to separate. The flow to the tank should be as quiet as possible, with a minimum of turbulence. The flow through the separator should be very slow and uniform. The separator should be pumped out frequently to prevent accumulation of creosote, and the hay or coke bed should be renewed often enough to keep it functioning satisfactorily. Other types of separators have been used successfuly. When available, a small pond will help to maintain a satisfactory outflow of water and will allow slow-settling materials to fall out. Separators of this kind will not remove dissolved phenolics and will not remove dissolved organic matter which came from the wood and is subject to fermentation. Removal of such materials will require special treatment for compliance with new laws. A committee of the American Wood-Preservers' Association is studying the disposal of waste water at creosoting plants and is expected to develop information which will be reported yearly. Plant operators will do well to follow reports of this committee carefully.

In conclusion, I would like to state again that creosote has been used successfully for 100 years in wood preserving plants and experience has demonstrated successful methods for handling the material. It is hoped that this review of handling methods has been of interest and will present some useful information to the wood preserving plant operators.

P. B. MAYFIELD

FIGURE 1



PRECAUTION:
TO BE USED ONLY WHEN CARS HAVE BEEN PROPERLY AIRED OUT & ARE FREE OF VAPORS (OPEN MAN-HOLE VENTING)
CARS SHOULD NOT BE HOT WHEN INSPECTED

3659

Brainerd, Minnesota, September 9th, 1954

Mr. H. R. Peterson:

Referring to your letter of September 8th about the Dow Chemical Company's efforts to interest us in treatment of ties with a solution of 3.5 to 5 percent Pentachlorophenol in heavy petroleum instead of our standard 50 percent creosote solution with heavy petroleum and thereby effect a saving of three to four cents per tie.

I am keeping in close touch with the development of all new wood preservatives and so far I believe there is absolutely no evidence that any other preservative is as satisfactory as creosote for treatment of track ties. In fact, a recent survey proves that about 90 percent of all forest products given preservative treatment in this country are treated with creosote. It is only for purposes that do not permit the use of creosote that there is any appreciable expansion in the use of other preservatives. Treatment of wood for purposes other than ties, timbers, piling, posts, etc., is increasing and there is a wide field for preservatives that are cleaner and less odorous than creosote but I do not believe anyone except the promoters of Penta, claims that any other preservative would prove more effective or economical than creosote for track ties. Leading authorities positively do not.

A saving of three or four cents per tie in first cost would not in my opinion result in any ultimate economy for the reason that I do not believe Penta treated ties would last as long as the ties we are treating with 50-50 creosote-petroleum solution.

I know Mr. Olson quite well and have had several discussions with him but he has never recommended to me that we should treat track ties with Penta. Shall be glad to have him visit our Paradise plant at any time but the plant is now closed down and will not resume operation until possibly the last half of November.

AJL/dm

3659

Saint Paul, September 8, 1954

MR. A. J. LOOM:

Mr. George E. Olson of the Dow Chemical Co. was in my office yesterday endeavoring to interest us in the use of PENTACHLOROPHENOL treatment of track ties; and he estimated a saving of three to four cents per track tie with the use of 3.5 to 5 per cent pentachlorophenol and heavy black oil, as compared to the use of our present 50-50 creosote oil treatment.

I assume that you are keeping in close touch with the expansion and use of this product and tests as to service life. You will undoubtedly hear from Mr. Olson, as he was interested in visiting the Paradise plant in particular, in order to convince your foreman as to the advisability of such change-over.

Apparently the oil refineries in the Billings area are now developing an over-supply of heavy black oil which they are anxious to dispose of, at some return.

Apparently Mr. Olson will also visit the Somers plant which I believe serves the Great Northern.

p/s

3659

September 21, 1953

WEST OREGON LUMBER COMPANY
Box 6106,
Portland 9, Oregon

Gentlemen:

Your letter of the 10th, addressed to the Northern Pacific at Brainerd has been referred to me, in connection with treating plant equipment being offered for sale.

Your letter has been referred to Mr. A. J. Loom, our General Superintendent Timber Preservation, for his consideration and advice as to any equipment in which we may be interested.

I regret to advise that we are not interested at this time in the equipment being offered.

Very truly yours,

p/s

bc- Mr. F. C. Turner

St.Paul,Minn.,Sept.16,1953

File 501

Mr.H.R.Peterson:

Attached hereto letter received from the West Oregon Lumber Company, Portland offering some treating plant equipment for sale.

No doubt, you will wish to make a direct reply to these people.

J-n

D. H. SHOEMAKER
P. R. GIBSON
J. D. WORTHING
W. R. BJORKLUND
C. E. EKBERG
S. W. LAW
G. L. SMITH
H. M. SCHUDLICH
S. H. KNIGHT
W. H. JAHN
L. B. CURTISS
R. A. SKOOGLUN

A. J. Loom

any interest

H.R.P. 9/17

H.R.P.

No.

9/15-FB

501

FCT

Noted:
H.C.C.
E.K.B.
L.A. ✓

WEST OREGON LUMBER COMPANY

BRANCH OFFICES IN SAN FRANCISCO, LOS ANGELES

BOX 6106 · PORTLAND 9, OREGON

Sept. 10, 1953

NOTED
F.C.T.
E.L.J.
K.C.T.
E.W.H.

Northern Pacific R.R. Co.,
Brainerd,
Minn.

Gentlemen:-

We are closing out our lumber treating business and expect to offer our treating plant equipment for sale. This consists of two 7'x120' retorts with all the various pumps, tanks, trams, piping, etc.

We are writing to you because of the fact that we expect to have, over and above the equipment to make up a complete treating plant, surplus trams made for retorts of 84" inside diameter. A list of pressure wood treaters in the annual proceedings of the American Wood Preservers' Association, shows you as operating one or more retorts of this diameter. These cars are made of structural steel, are approximately 8' long and are adapted to loading either lumber or round stock. They were made for 34½" gauge trackage and would perhaps require some modification in this regard for use at your plant.

This is a preliminary letter to determine whether you have any interest in procuring such trams. If you are interested, please write to us and we can get down to cases as to prices and terms.

Yours very truly,

WEST OREGON LUMBER COMPANY

C. W. Ott
Sales Manager

CWO/mmm

3659

Saint Paul, July 6, 1953

MR. H. M. TREMAINE:

Referring to your verbal advice that announcement had not been received about retirement of Mr. Willcutt, of Paradise Treating Plant:

For your information, E. L. Sears was appointed General Foreman to succeed Mr. Willcutt on September 1, 1952.

Likewise Mr. H. E. Benjamin was appointed treating inspector at Seattle on January 1,1953to succeed Mr. Stone.

p/s

cc-Mr. J. T. Derrig

3659

United States Steel Corporation

525 William Penn Place

Pittsburgh 30, Pa.

DAVID F. AUSTIN
EXECUTIVE VICE PRESIDENT
COMMERCIAL

ROBERT C. MYERS
DIRECTOR OF MARKET DEVELOPMENT

May 25, 1953

Mr. J. A. Young, Official Engineer
Northern Pacific Railway Company
St. Paul 1
Minnesota

Dear Mr. Young:

Mr. R. H. Beeder, Assistant to Chief Engineer, Atchison, Topeka & Santa Fe Railway System, reports in his article in the March issue of "Railway Purchases and Stores" that decay now accounts for only 5% of crosstie failures. What was once a primary cause of failure has now been replaced by: (1) plate cut, (2) split, and (3) shatter.

The virtual elimination of decay as a factor in crosstie life, we believe, is properly attributed to the use of creosote oil as the wood preservative. Certainly, service records offer proof of performance -- service records not on crossties alone but, as in the attached advertising reprint, on other preserved wood products.

Such proof of performance recommends that creosote oil be specified for your wood preserving job whether it's for crossties and piling, poles and crossarms, fence posts, car flooring or miscellaneous jobs.

We'll be glad to discuss applications of creosote oil with you at any time. Just call or write.

Yours very truly,

Robert C. Myers

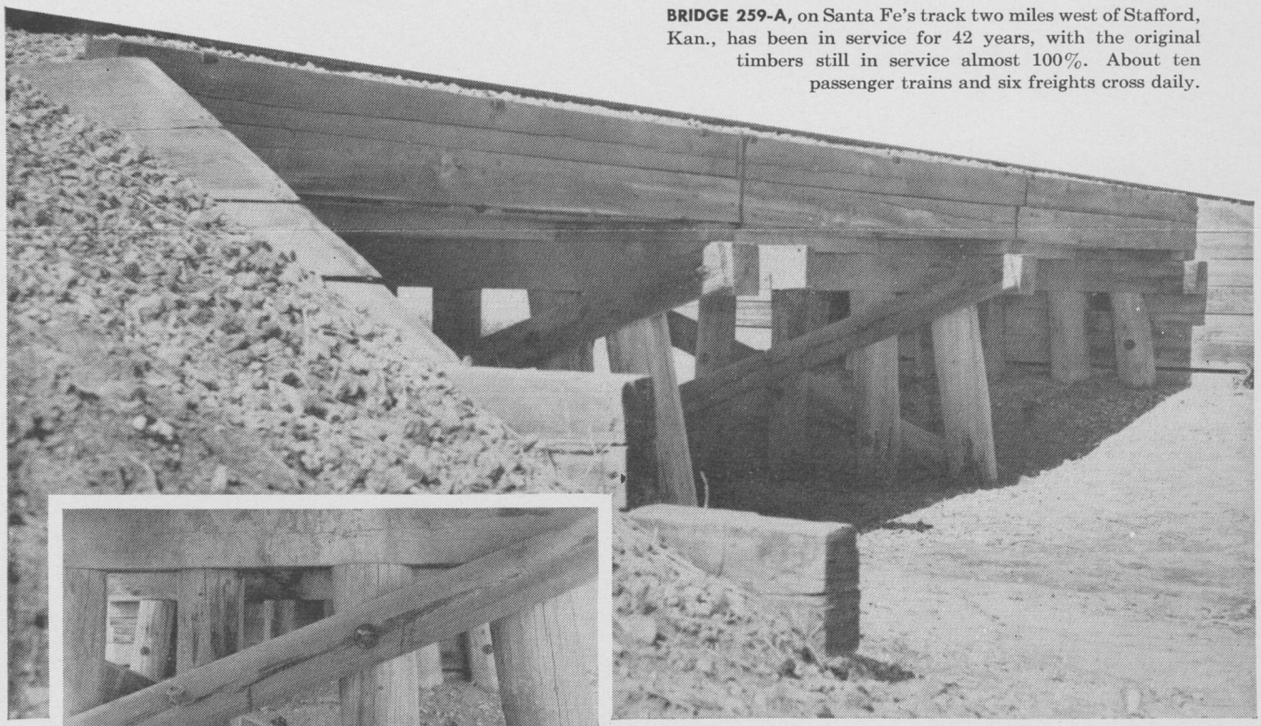
Robert C. Myers
Director of Market Development

Attachment

JAY 6/2

Here's Proof of Performance...

Pressure-creosoted in 1911, 23 of 24 piles in this Santa Fe bridge are still serviceable



BRIDGE 259-A, on Santa Fe's track two miles west of Stafford, Kan., has been in service for 42 years, with the original timbers still in service almost 100%. About ten passenger trains and six freights cross daily.

THIS CLOSE-UP of part of Bent 3, Bridge 259-A shows original piling, sway brace ends, cap and flooring.

PRESSURE-TREATMENT with Creosote Oil paid off for the Atchison, Topeka & Santa Fe Railway in construction of this 42-foot bridge on single track two miles west of Stafford, Kan.

The bridge was built in 1911 and today the original ballast flooring and curbs, the dump planks and 23 of the original 24 piles are still in service. When inspected on May 10, 1952, the pressure-creosoted wood appeared to have at least 10 more years of service remaining.

When you use a wood preservative, let service records like this be your guide. They are the main reason why Creosote Oil is the first choice of the wood preserving industry.

Creosote Oil contains not one but many compounds whose toxicity and permanence ward off attack by such wood destroyers as termites, fungi, dry rot and marine borers.

When you use treated wood, be sure it is pressure-creosoted with U·S·S Creosote Oil. It is the product of continuous processing in the world's largest tar distillation plant. For complete information, contact our nearest Coal Chemical sales office or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

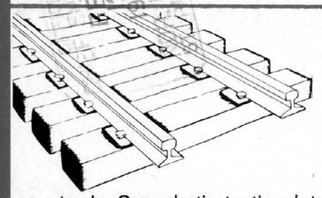
U·S·S CREOSOTE OIL

USS TRADE MARK

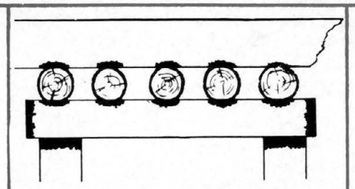
UNITED STATES STEEL

PRINTED IN U.S.A.

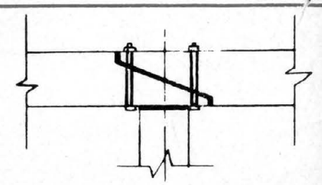
Here's where *OSMOPLASTIC* can *SAVE RAILROADS* Plenty of *MAINTENANCE MONEY* ...



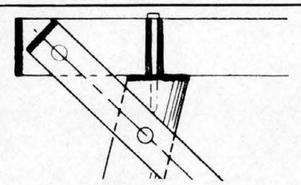
Apply Osmoplastic to tie plate surfaces and butt ends of all crossties before they are placed in road bed or after readzing.



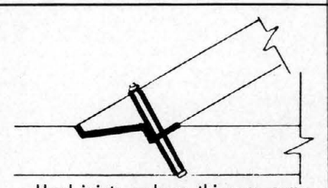
For wooden trestles, apply to surfaces of stringers which come in contact with collars, planking, earth or masonry.



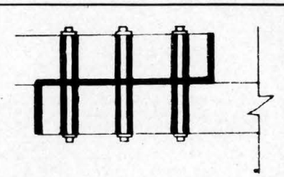
Wherever splices such as this occur in wood structures, apply to all bolt holes and wherever wood butts up to wood, steel or concrete.



Spike holes, bolt holes, butt ends and the ground line area of poles should be treated in such construction as this pile bent.



Heel joints such as this are captive spots for moisture and decay if left untreated. Heavy black areas in all sketches show where Osmoplastic should be applied.



Here's another type of splice that invites moisture and decay if left untreated. Heavy black areas in all sketches show treated zones.

OSMOPLASTIC PRICES AND SHIPPING WEIGHTS

(Osmoplastic packed in 5-gallon steel pails)

5 gallons to 45 gallons . . $5.50 per gal.
50 gallons to 95 gallons . . $5.00 per gal.
100 gallons to 495 gallons . . $4.50 per gal.
500 gallons and over . . $4.00 per gal.

SHIPPING WEIGHT: 5 GALLONS . . 72 lbs.

One gallon of Osmoplastic covers about 75 sq. ft.

All prices F.O.B. Buffalo, N. Y.
Terms 1%—10 days, 30 days net

A COMPLETE LINE OF FAMOUS WOOD PRESERVATIVES

OSMOSALTS

For treating green, freshly cut timber.

COP-R-NAP

For brush, spray or dip application to seasoned wood.

PRESERV-A-POST

Ground line fence post preservative for farmers.

PCP

Pentachlorophenol preservative for application to seasoned wood.

M-T-M

Mine Timber Mix is an aqueous gel of Osmosalts for spot application to mine timbers.

OSMOSE WOOD PRESERVING COMPANY OF AMERICA INC.

BUFFALO, NEW YORK

Printed in U.S.A.

PROTECT

YOUR CROSSTIES

Against

- PLATE CUTTING
- SPIKE KILLING

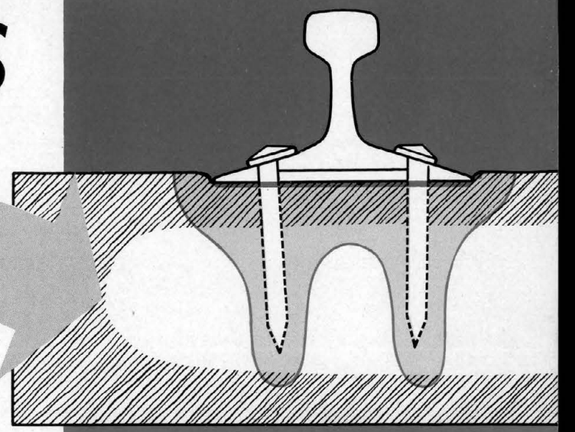
With

OSMOPLASTIC

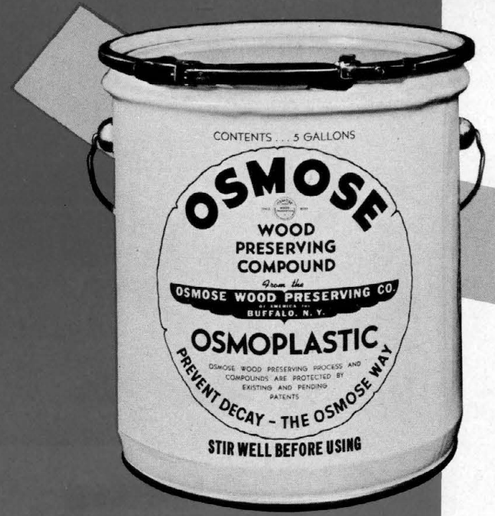
RAILROAD TIE PRESERVATIVE

OSMOPLASTIC® PENETRATES

RIGHT THROUGH THE CREOSOTE



The cut-away tie, illustrated above, graphically portrays the penetration of Osmoplastic right through creosote! Outside black area shows creosote protection, while all of green area illustrates zone protected by the Osmoplastic.



••TO MAKE TIES LAST LONGER WITH THIS 4 WAY ACTION

1 **It actually REINFORCES the creosote**

2 **It HARDENS the wood**

3 **It COMBATS spike pull**

4 **It SEALS OUT moisture and grit**

HERE'S WHAT OSMOPLASTIC IS

Osmoplastic is a mixture containing essentially Sodium Fluoride, Dinitrophenol and Potassium Bichromate suspended with mineral fibres in a gelatinous coal-tar base. The toxic chemicals in Osmoplastic penetrate, by the natural force of Osmosis, deep into the wood BOTH vertically and laterally. They also "follow" spike and bolt holes, checks and abrasions which often penetrate through the protective creosote barrier. At the same time, the coal-tar base of Osmoplastic tends to seal out the moisture and grit in these critical zones and gives added protection.

From the decay standpoint, creosoted ties have always performed satisfactorily, but these ties are subjected to plate cutting and spike killing. Osmoplastic is a tie preservative that effectively fights this mechanical wear under the tie plates.

Since the penetration of Osmoplastic chemicals is achieved by Osmosis, rather than mechanical pressure, it is equally effective on all species of tie wood, including oak, pine and fir.

Osmoplastic is recommended for spot application to such vulnerable areas as adzed or readzed surfaces and butt ends of pressure-treated or untreated mine ties, wherever any timber touches another timber or contacts the ground, at crossarm or any other framing, the ground line areas of standing poles, pole-step holes, etc. A good rule to follow is to apply Osmoplastic wherever moisture might accumulate and thus accelerate decay.

HERE'S WHAT OSMOPLASTIC WILL DO

Osmoplastic is a practical and effective treatment that will LENGTHEN THE SERVICE LIFE of your crossties. It should be applied to the tie plate surfaces of all NEW or READZED ties, inasmuch as the adzing tends to cut deeply into the creosote barrier and may even expose untreated wood.

As is well known, spikes tend to pull from the tie and thus permit horizontal movement between the tie plate and the tie. This constant friction causes "plate cutting," and can completely destroy the usefulness of any crosstie. *Osmoplastic CAN help to STOP THIS action by fighting decay and mechanical wear four different ways.* First: Osmoplastic can penetrate the original creosote treatment and thus REINFORCE its preservative effectiveness as well as protect exposed adzed surfaces from fungus attack. Second: Diffusion of the chemical salts from Osmoplastic into the wood tends to mechanically STRENGTHEN the wood. Third: Osmoplastic penetration especially "follows" spike holes down through the creosote, surrounding the spike with a protective zone that is unlikely to decay or permit quick loosening of the spikes. This tight grip of the spikes helps to prevent "plate cutting" and subsequent unfavorable results. Fourth: Loosening of spikes AND the tie plate permits moisture and railroading's natural grit to enter this critical area of the tie and accelerate its disintegration. The coal-tar base of Osmoplastic serves to SEAL OUT this moisture and grit.

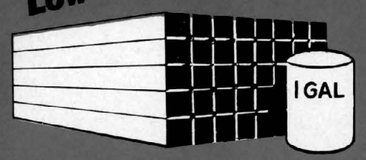
For sounder, longer-lasting ties and to CUT YOUR MAINTENANCE costs, we urge you to try Osmoplastic . . . the proven preservative that costs you as little as 10c per tie.

OSMOPLASTIC HAS BEEN THE STANDARD GROUND LINE POLE TREATMENT FOR MOST OF THIS COUNTRY'S LEADING UTILITIES FOR OVER 15 YEARS

Easy to Apply . . .

Osmoplastic can be applied by either a long-handled brush or mechanical pouring device, at temperatures as low as 10°F., without heating.

Low in Cost . . .



One gallon of Osmoplastic will treat the ends or tie plate surfaces of approximately 40 ties, or about 80 gallons to the mile if you figure 3,036 ties per mile. About 10c per tie!

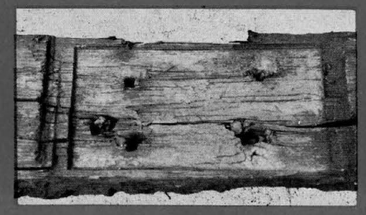
Proven Effective

We have numerous unsolicited letters in our files from Osmoplastic users attesting to the effectiveness and long term savings of Osmoplastic.

ADVANCED PLATE CUTTING

Here's a good example of what can happen to a crosstie when spikes loosen and a wobbly plate really starts to "cut."

SPIKE KILLING



When wood fibres break down or decay due to moisture, and grit grinds away, the tie can no longer hold spikes in place.

Photos courtesy Timber Engineering Co.

OSMOSE WOOD PRESERVING COMPANY OF AMERICA, INC.

BUFFALO, NEW YORK

3659

UNITED STATES STEEL COMPANY

UNITED STATES STEEL CORPORATION SUBSIDIARY

GENERAL OFFICES - 525 WILLIAM PENN PLACE

PITTSBURGH 30, PA.

DAVID F. AUSTIN
EXECUTIVE VICE PRESIDENT
COMMERCIAL

ROBERT J. RITCHEY
DIRECTOR OF MARKET DEVELOPMENT

December 1, 1952

Northern Pacific Railway,
Mr. Bernard Blum, Chief Engineer,
St. Paul, Minnesota.

Dear Sir:

1,000,000,000 is a big number. Time was when it cropped up principally in the fanciful language of our childhood along with "jillions" and "zillions".

Now, although "billions" is frequently used in adult conversation it is hard to grasp its real significance. Yet, one good way to do this is to look down a stretch of railroad track and consider that there are just about one billion crossties in place on the American railroads.

Consider too, that without creosote oil--the preservative--one billion crossties would have to be replaced four to five times more frequently. Many records, such as the enclosed, give proof of this performance. Such records in effect say, "specify creosote oil for your wood preserving jobs". And remember when you talk about poles and cross arms, fence posts, piling, timbers and car flooring, you are again talking in big numbers. These, as well as crossties, should also be pressure treated with creosote oil for the economy of long serviceability.

Yours very truly,

Robert J. Ritchey

Robert J. Ritchey
Director of Market Development

D

Here's Proof of Performance...

26 years without replacement for these pressure-creosoted ties on the Sante Fe...

THE ties of this section of the track of the Atchison, Topeka & Santa Fe Railway at Chillicothe, Ill., were installed in 1926. And not until this year were the first few replacements made.

Creosote Oil was the preservative used and once again it has proved its ability to give ties the longest possible service life. The ties along this stretch of track were sawn gum and Southern yellow pine. About 32 trains run over the track every day.

Records like these are your best guide when you choose a wood preservative.

Creosote Oil contains not one but many compounds whose toxicity and permanence ward off attack by such wood destroyers as termites, fungi, dry rot and marine borers.

When you use treated wood, be sure it is pressure-creosoted with U·S·S Creosote Oil—a product of the world's largest tar distillation plant. For complete information, contact our nearest Coal Chemical Sales Office or write directly to United States Steel Company, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

U·S·S CREOSOTE OIL

2-1690

UNITED STATES STEEL

PRINTED IN U.S.A.

Advertisement prepared by Batten, Barton, Durstine & Osborn, Inc., Pgh. to appear in:
RAILWAY PURCHASES & STORES—NOVEMBER 1952
CROSS TIE BULLETIN—NOVEMBER 1952
WOOD PRESERVING NEWS—NOVEMBER 1952
★ P. O. Pgh. 2-1690

3659

12/1/52

MR. WALTER BUEHLER,
C/o School of Forestry,
University of Florida
RR 1, Box 911
Lakeland, Florida

Dear Mr. Buehler:

I am replying to your questionnaire on crosstie preservation, in connection with a proposed address on

"Controversial Issues in Crosstie Preservation".

These replies have been largely quoted from Mr. A. J. Loom, to whom I find you sent a copy of your questionnaire. Attached is our answer to your first 11 questions.

With respect to question 12, the meat of the questionnaire, Mr. Loom had formulated his answer as follows:

> "Actual reasons for renewals. Adequate protection from mechanical wear and the maximum cost of various methods of protection that is justifiable to effect ultimate economy".

I am somewhat doubtful if the above answer is responsive to your question. While there is considerable controversy in the industry with respect to tieplates, tie pads, coating with tar products and gravel, and hold-down lag screws for tieplates, etc., it seems to me that those elements are largely mechanical features, whereas your question reads, "Controversial issues in crosstie preservation".

Through the years I have been importuned to use other toxic materials in lieu of creosote, but have not been convinced that the competitive chemicals have the same value as does coal tar creosote. You will note that I say "coal tar" creosote, because I now have in my hair a salesman for "Gasco" oilwho claims that his product, derived from the distillation of fuel oil for the production of illuminating gas, is just as effective for timber preservation as is coal tar creosote, with the possible exception of one or two little bugs which they state can be annihilated through the introduction of one or two per cent of pentachlorophenol.

I assume that it is unnecessary for me to go into a detailed dis-

cussion, for unquestionably you are far more qualified than a I to judge, but it is certainly a controversial question in timber preservation. At the present time it occupies a field which in the past was occupied by the suppliers of Wolman salts, Tma, Chemonite, etc., etc.

Very truly yours,

bb/s

att.

cc-Mr. A. J. Loom

QUESTIONNAIRE ON CROSS TIE PRESERVATION SUBMITTED TO THE CHIEF ENGINEERS OF THIRTY-SIX RAILROADS BY MR. WALTER BUEHLER.

NORTHERN PACIFIC RAILWAY

1. What species of wood do you accept for treatment?

   Answer: Brainerd Plant: Oak, Maple and Elm from Wisconsin and Minnesota.

   Paradise Plant: Inland Empire Douglas Fir, Larch, Western Yellow Pine, Lodgepole Pine and Hemlock.

   Seattle Plant: Coast Douglas Fir and Hemlock.

2. Do you segregate different species?

   Answer: Yes.

3. Do you specify different treatments for different species?

   Answer: Yes., with respect to time of treatment.

4. Do you adz and bore Before treatment?

   Answer: Yes.

5. Do you incise before treatment?

   Answer: Yes.

6. Do you air season all ties before treatment?

   Answer: It is our standard practice to air-season all ties before treatment. Ties not sufficiently air-seasoned are heated in oil or boiled under vacuum.

7. What treating method do you specify?

   Answer: Lowry and Bethel.

8. What preservative do you specify?

   Answer: 50-50 Creosote-Petroleum Solution.

9. If preservative specification varies from either A.W.P.A. or A.R.E.A., indicate how it varies.

   Answer: Does not vary from A.W.P.A. Specifications.

10. What minimum absorption and penetration do you specify?

    Answer: A.W.P.A.

11. What average life do you estimate you are getting on treated ties?

    Answer: Oak, 40 years; Other Hardwoods, 30 to 35 years. Softwoods, 25 to 30 years.

12. What, in your opinion, are some "Controversial Issues on Cross Tie Preservation?"

    Answer: Actual reasons for renewals. Adequate protection from mechanical wear and the maximum cost of various methods of protection that is justifiable to effect ultimate economy.

Saint Paul, November 28, 1952

MR. A. J. LOOM:

Attached is a questionnaire sent me by Walter Buehler of the School of Foresbry of the University of Florida.

Mr. Buehler states that during the last A.R.E.A. Convention Mr. Blair suggested as a subject for an address at the 1953 convention

"Controversial Issues in Crosstie Preservation"

and Mr. Buehler has been requested to prepare such an address, and he aks our co-operation in replying to the enclosed questionnaire.

Will you let me have your sugge tions? While I know the answers to a number of the questions I need your help on others, and particularly question 12.

As a suggestion, what do you think of bring in your friend Seykota and gas oil?

bb/s

att.

UNIVERSITY OF FLORIDA
GAINESVILLE

COLLEGE OF AGRICULTURE
SCHOOL OF FORESTRY

Lakeland, Florida
November 25, 1952

Mr. Bernard Blum,
Chief Engineer
N.P. Railroad
St. Paul 1, Minnesota

Dear Mr. Blum:

During the 1952 convention of the A.R.E.A. President Blair suggested as a subject for an address at the 1953 convention, "Controversial Issues on Cross Tie Preservation." I have been requested to prepare such an address.

Your cooperation in replying to the enclosed questionnaire would be of great assistance to me to complete the task assigned me.

Thanking you for your prompt cooperation, I am,

Very truly yours,

Walter Buehler

Walter Buehler
Consultant

R.R. 1, Box 911
Lakeland, Florida

11/18/52

MR. NELSON H. FRITZ
C/o J G White Engineering Corporation
APO 63, c/o Postmaster,
San Francisco, California

Dear Sir:

Your letter of October 21, addressed to the Northern Pacific Wood Treating Plant at PARADISE, Montana, eventually reached me.

The Railway Company operates two railway-owned treating plants: one at Paradise, Montana, and the other at Brainerd, Minnesota. In addition, we have a special contract with the West Coast Wood Preserving Company for furnishing treated ties and timbers at their Seattle plant.

As your letter was addressed to Paradise Montana I assume that you desired the costs for that point so as to cover the treatment of Inland Empire woods; and I am responding under that assumption.

Our material and supply costs for treatment of ties at the Paradise plant with 8# per cubic foot retention, using 50% No. 1 creosote and 50% fuel oil, averages as follows:

	Per M-FBM
Plant labor and superintendence (incl. tie-handling)	$ 7.00
Preservatives, 78.43 gal. at 13c	10.20
Fuel and miscellaneous	.61
Total cost per M-FBM	17.81
Total cost per av. size tie (7x8x8') 37 1/3 FBM.....	.665

The average tie, 7 x 8 x 8' is our grade 4 tie. For main line use we employ grade 5, which is 7 x 9 x 8'6".

You have doubtless addressed similar inquiry to other treating plants in the U.S.A. which would give similar infonation at other places in the country. I trust that this will meet your req irements.

Very truly yours,

bb/s

Brainerd, Minnesota, November 13th, 1952

Mr. Bernard Blum:

Your letter of the 7th regarding request from Nelson H. Fritz of the J. G. White Engineering Corporation, for breakdown of our charges for treating ties:

Our M&S cost for treatment of ties at Paradise Tie Plant with creosote petroleum solution 8 pounds per cubic foot retention, should average about as follows:

quote

	Per M-FBM
Plant labor and Suptce. (includes tie handling)	$ 7.00
Preservatives, 78.43 gal. @ 13¢	10.20
Fuel and Miscellaneous	.61
Total Cost per M-FBM	$17.81
Total Cost per average size tie (7"x8"x8') 37 1/3 FBM	$ .665

A. J. Loomis

JWS/dm

3659

Saint Paul, November 7, 1952

MR. A. J. LOOM:

Your letter of the 5th, transmitting letter of October 21 from Nelson H. Fritz of the J. G. White Engineering Corp., from Formosa, asking for breakdown of our charges for treating ties:

As Mr. Fritz' letter was addressed to the Paradise plant of the Railway I must assume that what he wanted to know was the cost at that point; and therefore I do not believe that the figures you submitted showing summary of payments we make to the West Coast Wood Preserving Co. at Seattle is responsive to his inquiry.

I would judge from his letter that he raised this same question with other plants, and it may well be that he has asked Mr. Drietzler for the same information.

I see no objection to furnishing him our costs for the Paradise plant, specifying that these figures apply solely to that point.

Will you let me have a breakdown of the present costs for Paradise.

bb/s

Brainerd, Minnesota, November 5th, 1952

Mr. Bernard Blum:

Referring to the attached letter of October 21st, from the J. G. White Engineering Corporation of New York which was forwarded to me from Paradise.

If in your estimation, this should be replied to, we can only state that we do not treat commercially at our own plants and that costs at commercial plants will average about the same as the new prices quoted in our Seattle contract plus the cost of preservatives which at present amounts to about 23¢ per gallon for creosote, 3¢ per gallon for fuel oil or 13¢ per gallon of 50-50 creosote-petroleum solution, including foreign line freight.

Total cost of treatment of ties with creosote-petroleum solution, 8 lbs. per cubic foot retention, should average about as follows:

	Per M-FBM
Plant costs including Handling & Labor (Seattle Contract)	$11.59
Preservatives, 78.43 gal. @ 13¢	10.20
Total Cost per M-FBM	$21.79
Total Cost per average size tie (7"x8"x8')37 1/3 FBM	$ .81

AJL/dm

THE J. G. WHITE ENGINEERING CORPORATION
ENGINEERS AND CONSTRUCTORS
80 BROAD STREET
NEW YORK 4, N. Y.

FIELD OFFICE
TAIPEI, TAIWAN
P. O. BOX NO. 23
TELEGRAPHIC ADDRESS
WHITENGECO. TAIPEI

TELEGRAPHIC ADDRESS
WHITENGECO. NEW YORK

October 21, 1952
File Ref. MSA 14.1

Northern Pacific Railroad Co.
Wood Treating Plant
Paradise, Montana
U. S. A.

Gentlemen:

Here in Taiwan (Formosa) the Ta Hua Chemical and Industrial Co., Ltd. has, with MSA aid, received and installed complete equipment for a Rueping process pressure treating creosoting plant. I have been assisting them in this work and have given them information relative to treating charges for railroad ties, which information I obtained from Mr. Walter Craig, Manager of the I. J. Wells Company, Salisbury, Maryland.

I understand that during the past year charges for creosoting increased in the United States. As this Taiwan company will be treating a considerable amount of ties, would you kindly send me at the APO address below a breakdown of your various treating charges. This information I will pass on to the Ta Hua Company and they will feel much better for having received the information direct from companies in the United States that treat railroad ties. I might state in passing that creosote oil here costs more than it does in the United States.

Thanking you for any information you might send, I am,

Very truly yours,

THE J. G. WHITE ENGINEERING CORPORATION

Nelson H. Fritz
Senior Forest Engineer

Nelson H. Fritz
The J.G. White Engineering Corporation
APO 63, c/o Postmaster
San Francisco, California

NHF:fhj

The Tell Tale

VOL. XIII ISSUED BY THE SAFETY DEPARTMENT, NORTHERN PACIFIC RAILWAY, ST. PAUL, MINN., SEPTEMBER 1952 NO. 9

Cross Ties--The Foundation for all Railroad Trackage

MEMO . . . FROM THE PRESIDENT

Americans, irrespective of political leanings, revere the memory of Abraham Lincoln and, I believe, generally regard him as one of our most sagacious Presidents. Devoid of high-sounding phrases, his utterances were simple and down-to-earth and many of them apply amazingly well to present day conditions. For example, the following which was quoted by Carlton A. Shively, financial writer for the New York World-Telegram & Sun, in a recent article calling attention to the advice offered by Lincoln when the nation was in a troublesome economic period and faced many difficulties similar to those besetting us today:

> "You cannot bring about prosperity by discouraging thrift. You cannot strengthen the weak by weakening the strong. You cannot help the wage earner by pulling down the wage payer. You cannot help the poor by discouraging the rich. You cannot establish sound security on borrowed money. You cannot keep out of trouble by spending more than you earn. You cannot build character and courage by taking away man's initiative and independence. You cannot help men permanently by doing for them what they could and should do for themselves."

We have just completed an inspection trip over the railroad made by members of our Board of Directors. This gave them a first-hand opportunity of noting the progress of our present program of additions and betterments, and becoming better acquainted with the problems involved in railroad operations. Stop-overs were made at several points en route in order to inspect our facilities and to meet our customers and potential customers.

I believe our Directors were impressed by our organization and what it is doing. I am very proud of it.

Robert S. Macfarlane

THE RAILROAD DOLLAR

WHERE IT COMES FROM

Freight service	79.9 cents
Passenger service	8.3 cents
Mail service	3.0 cents
Express service	0.7 cents
Miscellaneous	8.5 cents
	$ 1.00

WHERE IT GOES

Wages and Salaries	46.1 cents
Coal and Fuel	5.2 cents
Rents, etc.	4.8 cents
Taxes	11.1 cents
Depreciation	4.5 cents
Other Operating Exp.	18.2 cents
Miscellaneous	1.0 cents
Interest to bondholders	2.8 cents
Interest to preferred stockholders	0.8 cents
Interest to common stockholders	2.2 cents
Back into business	3.3 cents
	$ 1.00

The above figures are for the Class I railroads for the year 1951.

"PORK CHOP" SPECIAL MOVES OVER N.P.

A Northern Pacific Railway "Pork Chop" special train carrying a record shipment of 38 cars of hogs left the Twin Cities August 24th enroute to packing plants in Spokane, Seattle, Tacoma, and Auburn, Wash.

The special's schedule was set up for crossing the Washington-Idaho border at 12:01 a.m. August 28th, following expiration of a Washington quarantine against interstate shipments at midnight on the 27th. A 15-day quarantine order was issued following outbreak of a swine disease known as VE (vesicular exanthema).

Thirty-two cars were loaded at South St. Paul on August 23rd by E. B. Beck & Co., and six by the King Pig Company. There were approximately 2,700 hogs weighing more than half a million pounds on the special. The shipment not only was the largest transcontinental hog movement ever handled by the Northern Pacific, but the first time it has ever operated a "Pork Chop" special across the country.

CLASS F-1 (50-81)

By Ronald Nixon

In previous articles we have often mentioned the Baldwin "hog." Probably this locomotive had more to do with the successful operation of the railroad in the early days than any other. The Standards, Moguls and Ten-Wheelers were tops when it came to handling light trains on the prairies where speed was the requisite rather than power. But the high-steppers were lost on the heavy mountain grades of the Rockies and Cascades.

In 1888 the Northern Pacific ordered from Baldwin a group of low-wheeled "Consolidations" built specifically for heavy duty at moderately low speeds. They could always be found where hard work was necessary -- Livingston, Butte, Helena, Wallace, Lewiston, Ellensburg, and Auburn. The nickname "hog" became so popular on the system that the 2-8-0's were seldom called anything else.

The F-1's were so well built that most of them were in service for more than half a century. As recently as 1940 several were assigned to tough logging runs on the Tacoma Division. A number of men, including Shop Superintendent H. J. McLain of South Tacoma, regretted seeing all of them destroyed. But the demise of the F-1 occurred at a most inopportune time -- at the beginning of World War II.

Albert Farrow of Auburn (inset below) made the fine photograph of the 56 at Tacoma on February 25, 1938. The 56 carried previous numbers 485 and 84.

Mr. Farrow first started taking locomotive pictures in 1932 and now has a collection of more than 2,000 photographs. Naturally they consist mostly of N.P. engines, although Al has specialized in photos of short line and logging road power. Many of his shots have been reproduced in railroad periodicals. He was employed by the Northern Pacific in 1935 as a fireman and is now an engineer on the Tacoma Division.

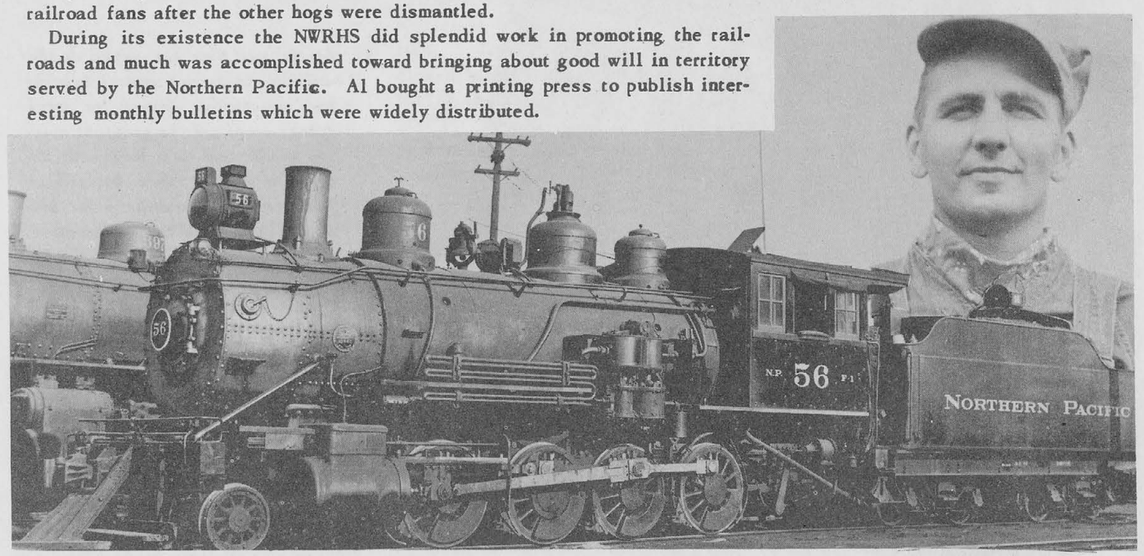
In 1938 Al, along with J. L. Roberts, baggageman, Herman Hunt, ex-NP fireman, Elton Richardson, crane operator, and others organized the Northwest Railroad Historical Society. Northern Pacific loaned them Baldwin hog No. 80 and a coach for their meetings. The organization put in long hours cleaning and polishing the 80 with the idea of keeping her on display for the benefit of railroad fans after the other hogs were dismantled.

During its existence the NWRHS did splendid work in promoting the railroads and much was accomplished toward bringing about good will in territory served by the Northern Pacific. Al bought a printing press to publish interesting monthly bulletins which were widely distributed.

The Society became very well known and soon gained members from other parts of the country, which was of benefit to the new members as well as to NWRHS. I can speak from experience in this respect. While taking pictures at Memphis in 1940, I was apprehended by an Illinois Central special agent and was accused of being a "spy." Identification, including letters from the I.C. Vice President and General Manager failed to gain my release. Finally after two hours of questioning, my NWRHS membership card did the trick and I was turned loose.

We regret that a number of these articles have an unfortunate ending. In 1941 it was decided that the 80 was more valuable as scrap and it was taken from the NWRHS. The NWRHS as a result was also abandoned. However, the former members continue to promote the railroads. Al Farrow, when he isn't running a Diesel goat in the Seattle yards, makes locomotive photographs in his home and uses his press to print engine photo lists and rail-fan stationery.

The Baldwin hog remains only a memory.



1. *Green ties received at the plant are sorted as they are unloaded.*

2. *Green ties are stock piled for from 3 to 6 months for air seasoning before treatment.*

3. *Anti-checking irons are driven in the ends of ties as soon as possible after they are received to prevent splitting during seasoning period.*

4. *After air-seasoning, ties are loaded into specially built cylindrically shaped, narrow gauge tram cars.*

5. *At the mill ties are adzed at the rail base to assure smooth bearing for tie plates, bored for track spikes to afford the greatest holding power and best treatment under tie plates, then incised on four sides to provide most uniform penetration of preservative.*

6. *Fireless steam locomotive hauls tram cars of ties about the plant.*

TIES ESSENTIAL TO RAILROADS

(By A. J. Loom)

Today, almost everywhere, preservative treated wood ties are the basic foundation for all railroad trackage.

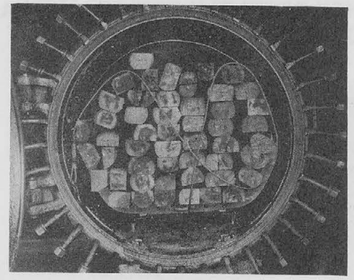
Shortly after the turn of the century farsighted men planning the future of the "Main Street of the Northwest" foresaw the advantage of using a preservative that would extend the useful life of the thousands of ties needed annually by the railroad to maintain its then 7,000 miles of trackage.

They also realized the advantages and saving that could be effected by the Northern Pacific in establishing its own processing plants, and after extensive study decided on treatment with creosote by the Lowry Process.

Two plants were constructed by the Northern Pacific in 1907. The one at Brainerd, Minnesota, commenced operation in the fall of 1907 and the one at Paradise, Montana, in the spring of 1908. In 1926 an agreement was entered into with the West Coast Wood Preserving Co., at Seattle, to treat ties and other forest products required principally for use on the Tacoma Division. Since that time it has been the practice to treat ties and other materials for use east of Glendive at Brainerd, from Glendive to Pasco at Paradise and west of Pasco at Seattle.

At present all ties treated at Brainerd are hardwoods, of which 90% are Oak from Minnesota, Wisconsin, and Iowa. At Paradise, tie stock consists principally of Douglas Fir and Larch from Montana, and at Seattle the tie stock is Coast Douglas Fir and Hemlock from Washington and Oregon.

When green ties are received at the plants, the various grades and species are sorted and stock piled for from 3 to 6 months for air-seasoning before treatment. Anti-checking irons are driven in the ends of ties as soon as possible after they are received to prevent splitting during the seasoning period and in service. After air-seasoning, ties are loaded into specially built cylindrically shaped, narrow gauge tram cars, which hold from 40 to 60 ties each, depending on the size or grade being loaded. The loaded tram cars are then hauled by narrow gauge electric and fireless steam locomotives to a mill where the ties are adzed at the rail base to assure a smooth bearing for tie plates, bored for track spikes to afford the greatest holding power of the spikes and best treatment under the tie plates and then incised on four sides to provide most uniform penetration of preservative. Ties are then reloaded on the tram cars and moved into the treating cylinders, which are 133' long and 7' in diameter, constructed of 3/4" steel boiler plate, with heavy steel doors at each end, and equipped with steam coils to maintain desired temperature. A charge for the treating cylinders consists of 16 tram cars of 8' ties or 15 tram car loads of 8'6" ties. The cylinder door is then closed and the charge submerged in oil at temperature between 180 and 200°F. When the cylinder is full, pressure pumps are started and build up hydraulic pressure of from 100 to 150 lbs. per square inch, which is held usually from 2 to 6 hours, or until the recording gauges indicate the required absorption of oil in the ties. Pressure is then released and the oil drained from the cylinder. A vacuum of about 22" is then applied for about 1 hour and 30 minutes to remove surface oil from the ties and to recover oil that otherwise would be wasted. After the vacuum period the cylinder is again drained, the door opened and the charge of treated ties is hauled to the loading dock for shipment to points for immediate use



or into the yard for storage until called for.

Eight pounds per cubic foot of 50-50 creosote-petroleum solution, which is the Northern Pacific standard treatment for ties, means 3 gallons per average size tie (7" x 8" x 8') and results in an average penetration of 3/4".

Service records indicate an average life of about 30 years for all ties treated to date and are renewed principally on account of mechanical wear. Untreated ties of the same species lasted only from 3 to 10 years and were removed principally on account of decay.

In 1907, when treatment commenced, the average number of ties renewed per mile of track maintained was 345. In 1951 this figure had been reduced to 52 and the average renewal for 7 years, 1946 to 1952 inclusive, amounts to only 60 ties per mile of cross ties maintained.

Since 1907, the purchase price of untreated ties has increased ten-fold, while cost of treatment has only doubled.

In addition to cross ties and switch ties, miscellaneous lumber, piling, poles, posts, anchor logs, tie plugs, paving blocks, etc., are also treated at Brainerd, Paradise, and Seattle to meet requirements for treated materials.

From 1907 to 1951, inclusive, total maintained mileage on the Northern Pacific has increased from 7511.8 to 9817.01 and annual system cross tie renewals have been reduced from 2,597,459 to 476,713.

The savings realized by the use of treated ties and other treated forest products has proven the wisdom of the Northern Pacific men who at that early date had the foresight to build the treating plants at Brainerd and Paradise in 1907.

THEY RECENTLY RETIRED WITH A TOTAL OF 230 YEARS' SERVICE.

RETIREMENTS

Very best wishes for many more years of peaceful, happy living to the following employes who retired. May their years of loyal service bring their just rewards and may their memories of Northern Pacific be always pleasant ones.

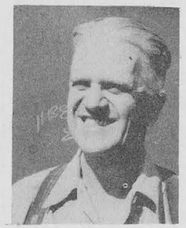
Name	Occupation when Retired	Location	Years of Service
Elmer W. Jensen	Boilermaker Foreman	South Tacoma, Wash.	44
Gustav Thompson	Locomotive Engineer	Tacoma, Wash.	46
Herbert W. Jones	Agent-Telegrapher	Elma, Wash.	34
Edward J. McClinsey	Conductor	Yakima, Wash.	39
Vincenzo Laurenzi	Section Laborer	Mandan, No. Dak.	38
Albert R. Johnson	Signal Maintainer	Thompson Falls, Mont.	33
Benjamin A. McNeil	Baggageman	Ellensburg, Wash.	31
Rocco Mediate	Section Laborer	Spokane, Wash.	34
Minor L. Kimball	Section Laborer	Prosser, Wash.	34
John A. Atchison	Locomotive Carpenter	Jamestown, No. Dak.	30
Raymond M. Cook	Redcap	Spokane, Wash.	27
George F. Shorow	Coach Cleaner	Helena, Mont.	26
Charles W. McKenna	Night Roundhouse Foreman	Butte, Mont.	43
Ralph L. Traughber	Yardmaster	Seattle, Wash.	34
Albert J. Hurt	Bill Clerk	St. Paul, Minn.	34

FRED CHRISTINE, Pipe and Tin Shop Foreman, South Tacoma, had 49 years of service.

JOHN H. MITCHELL, conductor, St. Paul Division, had 47 years of service.

T. A. SEBESTA, Agent at Brainerd, had 46 years of service.

J. W. MAIER, conductor, Rocky Mountain Division, had 45 years of service.



G. A. BRIGGS, Agent, Spangle, had 43 years of service.

Left to right: H. R. Peterson, Asst. Chief Engineer; Mr. Collins; W. H. Jahn, Valuation Engineer, and Bernard Blum, Chief Engineer.

C. A. (Charley) Collins, Chief Clerk to Valuation Engineer, retired September 1st, the 24th anniversary of his father's retirement as a conductor on the St. Paul Division. Both had 49 years of service and for the first time in 64 years no member of this family is working on the "Main Street of the Northwest."

Charley started as a brakeman; transferred to the Store Department and then to the Superintendent's office at Minneapolis. He entered the Valuation Dept. 40 years ago and has been chief clerk there 36 years.

Friends and fellow workers had an elaborate party in his honor and presented him with gifts appropriate for enjoying his hobby of woodworking.

ST. PAUL DIVISION AGENTS AND TELEGRAPHERS held their first annual picnic at Detroit Lakes, August 16th, and it was exceptionally well attended.

Among the invited guests were J. L. Fox, J. I. Steed, and Ray Setterholm, officers in the Order of Railway Telegraphers.

NORTHERN PACIFIC BENEFICIAL ASSOCIATION

FACTS AND FIGURES

July 1952

	July 1952	Year to Date 1952	Year to Date 1951	Increase D-Decrease
Revenue				
Dues - Membership	$137,191.89	$ 822,382.28	$ 771,754.69	$50,627.59
Contrib. -N. P. Ry. Co. (Cash)	6,250.00	43,750.00	40,750.00	3,000.00
-N. P. Ry. Co. (Services) (1)	5,000.00	35,000.00	35,000.00	-
-Camas Prairie R. R. Co.	258.00	1,604.15	1,521.21	82.94
Pay Patient	$ 36,874.57	252,650.96	241,427.32	11,223.64
Total Revenue	$185,574.46	$1,155,387.39	$1,090,453.22	$64,934.17
Disbursements				
Administrative (1)	$ 10,861.05	$ 79,362.45	$ 73,173.00	$ 6,189.45
Hospital	113,503.93	825,109.93	761,862.29	63,247.64
Line	31,374.05	211,401.86	193,103.20	18,298.66
Total Disbursements	$155,739.03	$1,115,874.24	$1,028,138.49	87,735.75
Other Revenue				
Interest Earned	$ 1,629.16	$ 11,414.12	$ 11,414.12	-
Other Disbursements				
Burial Benefits to Members	$ 2,175.00	$ 17,250.00	$ 19,950.00	$ 2,700.00D
Discounts to Members' Dependents	$ 2,760.03	21,781.06	20,797.48	983.58
Net Increase (Decrease) to Surplus	$ 26,529.56	$ 11,896.21	$ 32,981.37	$21,085.16D

(1) Administrative expense includes $5,000 which is offset by the same amount in contributions-Northern Pacific Railway for services, general office rent, etc.

MEDICAL SERVICE RENDERED

	Admitted to Hospitals 1952	Admitted to Hospitals 1951	Patient Days 1952	Patient Days 1951	Visits to Clinics 1952	Visits to Clinics 1951
N.P.B.A. Members	577	534	5,830	5,526	3,550	3,498
N.P. Accident Cases	30	30	321	266	173	214
Pay Patients (*)	430	315	2,051	1,823	4,468	4,549
Total	1,037	879	8,202	7,615	8,191	8,261

(*) Includes Newborn:

Glendive	21	113
Tacoma	35	109

Treated by Line Surgeons and Specialists 1951 - 3,445
1952 - 2,865

SINCE JULY 1, 1950, 1,253 NORTHERN PACIFIC EMPLOYEES HAVE ENTERED MILITARY SERVICE.

The captain said to a young recruit: "Have you washed down the bridge?"

"Yes, sir."

"Polished all the brass?"

"Yes, sir."

"Polished all the floors?"

"Yes, sir. I've even swept the horizon with a telescope."—Marius

Up the Ladder

WILLIAM P. JENSEN was appointed Assistant Manager of the Advertising and Publicity Department, a newly created position, effective Sept. 1.

Mr. Jensen, before entering the Northern Pacific, was instructor in journalism at the University of Minnesota. During World War II he was in the army five years and attained the rank of major. H. V. RHINE was promoted to Assistant Manager.

WALTER J. HUNT was appointed Assistant Director, Dept. of Agricultural Development, with headquarters at St. Paul.

K. A. BOX was appointed Trainmaster, Tacoma Division, with headquarters at Tacoma, succeeding D. D. ZIMMERMAN, who retired account ill health.

L. F. WIECKING was appointed Trainmaster Idaho Division, with headquarters at Spokane, succeeding Mr. Box.

F. W. NISKA was appointed Assistant Car Foreman at Brainerd Shops, succeeding D. T. CAPISTRANT promoted.

R. E. MATTSON has resumed his duties as General Superintendent of Transportation. During his leave from the railroad he was stationed at Dublin while serving as consultant to the Government Railways of Ireland.

THINK - PLAN IN ADVANCE

There is no single rule or slogan that will prevent you or me from being injured unless we are continuously on the alert and use our heads. One of the hardest things for a human being to do is to think and plan in advance. We all have good hindsight and can readily see, after an accident has happened, the mistakes that have been made.

Safety rules, machine guards, goggles, and safety shoes are aids and reminders of the dangers ahead.

How often have you heard a man say: "I am not paid to think - I just work here." Such a man is off to a bad start. Above everything else, he is paid to think.

Science has never devised a machine that can think for you - you must do that yourself.

Each man in the gang must know his job and do his part in a manner not only safe to himself, but he must also look out for his fellow workmen. His work must be carefully planned. He must know that Safety is the first consideration.

STATEMENT OF EMPLOYEES' REPORTABLE CASUALTIES BY CLASSES
for the period January 1 to August 31, 1952

	Divisions							Main Shops					
	Lake Supr.	St. Paul	Fargo	Yellowstone	Rocky Mtn.	Idaho	Tacoma	Como	Brainerd	Livingston	So. Tacoma	Total
Enginemen	6	2		1	1	2	2					14
Trainmen	5	8	2	5	4	12	10					46
Yardmen	2	9	1	6	5	7	5					35
Stationmen				1		2						3
Trackmen	5	9	2	8	5	3	6					38
B.& B. men	2	2		1	3	3	3					14
Shopmen		1	1	4	2	1			3	5	1	18
Carmen	1	5	2	3	2		1	2			2	18
Total	21	36	8	29	22	30	27	2	3	5	3	186
Rank	4	6	1	5	3	7	2	3	1	4	2	
Store									2	1	2	5
Dining Car												
Engineering												4
Signal												1
Chief Spl.Agent												
Communications Dept.												
Electrical Engr.												1
General Office												1
King St.Station												7
Miscellaneous												2
Grand Total	21	36	8	29	22	30	27	2	5	6	5	207
Casualty Rate per Million Man Hours (est.)												5.8

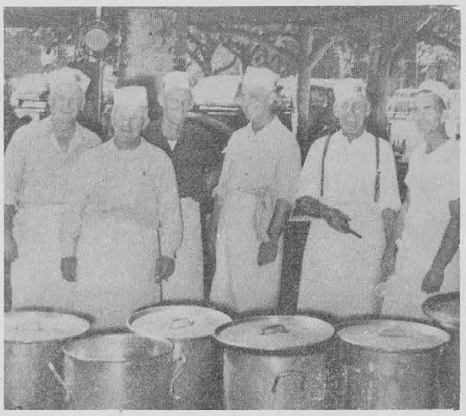
Judy Scalice, daughter of Electrician Sam Scalice, Auburn Diesel house, in an exhibition of baton twirling.

What a picnic at Lakeside Park on Five Mile Lake, August 3rd - 6,000 Tacoma Division employes and their families had a gala day.

The old boys - those over 40 years of age - started things off with a ball game. Then there were sports and contests of many varieties, all with handsome awards for the winners.

Besides all that, 300 gallons of ice cream and 350 gallons of coffee were consumed.

To give some idea as to the enormity of staging this annual event, it required 155 committeemen from all crafts and departments - more than three months of preparation just to make the 3rd Annual Tacoma Division Employes Picnic the biggest and best ever.



COFFEE COMMITTEE (L. to R.) Asst. Ydm. Joe Champie, Seattle; Machinist Inspr. Scotty Waugh (chairman); B&B Truck Driver Lawrence Murphy; B&B Foreman George Bright, and Car Inspr. Howard Barkey, of Auburn.

* * *

What Activity!

"Is there any night-life in your town?"

"Oh, yes. Every once in a while a member of our lodge dies and we sit up with the corpse!"

3659

Saint Paul, September 18, 1952

MR. A. J. LOOM:

Your letter of the 10th:

I am returning, as requested, the pamphlet issued by the Koppers Company covering the manufacture of creosote today compared with that of years ago.

No one yet has given me any convincing argument why we should change from our present practice.

bb/s

att.

Brainerd, Minnesota, September 10th, 1952

Mr. Bernard Blum:

The statement is often made by promoters of competitive wood preservatives that on account of changes in manufacture, present day creosote is not the same as the creosote we used when we started treating, about 45 years ago, and therefore does not have the same preservative value.

You may wish to note and return the attached Koppers Company booklet which confirms our belief that there still is no more effective wood preservative than the creosote we are now using.

From my observation of results, I believe the 8# treatment with 50-50 creosote-petroleum solution we have used for the past 25 years is fully as effective as the 6# treatment with straight creosote or 80-20 creosote-coal tar solution we used previous to 1925.

AJL/dm

CARBON COPY

3659

Train 4, Tacoma division, August 20, 1952

MR. LOWRY SMITH:

About ten years ago some discussion was had about the coal-tar treatment of ties, and later the Saint Paul and Tacoma people backed the coke plant at Tacoma, which did not last long, but we were fearful that we would be forced into using coal-tar.

Fortunately for us, that coke plant did not remain in the picture.

Recently, as I believe you know, there has been some pressure from the Portland Gas & Coke Co. to use their oil-creosote, but so far we have withstood that pressure.

Mr. Loom recently received from R. R. Poux, Chief Treatment Inspector of the Erie Railroad, copy of a recent report which he made to Chief Engineer Mtce of Way Blowers of the Erie, on the results of their treatment of ties with tar, carried out under the supervision of Dr. Von Schrenk but discontinued in 1948. I am attaching copy of Mr. Poux' report. That report certainly does indicate that we were fortunate in not being pushed into the coal-tar or water-gas tar treatment.

I thought you would like to see this report.

bb/s

att.

Train 4, Tacoma division, August 20, 1952

MR. A. J. LOOM:

Your letter of the 12th, transmitting copy of report from Mr. Poux of the Erie to Mr. Blowers, on the results obtained from the treatment of ties with tars.

This certainly indicates that we have been pretty lucky in being able to withstand the outside pressure. I am thinking particularly of the coke plant that was started at Tacoma a few years ago but which soon failed.

We certainly have had enough experience with the 50-50 creosote-petroleum 8-lb treatment to be convinced that we are making no mistake, or certainly no serious mistake - and you say that it is less expensive than a 6-lb 80-20 treatment.

I like the heavier treatment, as it seems to me that it gives better penetration, and therefore additional protection against mechanical wearing away of the surface of the wood.

bb/s

Brainerd, Minnesota, August 12th, 1952

Mr. Bernard Blum:

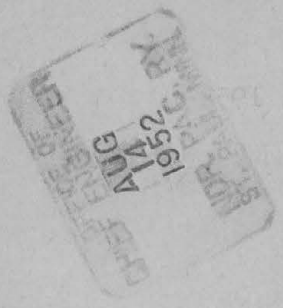
I have recently received under personal cover from Mr. R. R. Poux, Chief Treatment Inspector of the Erie, whom I introduced to you at the A.R.E.A. meeting in Chicago, copy of his report to Mr. Blowers, Chief Engineer, M & W of that railroad, on the results of their treatment of ties with tars, under supervision of Dr. Von Schrenk which was discontinued in 1948.

In our discussions about tar treatment, I told him that I knew you would like to have a copy of this report and he stated that I should feel free to let you have a copy and to discuss it with Mr. Blowers if you so desired. I am attaching two copies for your information.

You will note they are now treating with 7.5 lbs. 60-40 creosote-coal tar solution and Mr. Poux recommends treatment with 6 lbs., 80-20 creosote-coal tar solution which is about the same as we used from 1910 to 1920.

In my estimation, our 8 lb. treatment with 50-50 creosote-petroleum is at least equal to 6 lbs. of 80-20 creosote-coal tar and costs us less, but evidently the Erie is not convinced.

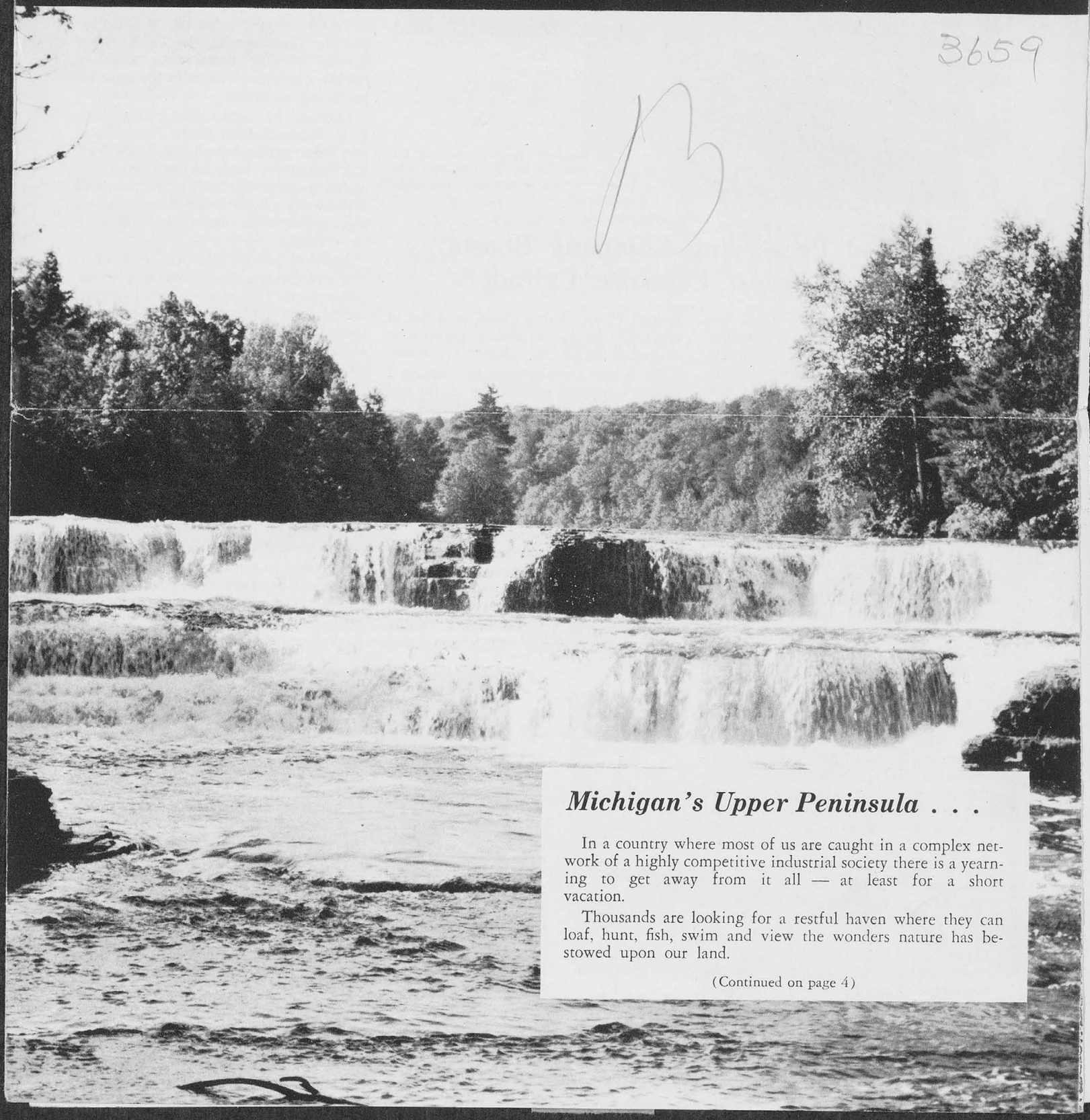
AJL/dm


AUG
1952

Penta
chlorophenol

The Wood Saver

IF IT'S WORTH BUILDING, IT'S WORTH PRESERVING! JULY 1952



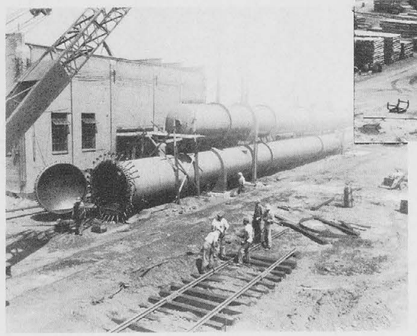
Michigan's Upper Peninsula . . .

In a country where most of us are caught in a complex network of a highly competitive industrial society there is a yearning to get away from it all — at least for a short vacation.

Thousands are looking for a restful haven where they can loaf, hunt, fish, swim and view the wonders nature has bestowed upon our land.

(Continued on page 4)

Situated between main-line tracks of two major railroads is this spacious and well-equipped storage yard of the Iowa Wood Preserving Company.



This pressure cylinder is one of the largest in the world, measuring 180 feet in length with an eight-foot diameter.

Iowa Wood Preserving Company Boasts One of the Largest Pressure Cylinders

Take most any town in Iowa and chances are its major industry is associated with agriculture. Or more specifically, corn raising and cattle feeding. To be sure, they characterize Tama, Iowa, too, but its citizens are more apt to point first to the extensive company down at the east end of Main Street.

Situated on 73 well-utilized acres is the Iowa Wood Preserving Co., which has been supplying treated timber products for use in many regions of the country since 1941.

Exclusively pressure treaters, this company recently converted one of its main cylinders to "penta" because of the demand of many customers for "penta" treated products. Since starting with this conversion on October 22, 1951, the company has been doing a rousing business supplying clean "penta"-treated poles to a number of utility companies.

Also the company is treating fence posts with "penta" for the Nebraska Bridge Supply and Lumber Co., an Omaha wholesaler who sells them either through lumber yards or directly to midwestern farmers. A specialist in pressure treating, the Iowa Wood Preserving Company will treat any wood products with "penta."

Iowa Wood Preserving does things in a big way and is not afraid to tackle any job. It has been cutting 75 and 85-foot poles with special scarf joints which are later spliced to make 150 foot poles. These treated poles are to be used on a government project. A special saw mill was rigged to cut the angle for the splice. Special V-block fixtures hold the poles in alignment during the sawing operation so that all of the 10-foot splices fit accurately.

To reduce treating costs by treating a greater volume of material per charge and to permit it to treat unusually long poles, Iowa Wood Preserving installed last July what they believe to be the longest pressure rueping cylinder in the world—180 feet long with an eight-foot diameter.

Obtaining mostly Douglas fir poles from the West Coast, Iowa Wood Preserving treats these enroute to utilities in the Eastern sector of the United States. It also treats southern pine poles.

J. H. Heilig is plant manager; F. A. Cockrel, superintendent; Louis Mochal, treating engineer; and George R. White, graduate forester, in charge of quality control.

CELEBRATE 50 YEARS

The National Lumber Manufacturers Association celebrated its 50th anniversary at its annual convention between May 8 and 10.

TEXAS FOREST SERVICE SPONSORS SUCCESSFUL ARCHITECT'S SCHOOLS

To encourage a wider use of wood, es pecially Texas species, the Texas Forest Service recently conducted a series of refresher courses throughout the state for practicing architects.

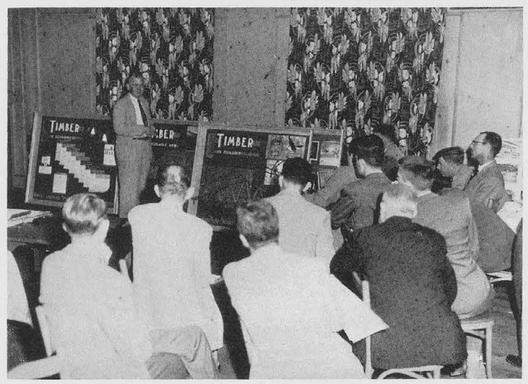
Directed by enthusiastic, hardworking E. D. Marshall, head of the Forest Products Department of the Texas Forest Service, discussions dwelt on the theme that wood properly treated is durable and suitable for a wide range of uses and enables architects to obtain greater flexibility of design.

Marshall pointed out that clean, effcctive treatments are available with pentachlorophenol for residential and industrial construction. He displayed samples of treated foundation members, siding, etc., and showed that exterior siding and other wood members properly treated with "penta" can be painted satisfactorily.

Symposiums on southern yellow pine and southern hardwoods were held at Fort Worth, College Station, Houston and San Antonio during May and early June.

Among its other educational activities, the Texas Forest Service conducted a wood preservation school in Lufkin April 4. Methods of treating native woods used for pulpwood, logs, lumber, posts, poles and timber to protect them from insects, stains and deterioration were studied.

The Dow Chemical Company's new colored motion picture, "Treat Wood Right," was part of the school program.



Dave Alexander, president of the Connector Truss Company of Houston, Texas, explains some technical points regarding the use of timber trusses during one of the architect's schools conducted in Texas recently.

Illinois Bell Telephone Uses Treated Southern Pine Poles

"As typical as apple pie and ice cream" is a phrase descriptive of America.

Almost as universal is the telephone which has had an important influence in this country and which residents now accept as a necessity. Yet the saturation point of telephones has not been reached. Illinois Bell installed a half million phones in Chicago, alone, during the past decade.

These new installations mean that Illinois Bell must add new lines and poles continually, thus adding to maintenance problems.

Illinois Bell installs about 16,000 southern yellow pine poles annually in the metropolitan area surrounding Chicago. Joslyn Manufacturing and Supply Co., of Franklin Park, Ill., pressure treats the poles with pentachlorophenol. Illinois Bell carries a stock of about 5,000 of these poles in the Melrose Park yard at all times. Principal size is 35-foot, Class 5 poles.

Illinois Bell has learned that their employees and customers appreciate the cleanliness of "penta"-treated poles. The decision to use "penta"-treated poles was influenced by the Bell Telephone Laboratories' inclusion of pentachlorophenol as one of the approved preservatives for treating timber products for telephone use. Their engineers are of the opinion that "penta" preservative applied in a suitable petroleum solution provides an oil-type preservative that should yield long-lived poles.

All Illinois Bell poles are checked for penetration of "penta" at the Joslyn Plant immediately upon treatment. Taking increment borings of "penta"-treated poles are a Joslyn Plant, foreman, left, and a utilities inspector, right. Poles received an 8-pound treatment with a minimum of 3/10 pound of dry "penta" per cubic foot in the 2nd half inch from the pole surface.

Modern installation methods enable Illinois Bell construction crews to move into a new subdivision rapidly and establish telephone service to waiting customers. Here, a crew is installing 35-foot "penta"-treated southern pine poles supplied from the Melrose Park pole yard in Canfield Ridge subdivision, Chicago.

Hardwoods Exhibit

The story of hardwoods from tree to end use will be told in a remarkable $350,000 permanent Hardwoods Exhibit which opens in September at Chicago's Museum of Science and Industry. The story of species, tree growth and structure, cutting and manufacture of hardwood lumber, veneers and plywood and the use of hardwoods in home and office will be dramatically told by modern exhibit devices. Features include the "Living Tree," Paul Bunyan room, early plywoods and veneers of the ancient Pharoahs, adhesives room and Wood Sources room showing the native habitat of 85 types of hardwood.

penta The Wood Saver

Published by The Dow Chemical Company, Midland, Michigan, manufacturers of pentachlorophenol (Dowicide* 7). 55,000 copies are distributed without charge.

Public Relations Department

*TRADE-MARK PRINTED IN U.S.A.

JULY, 1952

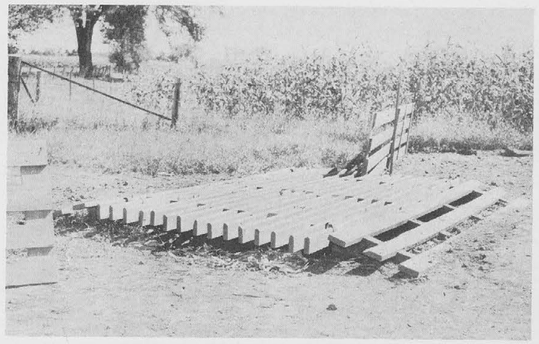
VOL. 4,, NO. 5

FARMER DEVISES TOP-OF-GROUND CATTLE GUARD

A top-of-the-ground cattle guard that can be crossed with the tractor or pick-up truck pulling portable houses, water tanks on sleds, etc., is used for hogs on the Harold L. Ahrens farm in Washington County, Iowa.

There is no need to dig a pit for this guard because it rests on three 4 x 6's placed on edge. To drive the hogs out of this meadow, a gate at the side may be opened. Ahrens said the guard is ideal for temporary fences.

Since it is built almost entirely of wood, lumber dealers in every community can supply materials from their dimensional stock. However, because wood is to be used in close contact with the ground, untreated wood will deteriorate rapidly. When treated with pentachlorophenol, service life of the structure will be increased greatly making it a practical addition to the stock farm.



Top-of-the-ground cattle guard is used for hogs on clean ground on the H. L. Ahrens farm, No. 3, Washington County, Iowa. This can be crossed with the tractor or pick-up truck pulling portable houses, water tanks on sleds, etc. To drive the hogs out of this meadow, a side gate may be opened.

Michigan's Upper Peninsula Parks Department Equipment, Buildings

(Continued from Page 1)

Such a Utopia is Michigan's Upper Peninsula, rugged old land not completely worn down by erosion. The UP has about everything the average person is seeking — ridges, forests, lakes, streams and rivers, beautiful flowers, wild game and a temperate summer climate. With those attractions, the Upper Peninsula is becoming increasingly popular with tourists and sportsmen, and, indeed, the resort business is the most important business in much of that section.

To provide adequate facilities for these visitors, the Michigan Department of Parks and Recreation has developed 11 state parks in the Upper Peninsula and this summer park directors are ready for the greatest patronage in history.

They have added a number of new picnic tables and, in some parks, new administration and concession buildings. Because of the vast forest acreage in their backyards and an adequate supply of labor from the Northern Michigan State Prison at Marquette, construction of these buildings and equipment was relatively inexpensive.

However, Glenn C. Gregg, regional parks and recreation director, realized that wood deterioration and increased replacement costs would take additional money from Michigan taxpayers. He was looking for a good wood preservative to prevent deterioration from fungi when he attended a regional parks conference more than a year ago and other park directors gave the answer — pentachlorophenol.

During the past winter's renovation season, he installed a treating tank at Baraga State Park west of Marquette since commercially treated wood was not available. Workers treated the legs of all newly-constructed picnic tables in a "penta" solution.

Ray Kangas, Baraga State Park ranger, and Albert Wallin park manager, are assembling the legs for new park benches in Michigan's Upper Peninsula.

After the bench legs are assembled they are treated in a water-repellent solution containing "penta."

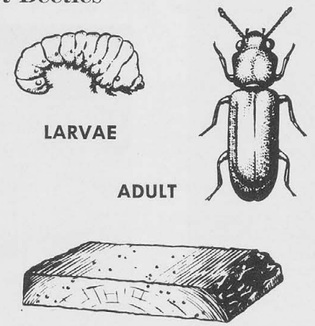
Shingles cut and fabricated by prison labor for new buildings were brought to Baraga and dip-treated. Because the native pine siding pieces were too long for the treating tank, they were erected untreated but were then given thorough "flooding" brush treatment with "penta" solutions.

Gregg plans to extend application of "penta" next year to include treatment of picnic table seats and tops with a water repellent prior to their receiving a surface finish. He plans also to re-sand used tables and treat with a water repellent solution containing "penta" during refurbishing operations.

The new spacious headquarters at Tahquamenon Falls looms out of the forests like an oasis to greet motorists. Located some 28 miles northeast of Newberry, the 80 by 100 "T" shaped "penta" treated building serves as headquarters for the ranger staff as well as a garage and workshop. Supervising the park area of 12,000 acres, Art Lauren, a veteran of 10 years in park work, expects to be host to more than 140,000 people this year.

Powder Post Beetles

One of the wood destroying insects of major economic importance is the powder post beetle. The life cycle consists of the egg, larvae, pupa and adult. Principal damage to wood by this insect is done during the larvae stage. The larvae pupates and the adult emerges in the spring leaving the characteristic pin holes in the wood. These exit holes may be the first evidence of infestation and indicate completion of at least one life cycle in the wood. "Penta" treated wood is effectively protected against this insect. Recommended reading: POWDER POST BEETLES, THEIR CONTROL—Purdue University.



Texas Architect Specifies "Penta" For Additional School Buildings

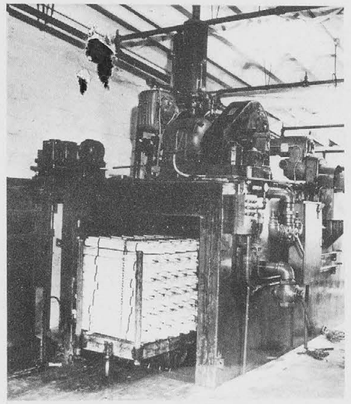
The March Wood Saver contained a story about the new school in Alvin, Texas in which architect Emory S. White had specified wood treated with pentachlorophenol.

White is also architect for the following school buildings where all the wood is to be treated with "penta" or a water repellent "penta" solution:

Elementary school building at Cleveland, Texas, containing about 9,000 square feet of floor space.

Elementary Junior High School building at Cleveland, Texas, containing about 25,600 square feet of floor space.

Junior High School building, Channelview, Texas, containing about 18,000 square feet of floor space.



KD frames being removed from the 17-foot-long vacuum chamber of the Dri-Vac wood preserving plant at Deer Park Pine Industry, Inc. Entire truck or pallet loads are placed on an elevator in the vacuum chamber for the first step in the automatic treating cycle.

NEW WOOD PRESERVING PROCESS INTRODUCED TO PACIFIC NORTHWEST

Introduction of the Dri-Vac process of wood preservation for rapid production of millwork in the Pacific Northwest is a new step announced by the Deer Park Pine Industry, Inc., at Deer Park, Washington. Their production is principally wood window frames, siding, knotty pine paneling and similar wood products.

Advantage of this process developed by Protection Products Manufacturing Company, Kalamazoo, Michigan, is more rapid drying of the wood surface so that glazing or painting can be done more quickly. Also, use of the process saves considerable storage and drying space for treated materials that would otherwise be necessary.

The Dri-Vac process makes use of "Woodlife," a water repellent preservative containing "penta," which is applied to the wood for preservation by a vacuum process. Materials are placed in the vacuum chamber where the air is partially evacuated from the wood cells. In the next step, the loads are lowered into the preservative bath where uniform penetration and distribution of the preservative is controlled by vacuum. In the final step of the automatic cycle, the excess solution is removed from the wood by increased vacuum and the surface dried by air re-entering the vacuum chamber.

The entire unit is compact, requiring a small amount of operating space. This is the first of several such units to be installed in large production plants in the future.

THE MAN WHO OWNED A NAVY

An enterprising, industrious fellow who has saved the United States thousands of tons of critical materials and thousands of dollars has recently turned part of his attention to saving money for the Navy Department.

A salvage expert, Morris Lipsett, together with his associates, has dismantled a huge section of the New York elevated railway, raised ships off Guam and Leyte and demolished 24 New York City blocks for a housing site. Building-wise, Lipsett, Inc., has completed rehabilitating the outfitting dock at the Naval Industrial Shipyard in Wilmington, Del., and Piers Nos. 5 and 6 in the Philadelphia Naval Ship Yard with economical "penta"-treated lumber.

The Wilmington project consisted of a 1,000-foot dock completed last September. This job required 2,000 existing piles to be cut off to sound timber at low water elevations while supporting the existing 4-foot, 6-inch deep concrete beams which carried the gantry crane rails. New concrete beams, 5-feet, 6 inches deep, were then poured during low tides from the new cut-off elevations to the old beams and a new decking and utility system installed.

Philadelphia repairs were finished in May. This job called for installation of "walers," or large timbers used to secure the top of pilings and act as a cushion between the piling and dock. They were installed the full length of the 800-foot piers to form a fender system and help the piers absorb the shock from ships as they come to their moorings.

Specifications by the Navy for both projects called for pressure process treatment of all timbers with either of two approved preservatives. Lipsett, Inc., chose pentachlorophenol because of a favorable price and because it is easier for the men to handle "penta"-treated wood, especially in hot weather, a Lipsett representative said.

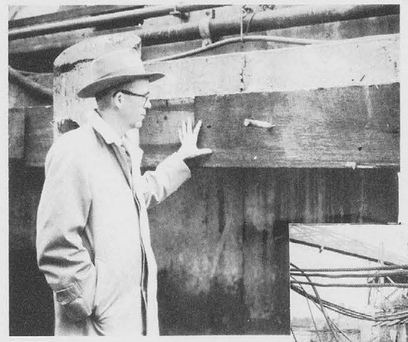
National Wood Preservers of Philadelphia pressure-treated the timbers to a retention of eight pounds of preservative per cubic foot.

These pier and dock constructions were "child's play" compared to the intricate demolishing and salvage jobs Lipsett has tackled, however.

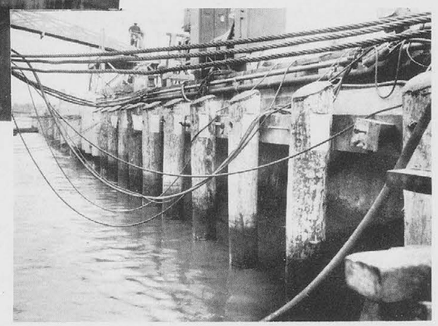
Take the Normandie. This 60,000-ton liner had to be dismantled afloat. It was towed to the Newark dock; false bulkheads were built fore and aft to keep the center of the ship buoyant. They were moved forward toward the center of the ship as the material was sheared off. The remaining buoyant center was lifted out with a crane. While the work was in progress, Lipsett's profit grew, as steel and iron prices soared from $16 to $40 a ton.

By the time the Normandie was picked to pieces, Lipsett had more ships. In the summer of 1947, he owned the fifth largest navy in the world — the battleships New Mexico, Wyoming and Idaho —which he bought for about $1,000,000.

Lipsett has always believed that no job is too difficult to handle.



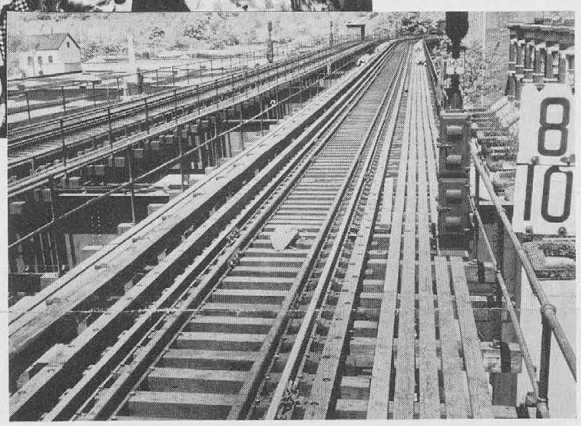
Below: Due to sloping sides of concrete piers at the Philadelphia Navy Yards, heavy "penta"-treated timbers are used to secure the top of pilings and act as a cushion between the piling and dock. Called "walers," these 12 x 12 timbers form a fender system for the piers and help absorb the shock from ships as they come to their moorings. These walers were recently installed the full length of an 800-ft. Navy Yard pier.



Above: The waler rests against the concrete pier and strengthens the top of piling which are driven close to the sloping base. Steel rods driven into the pier and bolts from the piling to the walers secure them in place. Here, an inspector is checking waler timbers before completion of the work.

Crossties Play Important Role on World's Largest SUBWAY ELEVATED SYSTEM

Typical rush hour scene at Times Square on the BMT line as crowds press into the subway expresses that take them to Coney Island, Brighton Beach and Sea Beach on lower Long Island.



Looking up Track No. 2 on the New Lots Avenue BMT elevated line in Brooklyn. Clean "penta"-treated crossties are used over street crossings and on open viaduct structures to protect traffic from possible drippage below.

Unusual Facts About The New York Rapid Transit System

Some idea of the tremendous volume of business carried by the New York City Rapid Transit System is indicated by its tonnage for one month. During the month of December, 1951, the system carried 1 billion, 688 million ton miles of traffic. The system has 728 miles of single line track, of which 439 miles are underground, 55 miles on the surface and 234 miles on elevated structures.

The system has 42,000 employees, hauls 6,500,000 passengers daily and has an average "on time" record of 94 per cent. The entire System serves an area of 320 square miles. Trains operate through 13 river tunnels and on 4 bridges. During the rush hour, trains run over most of the main line subway and elevated tracks at 90-second intervals in mid-town New York. A total of 13,000 express and local trains operate daily over the three divisions during a 24-hour period. Considering the total number of persons transported daily, the transit system's safety record is almost unbelievable.

Operating the world's largest subway-elevated lines is a bigger job than the operation of many first line railroads. Actually figures for ton miles of traffic hauled and total number of passengers carried annually on the New York City Transit System will exceed those of many class one railroads. Without doubt, the success of New York's rapid growth, as well as the surprising ease with which merchandise and people move about the city, is due to this remarkable system of subway, elevated and bus and trolley lines.

The New York City Transit System is actually three rapid transit systems with connecting bus and trolley lines, all operated by the New York Board of Transportation. The entire system is owned and operated by the city.

Operating the world's largest system of subway and elevated lines presents problems unique in the transportation field. All of its 728 miles of single line track pass through or under heavily-populated areas. The importance of safety, fast operation and cleanliness increases proportionately with the type of traffic and area serviced.

The fact that the Maintenance of Way Department must replace some 70,000 ties a year, a large percentage of them within several minutes interval between trains, suggests the special techniques that must be developed to keep these lines operating on day-and-night schedules. Because of high speed operation at all times, the job of maintaining a sound, safe roadbed becomes a critical one.

For example, on some sharp curves a steel rail has reached the limit of wear within a year. As a result, this frequent replacement of rails is severe on ties located on curves, as repeated spike damage necessitates replacement of ties within approximately 10 years. Douglas fir ties are used on tangent (straight) track and yellow pine on curves on elevated structure tracks. Yellow pine stands up well on curves, taking the severe abuse that results from high speed operation.

Use of treated crossties on elevated structures has presented the problem of possible drippage of preservative on pedestrians and vehicles passing below. In 1948, the transit system began using "penta"-treated crossties on open deck steel viaduct structures. This use today has increased to almost fifty per cent of total replacement ties.

Another advantage that Maintenance of Way officials find in the use of "penta"-treated crossties in electrical railroad work is their freedom from conductivity of electricity. Continuance of the signal system in uninterrupted operation is a vital necessity on these lines.

Specifications for "penta" treatment of crossties were set up by the Maintenance of Way Department in cooperation with representatives of the American Wood-Preservers' Association. One of the maintenance engineering staff described the specifications as a net retention of 8 pounds per cubic foot of wood of a 5 per cent solution of "penta" in petroleum oil.

C O P Y

Marion, Ohio
July 28, 1952

Mr. B. Blowers
Chief Engineer M. of W.

Reference yours of May 16th, determine cause of 1944 and 1945 tie failures. (Bergen County and Graham Lines).

Mr. Price, Mr. Swoap and myself examined several hundred ties at various locations. Borings were taken to determine the species, kind of treatment and where these ties were treated. However, because of color, odor, shallow penetration etc., in many of these 1944 and 1945 ties, no definite conclusion could be arrived at. Therefore, sections from twelve (12) of the worts ties (7x9x3" to 12") were taken so the oil could be extracted. See snap shot.

Following are the extraction results, with comments:

ANALYSIS OF CREOSOTE OIL EXTRACTED FROM TIE SECTIONS RECEIVED FROM MR. R. R. POUX

Erie No.	#1 Coal Tar	#2 Water Gas Tar	#3 Water Gas Tar	#4 Water Gas Tar
Sample No.	C-431	C-432	C-438	C-439
Species	R. oak	R. oak	R. oak	R. oak
Division	Bergen City	Bergen City	Graham	Graham
Mile Post	12.25	12.25	69.15	69.15
Grams Oil Extracted	48.6	134	56.4	120
Analysis of Oils				
Coke Residue	7.95%	8.85%	7.36%	6.65%
Distillation up				
to: 210° C.	.5%	.2%	.0%	.1%
235° C.	.8%	1.2%	.7%	.5%
270° C.	4.9%	8.9%	10.2%	4.3%
315° C.	20.5%	30.8%	25.4%	26.3%
355° C.	44.2%	55.0%	42.2%	51.0%
Residue	58.8%	48.6%	52.3%	46.6%
Specific Gravity of				
235°--315° Fraction	1.035	1.026	1.022	1.039
315°--355° Fraction	1.101	1.085	1.080	1.086
Sulfonations Residue	.54%	2.37%	2.44%	1.32%
Tar Acids	2.35%	22.1%	5.37%	1.35%

Sample No. 1 - 431 Straight coal tar - by distillation of fractions, high residue, low sulfonation residue and high Specific Gravity of the 355° C.

Sample No. 2 - 432 Poor grade of water gas tar. Too high in tar acids. (Too high tar acids is detrimental to the wood cells.)

Samples No. 3 & 4 (438 & 439) Believe these are a mixture of straight coal tar and straight water gas tar.

COPY

Mr. B. Blowers July 28, 1952

The general condition of ties having dating nails between 1936 and 1949 is bad and will admit Mr. Price is more than justified in his complaint, not only concerning the 1944 and 1945 but also in regard to some ties installed in 1940, 1941, and 1942. In many cases the 1927 Pine and the 1928 Gum were in much better condition than those mentioned above.

It should be understood, not all ties treated in this period (1936 to 1948) are bad, but there is a larger percent going bad than there is that are sound.

Below is my classification of all those that are going bad or showin signs of early failure and giving the kind of preservative used during these years.

		Preservative
1927 Pine	Condition good	80/20 Sol --- 6#
1928 Gum	" "	80/20 Sol --- 6#
1929 to 1934	" "	70/30 and 50/50 --- 6# & 8#
1936 to 1942	Early failures - center rot and hollow regardless the species (the oak seem as bad as the Tc group)	100% straight coal tar
1942 to 1944	Early failures can be expected - rotten centers and surface decay very noticeable	50% " " " 50% Water gas tar
1944 to 1948	Many have broken through the top surface - deep rotten centers and very poor penetration of preservative	100% water gas tar

For ready information - volumes treated with the TARS

Paterson plant only	1936 to 1942 -	707,800 ties	100% coal tar
	1942 to 1944 -	95,300 ties	50/50 CTar - WCT
	1944 to 1948 -	34,300 ties	100% water gas tar

Taking everything into consideration, I don't hesitate in estimating that 90% of the failures of the ties on the Bergen County and Graham Lines with dating nails from 1936 to 1948 were from Paterson and treated with either 100% straight coal tar and 100% water gas tar or a mixture of the two. While the Bergen County and Graham Lines did not receive all of these 837,000 tar treated ties, it is very evident they got more than their share.

There was a total of 1,766,000 ties treated with these various Von Schrenk tars that probably will fail at half the service life of properly treated ties. This practice of improper treatment was discontinued with issuance of your order in 1948 to discontinue shipment of any more ties into Paterson Treating Plant.

My personal comments to avoid such conditions or conditions similar to these (and while we are treating with 60/40 solution we will still have a few early failures) are as follows:

COPY

Mr. B. Blowers July 28, 1952

1. Return to 80/20 solution to a 6# treatment or a treatment equal to the present cost of our 7½# 60/40 solution. In my 35 years I have noticed that as the percentage of tar was increased, our percentage of failures increased and when we went to 100% tar, our service life reached almost down to the life of an untreated tie. Many thousands were only 2 to 4 years over what the untreated life would have been.

2. Insist on the plants reducing their cylinder capacity by inserting wooden strips between each cross layer when tramming, for we have temperature of less than 100° F. and even after ten hours pressure, which means three things.

A. Any number of tie surfaces never had hot oil, therefore no pressure (liquid) or penetration. (Merely coated and when the light oils evaporate, the protection was gone.

B. By stripping each cross layer we would obtain a much more uniform distribution, obtain better penetration with hot preservative. If the preservative reaches 160° F., 85% of the fungi germs are killed. If 185° F., all or 100% of the germs are killed.

C. We would get a much cleaner treatment, the preservative would be in the tie and not on the outside of free carbon - insolubles and less dangerous to handle.

This item #2 has been partially corrected, for Mr. Frost had that phase put into the contract "that one layer on face, the next layer to be on edge". This helps and does not cost us any additional money for processing.

I sincerely believe, some steps should be taken to correct tramming, or create a new method, even though it may cost us more money. A few additional pennies well spent on the stocks we now have will more than off-set the over all picture, for when there is a tie shortage, the prices jump 20 to 40¢ each. Our service life would be much closer to 25 or 28 years average, than our present 20 to 23 years. While we have corrected the preservative to a great extent (over the tars) by using 60/40 solution, it must be remembered ties and labor are 2½ times what they were back in the late 30's.

R. R. Poux
Chief Treatment Inspector.

RRP:VR

3659

Saint Paul, February 4, 1952

MR. A. J. LOOM:

Your letter of the 31st in regard to line-up at the treating plants to fill vacancies created through the superannuation of Mr. Stone and the voluntary retirement of Mr. Willcutt.

You have my tentative approval for the line-up you recommend - to the end that you can start training the three men for their respective new positions.

I say "tentative approval" so as to leave the way open for revision if later in the year it is found desirable.

bb/s

Brainerd, Minnesota, January 31st, 1952

Mr. Bernard Blum:

On my recent trip to Paradise, General Foreman Willcutt informed me that he would like to retire at the end of the present treating program, which I think will be about July 1st. He will reach the age of 67 on March 16th, 1952, and feels that his physical condition will not permit him to continue longer in service.

Mr. Stone, Treating Inspector at Seattle, will reach the age of 70 on December 29th, 1952, so we will have two vacancies to fill during this year.

So far, I have received from our present employes, only two formal applications which I am attaching herewith.

Mr. E. L. Sears, our present Engineer-electrician at Paradise, desires to be considered for the General Foreman's position at Paradise.

Mr. O. J. Murphy, presently employed as Tie Handler at Paradise, now desires to be considered for the position of Treating Inspector at Seattle, or for the Yard Clerk's position at Paradise. You will recall his previous applications.

Mr. H. E. Benjamin, Yard Clerk at Paradise, has informed me verbally that he would like to succeed either Mr. Willcutt as General Foreman at Paradise or Mr. Stone as Treating Inspector at Seattle.

Mr. Willcutt and I have discussed the situation at various times and we agree after careful consideration of the qualifications and seniority of these applicants, that these are the best men we now have at any of the plants for filling the vacancies referred to.

I have agreed with Mr. Willcutt that unless otherwise instructed I would favor his recommendation for assignments which is as follows:

E. L. Sears to succeed C. L. Willcutt as General Foreman, Paradise Tie Plant.

H. E. Benjamin to succeed G. H. Stone as Treating Inspector at Seattle.

O. J. Murphy to succeed H. E. Benjamin as Yard Clerk at Paradise Tie Plant.

I am attaching herewith, personal records and qualifications of each of these applicants from which you will note our basis for recommending these proposed assignments, subject to your approval. If you approve, we will arrange at once to start training these men for the respective positions as well as we can while Mr. Willcutt and Mr. Stone are still with us.

AJL/dm

Paradise, Montana.
July 20-1951

Mr A. J. Loom -
General Superintendent,
Timber preservation.

Dear Sir;

Please consider this letter, my application for the Genral foreman's position, at the Paradise Tie treating plant, when Mr C. L. willcutt retires.

I have worked on most of the jobs at this plant, including treating engineer for sumeral years, also enginer electrician since 1943.

I am familar with all plant and yard operations.

You are familar with my record since 1918 at Brainerd and Paradise plants.

If my qualifications meet with your approval, I would like to be considered for the above mentioned position.

Yours Truly,
E. L. Sears.

Mr. E. L. Sears, Age 54, Birthdate, June 15th, 1897, now employed as Engineer-electrician, Paradise Tie Plant.

Continuous Service since October 8th, 1918.

Employed since October 8th, 1918 in all periods Brainerd and Paradise plants were in operation as Boring Machine Operator's Helper, Motorman's Helper, Motorman, Door Tender, Watchman, Laborer, Tie Handler, Treating Engineer and since July 1st, 1943, has been Engineer-electrician at the Paradise plant, succeeding A. L. Ekman, who retired on that date.

Completed 8th Grade education and is self educated in steam engineering and mechanics to the extent that he has a stationary steam engineers license and is competent to maintain the power plant and electrical equipment, pumps, Boring, Adzing and Incising machines, and all other mechanical units at the plant.

He has a general knowledge of our methods of treatment, fractional analysis of creosote and fuel oil, and the handling of materials in and out of the plant, including switching service and assignment of work to the piece workers. He has supervisory ability, good habits, and is well liked by his fellow employes.

He has not had any office or clerical experience but this is being explained to him by Mr. Willcutt who thinks Mr. Sears would soon be able to meet this requirement satisfactorily.

Paradise Mont.
Nov. 24, 1951

Mr. A. J. Loom
Gen. Supt. Timber Res.
Brainerd Minn.

Dear Mr. Loom:

I understand that Mr. Harwood Stone will retire from his position with the N. P. R'd'd next fall.

Please accept this letter as my application for Mr. Stone's position when he retires.

If it transpires, that another person of the tie plant personnel is scheduled for this position, I wish to apply for that persons vacancy.

Yours very truly
O. J. Murphy.

Mr. O. J. Murphy, Age 44, Birth dateSeptember 11th, 1907, now employed as Tie Handler, Paradise Tie Plant.

Continuous Service since November 3rd, 1927.

Employed since November 3rd, 1918 as Tie Handler at Paradise Tie Plant in all periods when plant was in operation. At various times, when the plant closed down, he was given leave of absence from the tie plant and worked temporarily as brakeman, clerk, and chief yard clerk on the Idaho Division.

On account of being only temporarily employed to fill vacancies on the Idaho Division, caused by illness, vacations and absence of regular employes, he was unable to establish any seniority elsewhere than at the tie plant. His services on the Idaho Division were very satisfactory and his general ability was recognized by the Division Superintendent and Trainmasters.

His service at the tie plant has always been very satisfactory and he has a general knowledge of the plant layout, switching service, assignment of work to the men, as well as the clerical work.

Completed high school and attended University of Minnesota two years. He has good habits, plenty of natural ability and tact and is well liked and respected by his fellow employees. He was recommended to succeed Mr. Willcutt as Yard Foreman when Mr. Willcutt was made General Foreman, but the position of Yard Foreman has never been reinstated.

Mr. H. E. Benjamin, Age 52, Birth date May 27th, 1899, now employed as Yard Clerk, Paradise Tie Plant.

Continuous Service since January 8th, 1925.

Employed since January 8th, 1925, in all periods Brainerd and Paradise plants were in operation as Yard Clerk, Watchman, Laborer, and a few days as Treating Inspector.

Completed 8th Grade education and three years in high school. Learned typing and office work after employment as Yard Clerk at Paradise Tie Plant.

Performs the office duties of the Yard Clerk's position very efficiently, but lacks supervisory ability, engineering experience, and tact required to handle men satisfactorily. He has a general knowledge of our methods of treatment, fractional analysis of our preservatives, billing and invoicing of materials and office work.

3659

Saint Paul, April 20, 1951

MR. A. J. LOOM:

Your letter of the 19th and returning your papers on the address to be given at the coming convention of the Wood Preservers by Chief Engineer Perkins of the Union Pacific:

Just what did you have in mind by your opening sentence that it is very gratifying to find after many years that someone else agrees with you? This infers that you have been a lone wolf, and that everybody has been out of step but the Northern Pacific. I did not know that that is a fact, as I have always been of the opinion that our methods of treatment were considered good practice - although I noticed in the recent tabulation by Mr. Stier of the Forestry Service that predominantly the creosote and creosote-coal tar mixtures are employed.

My criticism of Mr. Perkins' paper is that he does not show in his tabulation the number of ties per mile or the percentage renewal of ties per year. He quotes a lot of figures, but no one can follow or retain for two minutes such data, whereas a tabular view is impressive.

I would see nothing wrong for you to call that to the attention of Mr. Perkins and to suggest that it would be advisable, in presenting data on tie treatment, to show by years the direct comparisons which will in themselves prove the economy.

Certainly Mr. Perkins starts out quite conservatively in his estimates of the life of treated ties, but he finally comes to around the same figures that you and I used in an address several years ago to the Wood Preservers, at Minneapolis. While we probably cannot make any reference to it, I am impressed by Mr. Perkins' paper that considering the 90 years they have been doing treatment it takes them a long time to come to a definite standard. took

bb/s

att.

Brainerd, Minnesota, April 19th, 1951

Mr. Bernard Blum:

Prompt return of the attached file and your approval of my comments on Mr. Perkins' paper would be greatly appreciated.

I expect to leave for Chicago next Sunday on Train Two, to attend the A.W.P.A. annual convention at the Stevens Hotel, on the 23rd, 24th, 25th, and 26th.

AJL/dm

3659

Brainerd, Minn., March 2nd, 1950

Mr. Bernard Blum:

In reply to your letter of February 28th with reference to the difference in cross tie treating costs at Brainerd, Paradise and Seattle indicated by our monthly summary for January 1950.

In reviewing our records since we entered into the Seattle contract in 1927, I find that these costs have varied considerably throughout the years, particularly at Brainerd where handling costs are highest on account of the greater number of grades and species that are shipped to the plant in the same car and therefore must be sorted at the Plant. A shortage of piece workers in recent years has made it necessary to use hourly paid laborers at various times in unloading, sorting and piling ties. Restricted purchase of ties in time for proper air-seasoning has resulted in higher cost due to the necessity for green treatment.

At Seattle and Paradise ties are shipped to the plants in cars containing ties of only one grade and one species, which results in lower cost of handling. Weather conditions are also more alike so the difference in costs between Seattle and Paradise has remained more constant.

In the first year of treatment under the Seattle contract, the Seattle costs were 67% higher than Paradise costs and 22% higher than Brainerd costs. Since that time costs at our own plants have increased 62% and at Seattle only 31%. There has been no increase in Seattle contract prices during the past two years, while at Brainerd and Paradise wage increases as well as the 5 day week have increased the costs.

AJL:rwm

B

Saint Paul, February 28, 1950

MR. A. J. LOOM:

Your statement of February 24 summarizing the cost of treating operations at the tie treating plants for January, 1950:

As I read the statement, the cost of treatment at at the Seattle plant is 24% higher than the cost of treating at the Paradise plant in the case of cross ties. The cost of treating at Seattle for cross ties is 8% more than the cost of treatment at the Brainerd plant.

Was there not a greater discrepancy at the time we entered into the contract with the West Coast people? In other words, does thismean that the increased cost of treating at our own plants during the past 20 years is more than the increased cost at the Seattle plant?

bb/s

3659

Brainerd, Minn., January 31st, 1950

Mr. Bernard Blum:

In reply to your letter of January 21st and with return of the attached file about pentachlorophenol treatment by the Lawson Lumber and Timber Treating Plant recently installed at Drummond, Montana.

I assume this is an open tank layout, but will visit the plant at the first opportunity to see what facilities and methods of treatment with pentachlorophenol are being used.

The usual solution for this treatment consists of 5% pentachlorophenol in an oil solvent. As stated in the attached circulars if the proper kind of very light oil solvent is used, this treatment will permit painting afterwards. When heavy petroleum is used as solvent this treatment is more effective as a wood preservative, but lumber so treated cannot be painted afterwards satisfactorily.

AJL:rwm

Att.

3659

Billings, Mont. January 21, 1950.

Mr. A. J. Loom:

Please note attached file originating with letter from Mr. Sidney C. Lawson of Drummond, Montana, concerning furnishing lumber treated with Pentachlorophenol.

Might be advisable to have this plant investigated. We might want some/treated lumber. Let me have your thoughts.
painted

BB:L
enc.

January 18, 1950

File 166-11

400

Mr. Sidney C. Lawson

Drummond, Montana

Dear Sir:

I have your letter of January 16th with information about your Dri- Vac Pentachlorophenol treating plant.

You may or may not know it, but we have our own treating plants, one located at Paradise, Montana, and another at Brainerd, Minnesota. However, should there be occasion to buy poles, piling, fence posts or other timber items pre-treated, we will have your plant in mind.

Yours very truly,

(Signed) E. M. WILLIS

Purchasing Agent

cc: (Blind)
Mr. B. Blum: ✓ For your information and comments.

Att:

C O P Y

LAWSON LUMBER AND TIMBER TREATING PLANT

DRUMMOND, MONTANA

January 16, 1950

Mr. E. M. Willis,
Purchasing Agent, Northern Pacific Railway Co.
St. Paul, Minnesota.

Dear Sir:

Having installed the only Dri- Vac Pentachlorophenol treating plant in Montana, I am in position to saw and treat in the one plant, fence posts, pole stubs, piling, bridge timbers crossing plank, or any other size commercial timbers, here at Drummond.

I use Dow Chemical 5% Penta- solution with water repellent added, which is not water soluble. It is clean to handle and can be painted over without the material peeling afterward.

I have my sawmill and treating plant here on an N. P. lease and can load and ship very nicely. Am sure that with my set- up I can save you at least a portion of your loading and transportation costs.

I am enclosing some circulars which will explain more fully than any other way what the Penta Solution can and will accomplish.

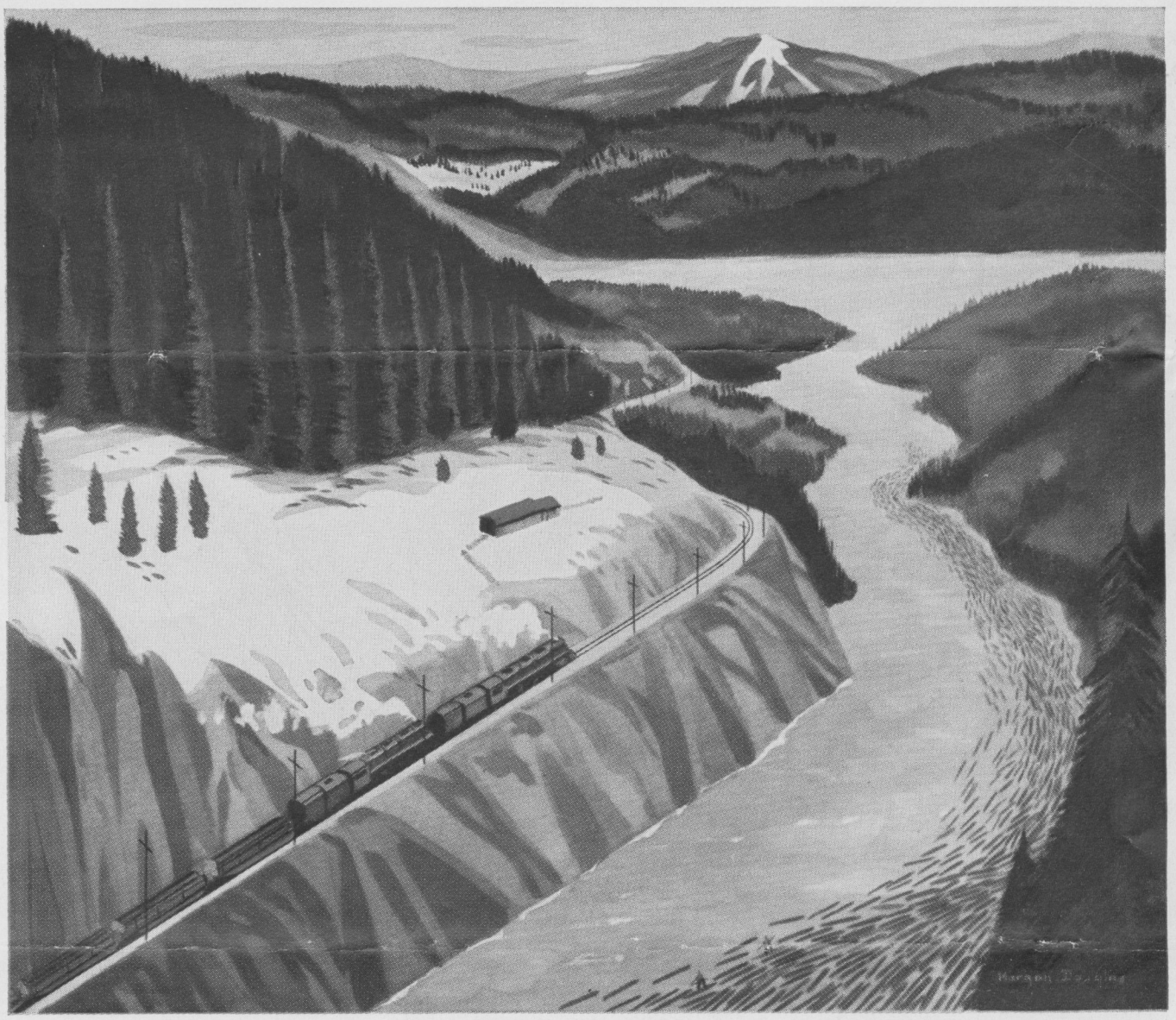
I will be only too happy to answer any additional questions which might occur to you about the method of treating or various degree of penetration.

Mr. E. M. Willis -

Looking forward to serving you in the coming year.

Very truly yours,

(Sgd) Sidney C. Lawson



penta-chlorophenol *broadens the market for wood*

Wood, the best all-round building material, is made still better by the modern wood preservative, PENTAchlorophenol.

"PENTA" broadens the market for wood. It affords maximum protection against decay and termite attack. "PENTA" makes possible many new uses for wood. "PENTA" leaves wood clean, nonsticky and, when the proper solvent is used, ready for painting.

In short, "PENTA" adds extra durability to wood's recognized qualities of economy, natural insulating properties, beauty and easy workability.

THE DOW CHEMICAL COMPANY
MIDLAND • MICHIGAN

For additional information about PENTAchlorophenol, write Dow and ask for booklet PE 47.

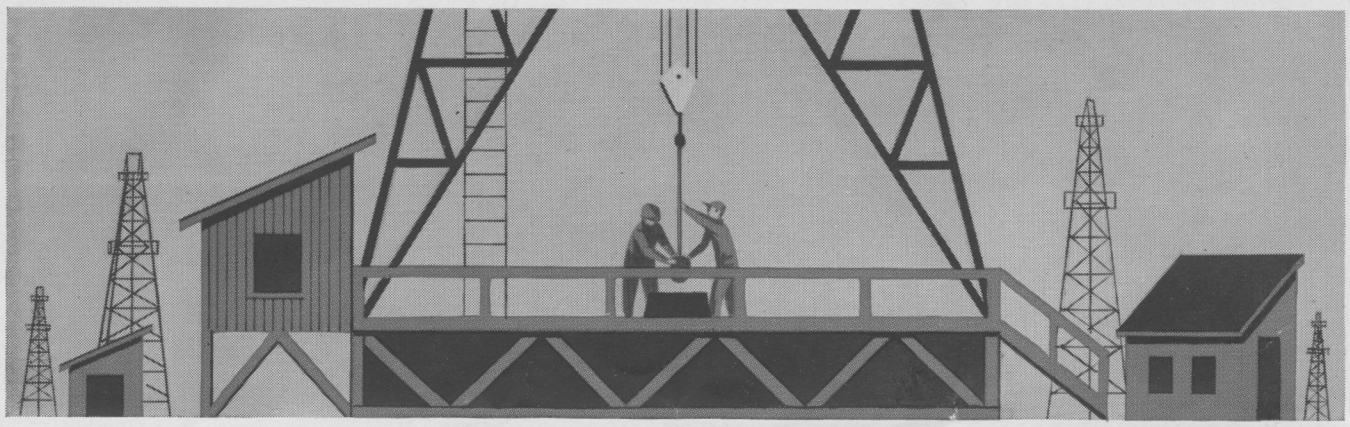
DOW
penta-chlorophenol

Dow Ad No. 49-142—Fin. H—3-16-49
1 page—7 x 10 inches—2 colors
Wood—April, 1949—PE-47
MacMANUS, JOHN & ADAMS, Inc.

Lawson Lumber & Timber Treating Plant

Box 296 Phone 2171

Drummond, Montana.



For **lumber** that has to LAST!

Use penta-chlorophenol treated wood!

Build for permanence with PENTAchlorophenol, the scientific, full strength wood preservative. Get positive, *tested* protection against decay and termites—protection, second to none, that lasts through the years. Reduce maintenance and rebuilding costs!

"PENTA" enables wood structures to withstand severe exposure—outdoor, underground and even under exceptional moisture conditions. It can be mixed with the proper oil solvent to permit painting after the wood has been treated. Workmen like PENTAchlorophenol-treated wood—it is clean and easy to handle.

Ask your lumber suppliers how you can take advantage of this modern wood treatment with its *deep penetration* and *measured control*. Or write to Dow for illustrated booklet No. PE 16.

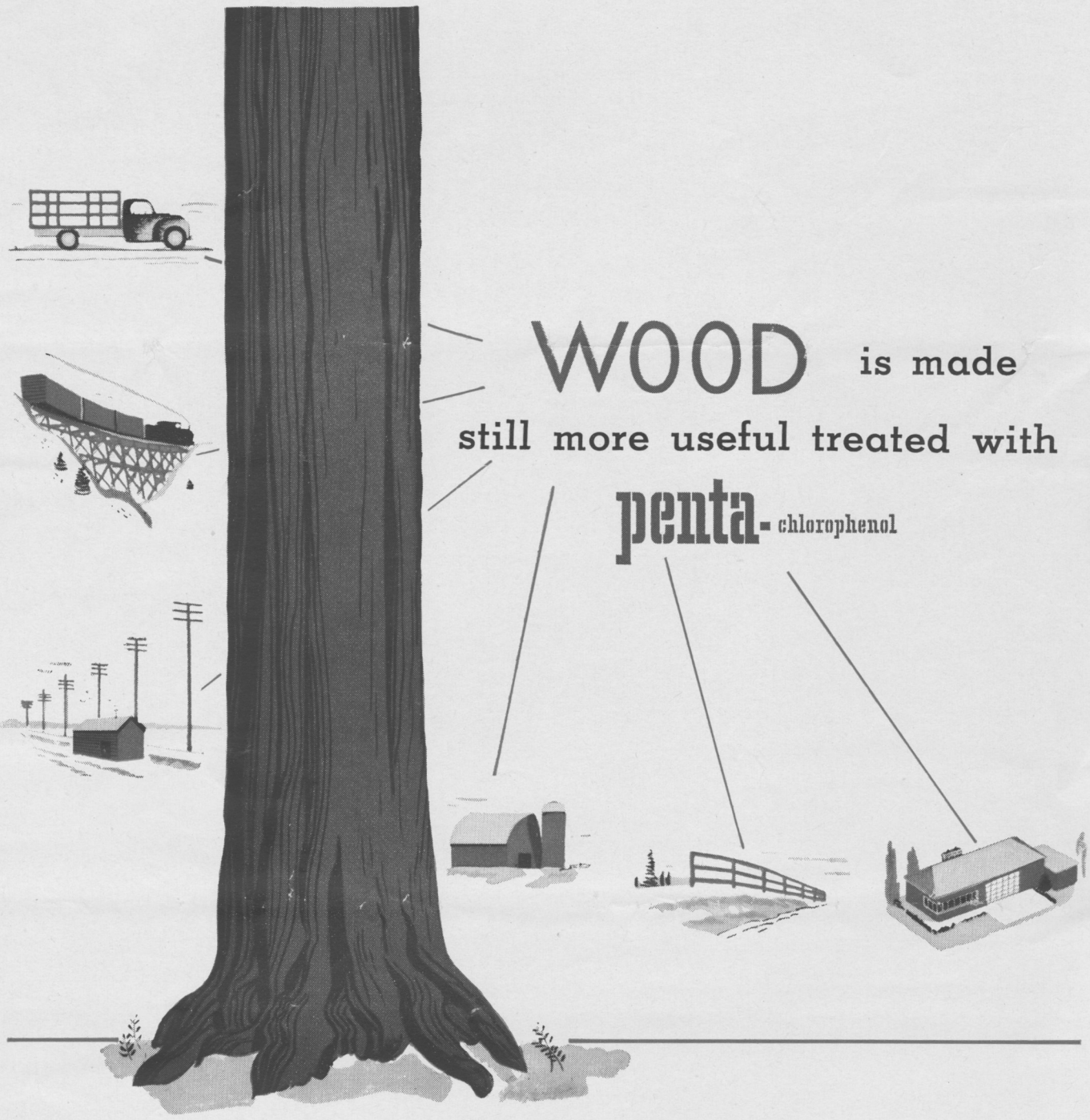
THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

DOW
penta-
chlorophenol

Lawson Lumber & Timber Treating Plant

Box 296 Drummond, Montana.

Dow Ad No. 49-159—Fin. H—1-21-49
1 page—7 x 10 inches—2 colors
Oil and Gas Journal—February 10, 1949
MacMANUS, JOHN & ADAMS, Inc.



WOOD is made still more useful treated with penta- chlorophenol

"PENTA" protects wood and wood products from decay and termites. PENTA-protected wood lasts longer . . . is clean and paintable when the proper solvent is used.

For fence posts, utility poles, and large construction timbers, a heavy oil solution containing 5% PENTA should be used. For millwork, siding, trim and furniture, PENTA solutions that can be painted are available. These contain a water repellent that adds to wood's dimensional stability and resistance to check.

Wherever wood is used . . . "PENTA"-PROTECTED lumber should be considered.

For additional information about PENTA*chlorophenol, write Dow, Dept. PE 50.*

Dow
penta-
chlorophenol

THE DOW CHEMICAL COMPANY
MIDLAND • MICHIGAN

Let

Lawson Lumber & Timber Treating Plant

treat your commercial timber with

Dow Chemical 5% Pentachlorophenol Solution with water repellent added

Box 296 Phone 2171

Drummond, Montana.

Dow Ad No. 49-143—Fin. H—4-5-49
1 page—7 x 10 inches—2 colors
Wood—May, 1949 PE50
MacMANUS, JOHN & ADAMS, Inc.

3659

CABLE ADDRESS DOWCHEMCO
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SAN FRANCISCO
PHILADELPHIA
LOS ANGELES
WASHINGTON
SAINT LOUIS
CLEVELAND
HOUSTON
CHICAGO
SEATTLE
DETROIT
BOSTON

THE DOW CHEMICAL COMPANY

MIDLAND · MICHIGAN

TRADE DOW MARK REG. U. S. PAT. OFF.

August 3, 1949 ~~8011-63~~

Mr. B. Blume, Ch. Eng.
Northern Pacific R. R.
5th & Jackson Streets
St. Paul, Minn.

Dear Mr. Blume:

A new application of Pentachlorophenol solutions has been developed which we know will be of interest to you. It concerns tie spraying and swabbing and is discussed in the attached reprint from "Railway Engineering and Maintenance." The ease of application has led such roads as the Nickel Plate to use Penta oil solutions in their rail relaying operations.

If you have used Penta treated wood, you are already familiar with the clean treatment it provides. It is this characteristic, so popular with the workman, that has dictated its use in treating poles, crossarms and general construction lumber. It is also being widely tested for crosstie treatment.

If you'd like to evaluate Penta solutions in your own tie adzing operations, we'll be glad to suggest a convenient source of supply.

Yours very truly,

THE DOW CHEMICAL COMPANY

George E. Olson

George E. Olson
Dowicide Sales

GEO/pa

H.H.P. A. J. Loon for your info.
Has no superiority over the proven effectiveness of creosote except possibly in cleanliness which depends on nature of the oil used in adzing. H.H.P. 8/4

8/6/49

Pentachlorophenol-in-oil can be applied to freshly-adzed tie surfaces by spraying machines, such as the unit shown here.

NEW APPLICATION OF PENTACHLOROPHENOL

A new application of pentachlorophenol-in-oil solutions, namely, protecting freshly-adzed tie surfaces, has been announced by The Dow Chemical Company, Midland, Michigan. Such a solution, a recognized wood preservative, has a low viscosity; consequently it can be applied in cold weather, either by spraying machines or by brush, without heating. In warm weather its low viscosity facilitates rapid penetration into the surface on which it is applied.

The commonly used solution -- five per cent pentachlorophenol in petroleum oil -- is said not to be corrosive to the metals used in the construction of spraying machines, and, to date, no such trouble has been reported. Pentachlorophenol is available in dry crystals, to be blended with petroleum oil as a concentrate and later diluted with oil, or in ready-to-use solutions in drums or tank cars.

Reprinted from the June, 1949 issue of RAILWAY ENGINEERING AND MAINTENANCE publication by The Dow Chemical Company, Midland, Michigan.

June 7, 1949.

Mr. H. J. Seyton
Chief Engineer
Great Northern Railway Co.
175 E. Fourth St.
St. Paul, 1, Minn.

Dear Mr. Seyton:

Replying to your letter of May 27 regarding cost of treated cross ties and inquiring as to the number of ties treated and cubic footage to compare with the Burlington and Great Northern figures:

This was not sent you originally as your joint letter of January 6 did not ask for that information. I am transmitting herewith a print of our Standard Plan T-3-1, latest revision, which corresponds to your Standard Plan 3120-3-3. In this connection I note that you show no grades less than No. 3. At Paradise where the timber permits, we likewise purchase all ties grade 3 or higher, whereas at Brainerd we are compelled to take considerable numbers of No. 1 and 2 ties in order to get what we want in the grades 4 and 5. This of course is due to demand of the producers that they have no wastage of their timber. I do not understand how you are able to purchase ties grade 3 or higher unless you pay a premium for those ties you do get.

Furthermore, you purchase all ties 8'-6" long. On the N.P., our grades 1, 2, 3 and 4 call for 8' lengths, although it is true that we are getting a number of 8'-6" ties, expecially in the higher grades, because they cut the bolts accordingly.

When our inspector finds a tie according to the grade 5 and finds that due to wane or other reasons, it is not full cross section, he degrades it to what we term "4A". Those ties, of course, are 8'-6" long and we pay for them at the price of a grade 4. Following are our figures for Paradise and Brainerd treatment for the year 1948:

Brainerd:
614,888 pieces = 1,825,876 cu.ft. or 2.97 cu.ft. per tie.

This small footage is due to considerable number of Grade 1 and 2.

Paradise:
426,490 pieces = 1,438,496 cu.ft. or 3.37 cu.ft. per tie.

Weighted Average:
1,041,378 pieces = 3,264,373 cu.ft. or 3.13 cu.ft. per tie.

The factorswhich I have mentioned above result in smaller footage of tie than the Great Northern.

Very truly yours,

BB/gs
Encl.

NORTHERN PACIFIC RAILWAY COMPANY

ENGINEERING DEPARTMENT

BERNARD BLUM,
CHIEF ENGINEER

ST. PAUL 1, MINN. June 1, 1949.

Mr. H. J. Seyton,
Chief Engineer,
Great Northern Railway Co.,
St. Paul, Minnesota.

Dear Sir:

Referring to your letter of May 27th regarding cost of treated ties.

The average cubic feet per tie treated by the N. P. during the year 1948 was 3.13.

An examination of your set-up for ties indicates that your company does not use ties of grade lower than #3. Our company uses a considerable quantity of hardwood ties classed as Grades #2 and #1 in Branch Lines and Sidings east of Glendive, Grade #2 being 6 x 7 x 8; #1 - 6 x 6 x 8; furthermore, your chart shows all of your ties as 8'6" in length, whereas this company uses 8'6" ties in Grade #5 only. These two factors alone would have a tendency to increase the average cubic foot per tie used by your company.

Yours very truly,

Rosamond - arc

614,888 = 21,910,517 ABM ÷ 12 = 1,825,876 acft ÷ 614888 = 2.97 acft per tie

Parodise

426490 pcs = 17,261,955 ABM ÷ 12 = 1,438,496 acft ÷ 42649 = 3.37 acft per tie

Weighted average

1,041,378 = 39,172,473 ABM ÷ 12 = 3,264,373 acft ÷ 1041378 = 3.13 weighted acft per tie

4 Ac?

GREAT NORTHERN RAILWAY COMPANY

OFFICE OF THE CHIEF ENGINEER

H. J. SEYTON
CHIEF ENGINEER

ST. PAUL 1, MINN.

May 27, 1949

Mr. Bernard Blum
Chief Engineer
Northern Pacific Ry. Co.
St. Paul 1, Minnesota

Dear Sir:

In reviewing the figures that were assembled showing the cost of treated ties on the various lines during the year 1948 we find that the average cubic foot per tie on the Burlington is considerably lower than the average on the Great Northern. Our average for all plants is 3.48 cu. ft. per tie. There were no figures given for the Brainerd or Paradise plants as to the number of ties treated or the cubic feet, and we were wondering if this figure could be developed without a great deal of trouble.

I am handing you herewith several lithographs of our 3120-3-3 which shows our set-up for ties. We of course have considerable more first class main line mileage than does the Northern Pacific, although our branch line main track is only slightly more than yours. This might have a tendency to increase the average cubic foot per tie because of the greater demand for larger ties for the main track.

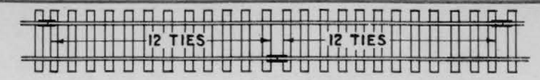
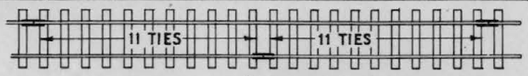
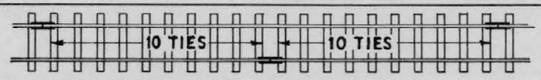
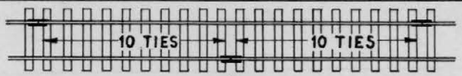
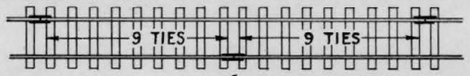
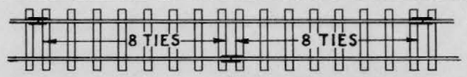
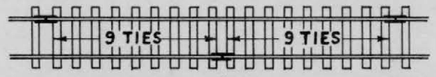
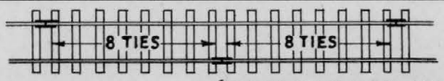
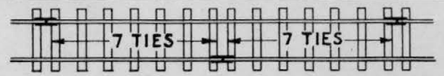
I would appreciate information as to the average cubic foot per tie on the Northern Pacific for the year 1948 as far as the ties treated is concerned, and if your practice with regard to the use of ties is materially different from that shown on our print attached would appreciate having information showing where the difference comes. We are still trying to see if there is some spot where tie money is getting away from us, as our costs are considerably higher every year than are yours as far as maintenance goes.

Yours truly,

H. J. Seyton

Chief Engineer

WEGB/ee

Nº	DIAGRAM BASED ON SAWED TIES AND TANGENT TRACK	APPROXIMATE DISTANCE BETW. FACES OF TIES
1		
	39 FT. RAILS - 24 TIES PER RAIL — MAIN TRACKS "A" LINES - Nº 5 TIES	11"
	" " "C" " Nº 4 "	12"
2		
	39 FT. RAILS-22 TIES PER RAIL — MAIN TRACKS "D" LINES - Nº 3 TIES	14"
	PASSING TRACKS "A" LINES - Nº 5 TIES	13"
	" " "C" LINES - Nº 4 TIES	14"
	OTHER TRACKS - 90# & OVER "A", OR "C" LINES - Nº 4 TIES	14"
3		
	39 FT. RAILS-20 TIES PER RAIL — PASSING TRACKS "D" LINES - Nº 3 TIES	18"
4		
	33 FT. RAILS-20 TIES PER RAIL — MAIN TRACKS "A" LINES - Nº 5 TIES	11"
	" " "C" " Nº 4 "	12"
5		
	33 FT. RAILS-18 TIES PER RAIL — MAIN TRACKS "D" LINES - Nº 3 TIES	14"
	PASSING TRACKS "A" LINES - Nº 5 TIES	13"
	" "C" LINES - Nº 4 TIES	14"
	OTHER TRACKS - 90# & OVER "A", OR "C" LINES - Nº 4 TIES	14"
6		See Note "A"
	33 FT. RAILS-16 TIES PER RAIL — PASSING TRACKS "D" LINES; OTHER TRACKS - LESS THAN 90# "A", "C" OR "D" LINES — Nº 3 TIES	18"
7		
	30 FT. RAILS-18 TIES PER RAIL — MAIN TRACKS "A" LINES - Nº 5 TIES	11"
	" " "C" " Nº 4 "	12"
8		
	30 FT. RAILS-16 TIES PER RAIL — MAIN TRACKS "D" LINES - Nº 3 TIES	14"
	PASSING TRACKS "A" LINES - Nº 5 TIES	13"
	" "C" LINES - Nº 4 TIES	14"
	OTHER TRACKS - 90# & OVER "A", OR "C" LINES - Nº 4 TIES	14"
9		See Note "A"
	30 FT. RAILS-14 TIES PER RAIL — PASSING TRACKS "D" LINES; OTHER TRACKS - LESS THAN 90# "A", "C" OR "D" LINES — Nº 3 TIES	18"

3120-3-3

Note "A":-
On Storage, Repair and Spur Tracks not used by heavy locomotives use only 14 ties per 33' rail and 12 ties per 30' rail.

NOTE
The size and spacing of ties on bridges shall conform to dimensions shown on bridge deck plans prepared by Bridge Engineer. In cases where bridges are provided with ballast type decks the size and spacing of ties shall conform to the specifications on this drawing, plan 3120-3-3.

NUMBER AND GRADE OF SAWED TIES IN TANGENT TRACK

CLASS OF TRACK	CLASS OF LINE	RAIL LENGTH (IN FEET)	TIES PER PANEL NUMBER	TIES PER PANEL GRADE	APPROXIMATE DISTANCE BETWEEN FACES OF TIES
MAIN TRACKS	A	39	24	5	11"
		33	20	5	11"
		30	18	5	11"
	C	39	24	4	12"
		33	20	4	12"
		30	18	4	12"
	D	39	22	3	14"
		33	18	3	14"
		30	16	3	14"
PASSING TRACKS	A	39	22	5	13"
		33	18	5	13"
		30	16	5	13"
	C	39	22	4	14"
		33	18	4	14"
		30	16	4	14"
	D	39	20	3	18"
		33	16	3	18"
		30	14	3	18"
OTHER TRACKS 90 LB. RAIL AND OVER (See Note "A")	A	39	22	4	14"
		33	18	4	14"
		30	16	4	14"
	C	39	22	4	14"
		33	18	4	14"
		30	16	4	14"
	D	33	16	3	18"
		30	14	3	18"
OTHER TRACKS LESS THAN 90 LB. RAIL See Note "A"	A	33	16	3	18"
		30	14	3	18"
	C	33	16	3	18"
		30	14	3	18"
	D	33	16	3	18"
		30	14	3	18"

CROSS TIES SAWED				TIES HEWED OR SLABBED			BRIDGE TIES		
GRADE		LENGTH	FT. B.M.	CU. FT.	LENGTH	FT. B.M.	CU. FT.	LENGTH	FT. B.M.	CU. FT.
3	8" × 6"	8'-6"	34	2.83	8" × 6"	8'-6"	43.2	10'-0"	53⅓	4.44
								12'-0"	64	5.33
4	8" × 7"	8'-6"	39⅔	3.31	8" × 7"	8'-6"	52.0	12'-0"	80	6.67
								16'-0"	106⅔	8.89
5	9" × 7"	8'-6"	44⅝	3.72	9" × 7"	8'-6"	56.4	12'-0"	96	8.00
								16'-0"	128	10.67
								14'-0"	130⅔	10.89
								USED ON TURNTABLES		

INSTRUCTIONS

The number of ties per panel shown in above table applies to sawed ties ONLY.
If hewed and slabbed ties are used, either out of face or mixed with sawed ties, the number per panel and spacing shall be governed by the distance shown as "Approximate distance between faces of ties."
On curves use of hewed and slabbed ties preferred, generally placed with wider end under inside rail.
For classification of lines see plan 5000-13-5.

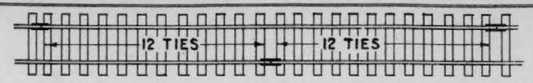
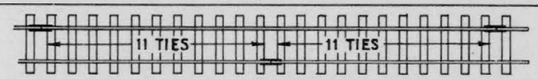
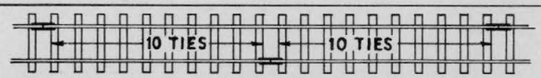
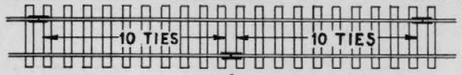
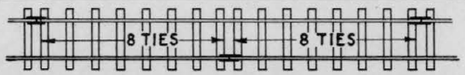
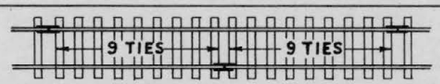
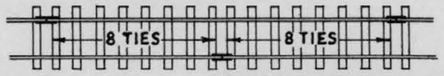
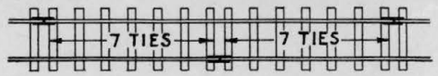
GREAT NORTHERN RAILWAY
STANDARD PLAN

TIES, TIE SPACING AND ASSIGNMENT

OFFICE OF CHIEF ENGINEER, ST. PAUL, MINN.
MARCH 1946
REVISED - JUNE, 1947

CORRECT
CHIEF ENGINEER

APPROVED
VICE-PRESIDENT

Nº	DIAGRAM BASED ON SAWED TIES AND TANGENT TRACK	APPROXIMATE DISTANCE BETW. FACES OF TIES
1	 39 FT. RAILS - 24 TIES PER RAIL — MAIN TRACKS "A" LINES - Nº 5 TIES " " "C" " Nº 4 "	11" 12"
2	 39 FT. RAILS-22 TIES PER RAIL — MAIN TRACKS "D" LINES - Nº 3 TIES PASSING TRACKS "A" LINES - Nº 5 TIES " " "C" LINES - Nº 4 TIES OTHER TRACKS - 90# & OVER "A", OR "C" LINES - Nº 4 TIES	14" 13" 14" 14"
3	 39 FT. RAILS-20 TIES PER RAIL — PASSING TRACKS "D" LINES - Nº 3 TIES	18"
4	 33 FT. RAILS-20 TIES PER RAIL — MAIN TRACKS "A" LINES - Nº 5 TIES " " "C" " Nº 4 "	11" 12"
5	 33 FT. RAILS-18 TIES PER RAIL — MAIN TRACKS "D" LINES - Nº 3 TIES PASSING TRACKS "A" LINES - Nº 5 TIES " " "C" LINES - Nº 4 TIES OTHER TRACKS - 90# & OVER "A", OR "C" LINES - Nº 4 TIES	14" 13" 14" 14"
6	 33 FT. RAILS-16 TIES PER RAIL — PASSING TRACKS "D" LINES, OTHER TRACKS - LESS THAN 90# "A", "C" OR "D" LINES — Nº 3 TIES	See Note "A" 18"
7	 30 FT. RAILS-18 TIES PER RAIL — MAIN TRACKS "A" LINES - Nº 5 TIES " " "C" " Nº 4 "	11" 12"
8	 30 FT. RAILS-16 TIES PER RAIL — MAIN TRACKS "D" LINES - Nº 3 TIES PASSING TRACKS "A" LINES - Nº 5 TIES " " "C" LINES - Nº 4 TIES OTHER TRACKS - 90# & OVER "A", OR "C" LINES - Nº 4 TIES	14" 13" 14" 14"
9	 30 FT. RAILS-14 TIES PER RAIL — PASSING TRACKS "D" LINES, OTHER TRACKS - LESS THAN 90# "A", "C" OR "D" LINES — Nº 3 TIES	See Note "A" 18"

3120-3-3

Note "A":-
On Storage, Repair and Spur Tracks not used by heavy locomotives use only 14 ties per 33' rail and 12 ties per 30' rail.

NOTE
The size and spacing of ties on bridges shall conform to dimensions shown on bridge deck plans prepared by Bridge Engineer. In cases where bridges are provided with ballast type decks the size and spacing of ties shall conform to the specifications on this drawing, plan 3120-3-3.

NUMBER AND GRADE OF SAWED TIES IN TANGENT TRACK

CLASS OF TRACK	CLASS OF LINE	RAIL LENGTH (IN FEET)	TIES PER PANEL NUMBER	TIES PER PANEL GRADE	APPROXIMATE DISTANCE BETWEEN FACES OF TIES
MAIN TRACKS	A	39	24	5	11"
		33	20	5	11"
		30	18	5	11"
	C	39	24	4	12"
		33	20	4	12"
		30	18	4	12"
	D	39	22	3	14"
		33	18	3	14"
		30	16	3	14"
PASSING TRACKS	A	39	22	5	13"
		33	18	5	13"
		30	16	5	13"
	C	39	22	4	14"
		33	18	4	14"
		30	16	4	14"
	D	39	20	3	18"
		33	16	3	18"
		30	14	3	18"
OTHER TRACKS 90 LB. RAIL AND OVER (See Note "A")	A	39	22	4	14"
		33	18	4	14"
		30	16	4	14"
	C	39	22	4	14"
		33	18	4	14"
		30	16	4	14"
OTHER TRACKS LESS THAN 90 LB. RAIL See Note "A"	A	33	16	3	18"
		30	14	3	18"
	C	33	16	3	18"
		30	14	3	18"
	D	33	16	3	18"
		30	14	3	18"

GRADE	CROSS TIES SAWED	LENGTH	FT. B.M.	CU. FT.	CROSS TIES HEWED OR SLABBED	LENGTH	FT. B.M.	CU. FT.	BRIDGE TIES	LENGTH	FT. B.M.	CU. FT.
3	8" × 6"	8'-6"	34	2.83	8" × 6"	8'-6"	43.2	3.60	8" × 8"	10'-0"	53⅓	4.44
										12'-0"	64	5.33
4	8" × 7"	8'-6"	39⅔	3.31	8" × 7"	8'-6"	52.0	4.33	8" × 10"	12'-0"	80	6.67
										16'-0"	106⅔	8.89
5	9" × 7"	8'-6"	44⅝	3.72	9" × 7"	8'-6"	56.4	4.70	8" × 12"	12'-0"	96	8.00
										16'-0"	128	10.67
									8" × 14"	14'-0"	130⅔	10.89
										USED ON TURNTABLES		

INSTRUCTIONS

The number of ties per panel shown in above table applies to sawed ties ONLY.
If hewed and slabbed ties are used, either out of face or mixed with sawed ties, the number per panel and spacing shall be governed by the distance shown as "Approximate distance between faces of ties."
On curves use of hewed and slabbed ties preferred, generally placed with wider end under inside rail.
For classification of lines see plan 5000-13-5.

GREAT NORTHERN RAILWAY
STANDARD PLAN

TIES, TIE SPACING AND ASSIGNMENT

OFFICE OF CHIEF ENGINEER, ST. PAUL, MINN.
MARCH 1946
REVISED-JUNE, 1947

CORRECT
CHIEF ENGINEER

APPROVED
VICE PRESIDENT

May 13, 1949

H. J. SEYTON, Chief Engineer
Great Northern Railway
Saint Paul, Minnesota

Dear Mr. Seyton:

Your letter of the 4th, transmitting two prints of statement compiled in your office May 4, 1949, showing comparative costs of treating ties:

In my letter to you of January 13 I did not furnish the contract price for treating at Seattle.

Our contract cost per c.f. at Seattle is $0.1162.

The cost of the preservative, which applies to Seattle, was furnished you with my letter of April 8.

For Seattle the cost of anti-check irons, including material and foreign line freight, is $0.0253.

Very truly yours,

bb/s
n

Brainerd, Minn., May 11th, 1949

Mr. Bernard Blum:

In response to your letter of May 6th, I have prepared the attached statement showing our 1948 treating costs for direct comparison with the treating cost items quoted by Mr. Seyton for various plants in his statement dated May 4th, 1949, which I am returning herewith.

I do not believe that there is anything inconsistent in any of the Northern Pacific information we have submitted. Cost figures I have quoted are compiled from our annual "Report of Tie Treating Plant Operation for 1948" which we now have ready for blue printing.

Under the Seattle contract there is no extra charge for artificial seasoning of either cross ties or switch ties unless we have unloaded green ties in the seasoning yard and desire to reload them for treatment before they are sufficiently air-seasoned. Green ties unloaded for treatment directly from incoming cars are treated for the same price as seasoned ties taken from the yard.

The cost of anti-checking irons in place at Seattle in 1948 was as follows:

	Per Iron in Place
Labor in driving the irons	$0.0159
Cost of irons including foreign freight	.0094
Total Cost per iron	$0.0253

You will note I have quoted this item, but have not added it under cost per cubic foot. Using two irons per tie the cost per tie would be $0.0506 which divided by the average volume per tie, 3.14 cubic feet, would result in a cost per cubic foot of $0.0161. Possibly Mr. Seyton has shown his costs per iron in error under cost per cubic foot.

Under the item "Supervision & Inspection" I have included only Mr. Stones' time and expenses.

At Seattle in 1948 the cost of creosote was higher than the average for Brainerd and Paradise on account of the higher prices paid for foreign oil. The cost of petroleum was a little lower on account of lower prices of oil in Company storage at Tacoma.

I am informed by Mr. Dreitzler, Manager of the West Coast Wood Preserving Company, that they treat for the Milwaukee at exactly the same prices as quoted in our contract.

AJL:rwm
Att.

COST OF TREATING TIES AT SEATTLE PLANT DURING 1948

CROSS TIES	Per Cu. Ft.
Treating Costs (Contract)	$0.1162
Taxes	---
Preservatives	
Creosote	.1101
Petroleum	.0233
Check Irons in place (Per Iron)	(.0253)
Loading costs, extra handling, etc.	---
Watchman	---
Interest & Insurance	---
Supervision & Inspection	.0021
Total Cost per Cu. Ft.	$0.2517
Number of Ties Treated	124,453
Total Cubic Feet	391,234
Cubic feet per tie	3.1430
Weight of Ties	
Untreated	125
Treated	130

SWITCH TIES	
Treating Cost (Contract)	$15.33
Taxes	---
Preservatives	
Creosote	9.28
Petroleum	1.94
Loading Costs, Extra handling, etc.	---
Artificial Seasoning	1.00
Interest & Insurance	---
Supervision & Inspection	.89
Total	$28.44
Total board feet treated (F.B.M.)	802,990
Weight of Switch Ties	
Untreated per M-FBM	3300
Treated per M-FBM	3500

Office of Gen'l. Supt. Timber Preservation
Brainerd, Minnesota, May 11th, 1949

COMPARATIVE COST OF TREATING TIES DURING 1948
N. P. - S.P.& S. - C.B.& Q. AND G.N. RAILWAYS

AVERAGE COST PER CUBIC FOOT

	GREAT NORTHERN				NORTHERN PACIFIC			S.P.& S.	C. B. & Q. RY.		SOMERS
GROSS TIES	Superior Wis. Contract Average	New Brighton Contract Average	Somers Average	Hillyard Contract Average	Brainerd Co.Owned Average	Paradise Co.Owned Average	Seattle (Contract)	St.Helens Contract	Galesburg Co. Owned	Sheridan Co.Owned	Data from Annual Statement 1948
Treating Costs (Contract)	.1414	.1584	.2237	.1563	.0802	.0574	Not given	$25.00 per MFBM including preservatives not used.	.07003	.04792	.0999
Taxes				.0056							
Preservatives:											
Creosote	.0842	.0898		.0697	.1046	.1046			.0879	.1011	.1003
Petroleum	.0295	.0291		.0171	.0248	.0248			.0241	.0257	
Check Irons in place.	.026	.0274		.0402							
Loading costs, extra handling, etc.	.0006	.0003		.0063							
Watchman				.0157				(3)			
Interest and Insurance	.037	.0336		.0301	(1)	(1)			.02340	.02206	
Supervision & Inspection	.0009	.0009	.0009	.0020	(2)	(2)					
Total cost per Cu. ft.	.3196	.3395	.2246	.3430	.2092	.1868			.20543	.19678	.2002
Number of ties treated	160,038	162,558	776,383	287,713					438,129	276,799	776,383
Total cubic feet	519,878	536,060	2,751,951	1011,655							
Cubic feet per tie	3.24846	3.29765	3.54458	3.516					3.0607	2.829	
WEIGHT OF TIES:											
Untreated, hewed & sawed	206	140	140	140							
Treated, " " "	211	150	150	150							
AVERAGE COST PER MFBM OF TREATING SWITCH TIES											
Treating Cost (Contract)	15.75	17.07554	21.45258	17.29133	10.70	9.46		$27.00 per MFBM including preservatives	6.0775	4.235	
Taxes				.45332							
Preservatives:											
Creosote	7.2753	8.07399		8.17269	8.8417	8.8417			8.275	8.1083	
Petroleum	2.5401	2.62763		2.00358	2.075	2.075			2.2083	2.0667	
Loading costs, extra handling, etc.	.0338	-		2.3041							
Artificial Seasoning				.09699			.012 C.F.				
Interest and Insurance	3.2280	3.35976		2.5796	(1)	(1)			1.95	1.83833	
Supervision & Inspection	.0739	.07041	.07271	.16247	(2)	(2)		(3)			
Total	28.9011	31.20733	21.52529	33.07408	21.6167	20.3767			18.5108	16.24833	
Total board feet treated	553,793	691,194	6189	1171,500					63,760	78,608	
WEIGHT OF SWITCH TIES:											
Untreated per MFBM	3300	3300		3300							
Treated " "	3500	3500		3500							

NOTES:
1. Interest and depreciation not included nor General Office Expense
2. Included in price to extent office and supervision expenses at the plants
3. Includes all costs at treating plant. Switch ties treated and sent to Company Store without sorting as to sizes

Office of Chief Engineer
GREAT NORTHERN RAILWAY COMPANY
May 4, 1949

3659

Saint Paul, May 6, 1949

MR. A. J. LOOM:

A short time ago I furnished Chief Engineer Seyton of the Great Northern data on our treating costs, and he has prepared a statement showing the various costs on the Great Northern, SP&S, Northern Pacific, and Burlington.

I wish you would advise if there is anything inconsistent in the information for the Northern Pacific.

Incidentally I note that the SP&S gives the price per FBM, so that to make a direct comparison I think it desirable to convert to cubic feet, simply by dividing by 83 1/3: in other words, under the St. Helens contract, for example, the price could be shown as 30 cents per c.f. for cross ties.

cc-Mr. H. J. Seyton

bb/s

PS for Mr. Loom: There is nothing shown for the Seattle contract, except the price of the artificial seasoning. When I furnished the data to Mr. Seyton I deliberately left off the Coast plant figures for the reason that the costs were so much higher than our own that I was embarrassed. However it may be all right in view of what they have disclosed for their commercial treating. Wish you would give me figures that would be applicable to the West Coast plant so I can decide whether to furnish them, even at this late date. Glad to have your prompt reply.

GREAT NORTHERN RAILWAY COMPANY

OFFICE OF THE CHIEF ENGINEER

H. J. SEYMOUR
CHIEF ENGINEER

ST. PAUL 1, MINN.

May 4, 1949

Mr. Bernard Blum
Chief Engineer
Northern Pacific Ry. Co.
St. Paul 1, Minnesota

Dear Sir:

On January 13th and April 8th you furnished me figures showing the cost of treating ties on the Northern Pacific during the year 1948.

I am now handing you two prints of the statement which was compiled in this office from the information furnished by yourself and the other two lines showing a comparison of costs on the four railroads. If exceptions are taken to the Northern Pacific's figures as included in this statement will be glad to have you call my attention to same.

Yours truly,

H. Seymour

Chief Engineer

WEGB/ee
Encl.

COMPARATIVE COST OF TREATING TIES DURING 1948
N. P. - S.P.& S. - C.B.& Q. AND G.N. RAILWAYS

AVERAGE COST PER CUBIC FOOT

	GREAT NORTHERN				NORTHERN PACIFIC			S.P.& S.	C. B. & Q. RY.		SOMERS
	Superior Wis. Contract Average	New Brighton Contract Average	Somers Average	Hillyard Contract Average	Brainerd Co.Owned Average	Paradise Co.Owned Average	Seattle (Contract)	St.Helens Contract	Galesburg Co. Owned	Sheridan Co.Owned	Date from Annual Statement 1948
CROSS TIES											
Treating Costs (Contract)	.1414	.1584	.2237	.1563	.0802	.0574	Not given	$25.00 per MFBM including preservatives not used.	.07003	.04792	.0999
Taxes				.0056							
Preservatives:											
Creosote	.0842	.0898		.0697	.1046	.1046			.0879	.1011	.1003
Petroleum	.0295	.0291		.0171	.0248	.0248			.0241	.0257	
Check Irons in place.	.026	.0274		.0402							
Loading costs,extra handling, etc.	.0006	.0003		.0063							
Watchman				.0157				(3)			
Interest and Insurance	.037	.0336		.0301	(1)	(1)			.02340	.02206	
Supervision & Inspection	.0009	.0009	.0009	.0020	(2)	(2)					
Total cost per Cu. ft.	.3196	.3395	.2246	.3430	.2092	.1868			.20543	.19678	.2002
Number of ties treated	160,038	162,558	776,383	287,713					438,129	276,799	776,383
Total cubic feet	519,878	536,060	2,751,951	1011,655							
Cubic feet per tie	3.24846	3.29765	3.54458	3.516					3.0607	2.829	
WEIGHT OF TIES:											
Untreated, hewed & sawed	206	140	140	140							
Treated, " " "	211	150	150	150							
AVERAGE COST PER MFBM OF TREATING SWITCH TIES											
Treating Cost (Contract)	15.75	17.07554	21.45258	17.29133	10.70	9.46		$27.00 per MFBM including preservatives	6.0775	4.235	
Taxes				.46332							
Preservatives:											
Creosote	7.2753	8.07399		8.17269	8.8417	8.8417			8.275D	8.1083	
Petroleum	2.5401	2.62763		2.00358	2.075	2.075			2.2083	2.0667	
Loading costs,extra handling, etc.	.0338	-		2.3041							
Artificial Seasoning				.09699			.012 C.F.				
Interest and Insurance	3.2280	3.35976		2.5796	(1)	(1)			1.95	1.83833	
Supervision & Inspection	.0739	.07041	.07271	.16247	(2)	(2)		(3)			
Total	28.9011	31.20733	21.52529	33.07408	21.6167	20.3767			18.5108	16.24833	
Total board feet treated	553,793	691,194	6189	1171,500					63,760	78,508	
WEIGHT OF SWITCH TIES:											
Untreated per MFBM	3300	3300		3300							
Treated " "	3500	3500		3500							

NOTE:
1. Interest and depreciation not included nor General Office Expense
2. Included in price to extent office and supervision expenses at the plants
3. Includes all costs at treating plant. Switch ties treated and sent to Company Store without sorting as to sizes

Office of Chief Engineer
GREAT NORTHERN RAILWAY COMPANY
May 4, 1949

April 8, 1949.

Mr. H. J. Seyton,
Chief Engineer,
Great Northern Ry.Co.
St.Paul, Minn.

Dear Mr. Seyton:

Yours April 2, about cost per cubic foot for creosote and petroleum preservatives:

All of our cross ties and switch ties were treated during 1948 with 50-50 creosote-petroleum solution.

Our Tie Treating Plant record of the cost of each preservative used per cubic foot of the total volume of ties treated at all of our plants during 1948 is as follows:

	Total cost per Cubic Foot. Including Foreign Freight. No home line freight		
	Creosote	Petroleum	Total
Cross ties	$0.1046	$0.0248	$0.1294
Switch "	.1061	.0249	.1310

Yours very truly,

HRP:e

Chief Engineer.

Change

4

$0.1293

Brainerd, Minn., April 5th, 1949

Mr. Bernard Blum:

In reply to yours of April 4th with return of Mr. Seyton's letter of April 2nd requesting cost of preservatives used per cubic foot of cross ties and switch ties treated during the year 1948.

All cross ties and switch ties were treated with 50-50 creosote-petroleum solution. Our record of the cost of each preservative used per cubic foot of the total volume of ties treated at all of our plants during 1948 is as follows.

	Total Cost per Cubic foot. Including Foreign Freight. No home line freight		
	Creosote	Petroleum	Total
Cross Ties	$0.1046	$0.0248	$0.1293
Switch Ties	.1061	.0249	.1310

AJL:rwm

Att.

3659

St. Paul, April 4, 1949.

Mr. A. J. Loom:

Your letter of January 10, giving tie treating costs for direct comparison with the figures quoted by Mr. Seyton in his letter of January 6th:

I am attaching further letter from Mr. Seyton under date of April 2 asking, if possible, to have the cost per cubic foot of the preservatives used, divided as between creosote and petroleum, to include foreign line freight charges.

If this information is readily available, will you please furnish.

Chief Engineer

TRG:S

attch.

GREAT NORTHERN RAILWAY COMPANY

OFFICE OF THE CHIEF ENGINEER

H. J. SEYTON,
CHIEF ENGINEER

ST. PAUL 1, MINN.

April 2, 1949

Mr. Bernard Blum
Chief Engineer
Northern Pacific Ry. Co.
St. Paul 1, Minnesota

Dear Sir:

Your letter of January 13th giving me information as to the cost of treating and handling ties on the Northern Pacific for the year 1948:

I now find it would be desirable, if possible, in connection with the making of the comparison between the several railroads, to have the cost per cubic foot of the preservatives used, divided as between creosote and petroleum, these costs to include any foreign line freight charges but not any haul over the company's line; this also divided as between cross ties and switch ties.

Yours truly,

H. J. Seyton

Chief Engineer

WEGB/ee

January 13, 1949

MR. H. J. SEYTON, Chief Engineer
Great Northern Railway
Saint Paul

Dear Mr. Seyton:

Replying to your joint letter of January 6, requesting statement showing the cost of treating and handling ties on the Northern Pacific, for the year 1948:

It is evident from the figures you quote that you have not included the cost of the preservative, and I assume that the Great Northern - as does the Northern Pacific at Seattle under its contract with the West Coast Wood Preserving Company - furnishes such preservative.

Our contract at Seattle includes unloading and piling in the yard for seasoning; loading on trams for treatment; boring, adzing, and incizing; treating; and loading the treated ties in cars for shipment.

The Northern Pacific owns, maintains, and operates treating plants at Brainerd, Minnesota, and at Paradise, Montana.

We do not differentiate in our costs as between grades and species. The costs which I am showing at the end of this letter are made up to correspond as nearly as we can to the set-up contained in your letter, and do not include the cost of the preservative, nor interest and depreciation on the investment at our plants at Brainerd and Paradise; nor the costs incident to ownership, such as overhead expense at the general office. They do include office and supervision expenses at the plants. The figures for the Brainerd and Paradise plants are given for comparison of the items covered by the Seattle contract, so that you will have a direct comparison as near as we can make it between contract and company operations.

We furnish our system requirements from each plant approximately as follows:

43% from Brainerd
43% from Paradise
14% from Seattle

Following is tabulation of our costs, as discussed above:

	BRAINERD	PARADISE	SEATTLE
Crossties, all grades & species, per c.f.	$ .0802	$ .0574	$.
Switchties, do per 1000 fbm	10.70	9.46	
Artificial seasoning (DUV) per c.f.	-	-	.012
Extra charges:			
Sorting switchties where more than three lengths in car.... per 1000 fbm	.50	.50	-
Sorting crossties where more than two grades or species in a car.... ea..	-	-	-
Loading treated crossties from storage, ea.	.0334	.0334	.02
Loading treated switchties from storage, per 1000 fbm	2.04	1.84	1.79
Applying anti-check irons, per iron..	.0133	.0133	.0159

bb/s
x

Brainerd, Minn., January 10th, 1949

Mr. Bernard Blum:

I am returning herewith Mr. Seyton's letter of January 6th and am submitting the following in reply to yours of the 8th requesting our treating costs for direct comparison with the figures quoted by Mr. Seyton.

It is evident from Mr. Seyton's quotations that they do not include the cost of preservatives and I assume his Railway Company furnishes preservatives the same as we do and that his contracts for treatment at Ambridge, Wisconsin, New Brighton, Minnesota and Hillyard, Washington cover the same items as are covered by our Seattle contract, namely; - unloading and piling in yard for seasoning, loading on trams for treatment, boring adzing and incising, treating, and loading treated ties for shipment.

The following costs of our treatment do not include cost of preservatives, interest and depreciation on investment at our plants at Brainerd and Paradise or other costs incidental to ownership and overhead expenses in connection with operation of our own plants. The figures I am quoting for Brainerd and Paradise include only present costs of the items covered by our Seattle contract.

		Brainerd	Paradise	Seattle
Cross Ties. All Grades & Species	Per Cu.Ft.	$0.0802	$0.0574	$0.1162
Switch Ties. All Grades & Species	Per M-FBM	10.70	9.46	15.33
Artificial seasoning (B.U.V.)	Per Cu.Ft.	0	0	.012
Extra Charges:				
Sorting switch ties where more than 3 lengths in car.	Per M-FBM	.50	.50	0
Sorting cross ties where more than 2 grades or species in a car.	Per Tie	0	0	0
Loading treated cross ties from storage.	Per Tie	.0334	.0334	.02
Loading Treated switch ties from storage.	Per M-FBM	2.04	1.84	1.79
Applying Anti-Checking Irons	Per Iron	.0133	.0133	.0159

Mr. Bernard Blum

Brainerd, Minn., Jan. 10th, 1949

System requirements are furnished from each plant approximately as follows:

43% from Brainerd
43% from Paradise
14% from Seattle

AJL:rwm

Att.

3659

Saint Paul, January 8, 1949

MR. A. J. LOOM:

I am attaching Mr. Seyton's joint letter of the 6th inquiring as to our costs of treating and handling ties for the year 1948.

Mr. Seyton quotes contract prices they are paying at Ambridge, New Brighton, Hillyard; and I presume it would be a simple matter to quote our prices at the West Coast plant. I believe we had no Hillyard operation the past year.

Mr. Seyton does not set up the method of showing the costs at Somers; and quite possibly their set up may be somewhat different from the way you keep your records at Brainerd and Paradise.

Will you let me have a statement listing the costs at the three plants on our line.

bb/s

att.

GREAT NORTHERN RAILWAY COMPANY

OFFICE OF THE CHIEF ENGINEER

H. J. SEYTON
CHIEF ENGINEER

ST. PAUL 1, MINN.

January 6, 1949

Mr. Bernard Blum, Chief Engr.
Northern Pacific Ry. Co.
St. Paul 1, Minnesota

Mr. H. R. Clarke, Chief Engr.
Chicago, Burlington & Quincy Rd. Co.
547 West Jackson Blvd.
Chicago 6, Illinois

Mr. C. F. Thomas, Chief Engr.
Spokane, Portland & Seattle Ry. Co.
1101 N.W.Hoyt Street
Portland 7, Oregon

Dear Sir:

We have been asked by our superiors to furnish a statement showing comparative costs of treating and handling ties on the Great Northern, Northern Pacific, Burlington and S.P.& S. for the year 1948 with a view, as far as possible, of having the comparison on a uniform basis.

We only have one plant that we are operating on our own account and that is at Somers, Montana. The plant at Ambridge, near Superior, Wisconsin, belongs to the Koppers Company. The plant at New Brighton belongs to the Minnesota & Ontario Paper Company, and the plant at Hillyard is leased by the Great Northern to the Minnesota & Ontario Paper Company.

We are getting together figures now for our Somers plant, but will not have them available for a short time. I am giving you below our contract unit costs for Ambridge, New Brighton and Hillyard -

		Ambridge Wisconsin	New Brighton Minnesota		Hillyard Wash.	
			To 5/3	After 5/4	To 5/3	After 5/4
Cross Ties						
Pine - All Grades	Per Cu.ft.	.13				
Pine - Grade 3	" "	-	.13½	.15½	.13½	.15½
Pine - Grade 4	" "	-	.13	.15	.13	.15
Pine - Grade 5	" "	-	.12½	.14½	.12½	.14½
Fir - All Grades	" "	.15½	.15½	.17½	.15½	.17½
Larch - " "	" "	.14	.14	.16	.14	.16
Hardwoods - All Grades	" "	.14	-	-		

Mr. Bernard Blum - 2
NP Ry - St. Paul

St. Paul - Jan. 6, 1949

Mr. H. R. Clarke
CB&Q - Chicago

Mr. C. F. Thomas
SP&S - Portland

		Ambridge Wisconsin	New Brighton Minnesota		Hillyard Wash.	
			To 5/3	After 5/4	To 5/3	After 5/4
Switch Ties						
Larch	Per MFBM	$15.75	$15.75	$17.42	$15.75	$17.42
Fir	" "	15.75	15.75	17.42	15.75	17.42
Pine	" "	13.75	13.75	15.42	13.75	15.42
Artificial seasoning (boiling in oil)	Per Cu. ft.	.02	.02	.02½	.02	.02½
Extra charges:						
Sorting switch ties where more than 3 lengths in car.	Per MFBM	1.50	1.50	1.68	1.50	1.68
Sorting cross ties where more than 2 grades or species in a car.	Per tie	.0125	.0125	.0134	.0125	.0134
Loading treated cross ties from storage.	Per tie				.0318	.0342
Loading treated switch ties from storage.	Per MFBM				1.17	1.25
Applying anti-check irons	Ea.	.0125				

If you can and are agreeable to doing so would like to have similar information covering your plants, otherwise would like to have it in the best form you can supply. If costs vary at different plants would like to know about what percentage of ties for the system are secured from each plant.

Yours truly,

H J Seyton

Chief Engineer

WEGB/ee

B Blinkhorn

3659

September 24, 1948

West Coast Wood Preserving Company
1118 Fourth Avenue
Seattle, Washington

Letter EMW
9-22-48

948-301

A. J. Loom, General Superintendent Timber Preservation,
Seattle, Washington.

100,000	Gallons Creosote Grade No. 1	Approximately .22-1/8 gallon

Your Storage Tanks,
Seattle, Washington.

To be delivered during January or February, 1949.

cc AJL BB GHS

9793

3659

Saint Paul, September 24, 1948

MR. A. J. LOOM:

I have noted with interest, and am returning to you, the A.R.E.A. Preservative Survey received with your letter of the 22nd.

While the Northern Pacific, I understand, lost money on the Tacoma coke-coal tar plant, I believe it was a blessing in disguise insofar as our tie treatment is concerned that it did not continue.

There is one aspect in this report that makes one wonder: i.e. railroads such as the Norfolk & Western, L&N, and ACL, stick to 100% creosote. Also of interest is the Santa Fe practice of 30% creosote and 70% petroleum. I think you ought to check into that and see what results they are obtaining. Do you know how long the Santa Fe has used this thin mixture?

bb/s

att.

Brainerd, Minn., September 22nd, 1948

Mr. Bernard Blum:

You may wish to note and return the attached"A.R.E.A. Preservatives Survey" and the accompanying letter of September 18th from Mr. Jaeger, Chairman of the Sub-Committee which has this assignment.

It is interesting to note that all railroads that were treating with straight coal tar have now discontinued this practice.

AJL:rwm

Att.

3659

August 13, 1948

14296-8 848-S-L

Koppers Company, Inc.
Wood Preserving Divn.
P. O. Box 193
Superior, Wisconsin

J. S. Sewall, DSK, Brainerd, Minnesota
G.N. Ry., Ambridge, Wis., NP Ry. from Superior, Wisc.

After treatment ship to NP Ry. Co., c/o J. S. Sewall, DSK, Brainerd, Minnesota

468 Lin. Ft. Hdwd. 3/4 x 2-1/2 Prd.

468 " " " 2 x 4 Prd.

25 Pcs. Hdwd. 1-7/8 x 8 x 1' 6-1/4" Prd.

25 " " 1-7/8 x 8 x 4' 1/4" Prd.

100 " " 2-1/2 x 8 x 1' 6-1/4" Prd.

50 " " 2-1/2 x 8 x 4' 1/4" Prd.

176 " " 3-1/8 x 8 x 1' 9-3/4" Prd.

88 " " 3-1/8 x 8 x 4' 1/4" Prd.

12 " " 4 x 4 x 1' 6-1/4" Prd.

16 " " 4 x 4 x 1' 9-3/4" Prd.

14 " " 4 x 4 x 4' 1-1/2" Prd.

NP Code No.

83 Pcs. 4-0342 Fir 8 x 8 x 12' S.H.

Copy of bill of lading No. 812, G. N. Car 32753, attached.

Aug. 13, 1948

14290-8 848-5-L

Koppers Company, Inc.
Wood Preserving Divn.

-2-

J. S. Sewall, DSK, Brainerd, Minn.
G. N. Ry., Ambridge, Wis., NP Ry. from Superior, Wisc.

NOTE: The above material was shipped to your Treating Plant at Ambridge, Wisconsin August 3rd, 1948, on GN 32753.

"The above described material to be treated with 50-50 creosote-petroleum solution if available. If not, straight creosote is acceptable. Preservatives and treatment to be in accordance with A.W.P.A. Specifications."

"Please notify A. J. Loom, General Superintendent, Timber Preservation, Brainerd, Minnesota, when material is ready for inspection of treatment."

mh

cc - AJL
BB
JSS
PCT

3659

Saint Paul, July 28, 1948

MR. CALEB CORSER
MR. J. T. STOTLER
MR. C. W. COIL
MR. D. A. THOMSON
MR. R. W. DAVIS
MR. D. S. COLBY
MR. I. P. IVERSEN

Mr. Loom advises that most of the second-hand bridge timbers sent to the treating plants for creosoting are good sound stock; but that occasionally some of the large stringers are rotten at the ends.

The treating plants do not have the facilities for sawing off decayed ends, without expensive handling, and it has been found that some have been treated without trimming.

Will you issue the necessary instructions that rotten ends, etc. shall be sawed off and the timbers trimmed to the required sizes BEFORE shipment to the plants for treatment? This procedure will avoid waste of preservative and eliminate subsequent cutting off and painting with creosote of timber ends when they reach their ultimate destination.

B E R N A R D B L U M

bb/s

cc-Mr. J. T. Derrig
Mr. H. F. Brown
Mr. V. A. Bennett
Mr. H. M. Tremaine
Mr. G. I. Hayward

Mr. A. J. Loom

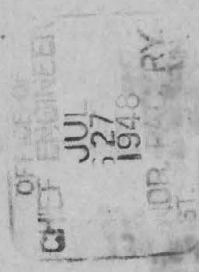
Brainerd, Minn., July 24th, 1948

Mr. Bernard Blum:

Most of the second-hand bridge timbers sent to the plants for treatment is good sound timber, but occasionally some of the large stringers are rotten on the ends and as the plants do not have facilities for sawing off the decayed ends, without expensive handling, I find that some have been treated without trimming.

It may be well to again remind the shippers and all concerned about the necessity for sawing off rotten ends and otherwise trimming timbers as nearly as possible to required sizes before such materials are shipped to the treating plants and thereby avoid waste of preservative and cutting and subsequent painting of ends with creosote after treated material reaches final destination.

AJL:rwm


OF THE
CHIEF ENGINEER
JUL
27
1948
DR.
ST.

3659

JAN. 3, 1948

21247-11 148-179

WEST COAST PRESERVING CO.
1118 4TH AVE. AT SENECA ST.
SEATTLE 1, WASHINGTON

ED1756

A. J. LOOM, GEN. SUPT. TIMBER PRESERVATION, SEATTLE, WASHINGTON

200,000 GALLONS CRESOTE GRADE #1

22.4¢ PER GALLON

YOUR STORAGE TANKS SEATTLE

DELIVERY: DURING MARCH, 1948

COPY: AJL
BB ✓
LSM
FILE

3659

Brainerd, Minn., August 28, 1947.

Mr. Bernard Blum:

Information in the attached narrative about our Brainerd treating plant is compiled from records in this office that have either been published before or are available from other sources. I have tried to avoid anything except general information but wish to have your approval before sending it out.

If you approve, kindly forward my letter to Mr. Horn and the narrative to the Lake States Forest Experiment Station, St. Paul, in the enclosed addressed envelope. If you think this narrative contains any information that should not be sent out, please return it and the letters with your advice.

AJL:lep

Enc.

Letter approved
Ava Milam 8/29/47

3659

May 21, 1947

H. J. SEXTON, Chief Engineer
Great Northern Railway
Saint Paul

Dear Mr. Sexton:

Your mailgram date, D-283, about service received from pine ties cut from timber in the BITTER ROOT area:

I think there has been some misunderstanding with respect to the source of the pine timber. It is quite likely that some years ago pine ties were produced in the Bitter Root area but we have no special record of their placement from which to determine the actual service life.

had
Mr. Hughes tells me that he/discussion with the Great Northern covering pine ties produced in the Kalispel area northwest of Flathead lake and delivered to the Northern Pacific at Polson; which ties have been produced by Rather.

Answering your inquiry: we have treated these ties since 1946 with a 50-50 percent mixture of creosote and fuel oil. Between 1929-1946 we treated with 45% creosote and 55% fuel oil. Prior to 1929 the mixture was creosote and coal tar.

With respect to the tieplates used on these ties: #5 ties are used in main track, and for a number of years have been equipped with 7½ x 10 3/4 inch plates, and now are equipped with 8 x 11. The #4 and #3 ties are used on branch lines and secondary tracks and are equipped with 7 x 9 plates. A service life of 20-25 years is obtained from these ties.

Very truly yours,

bb/s
x

Rattrey - delivered @
N.W. Flathead Polson
Kalispell

Mr. Loom advises that some years ago pine ties were no doubt produced in the Bitter Root territory, but as they were not particularly identified no individual record of their placement was established from which actual service life could be determined; however, he has no reason to believe that a service life of 20 to 25 years could not be expected.

The class of tracks such ties were or would be placed in depends upon grade (5-4-3-2-1)received, with a corresponding use of large or small tie plates.

Up to 1946 treating mixture consisted of 60% creosote,40% fuel oil. Since January 1946 this mixture has been 50% creosote and 50% fuel oil.

5/21-'47

SERVICE REQUIRED	MARK HERE
NIGHT LETTER	
DAY LETTER	
FAST MESSAGE	

Form 1153 Printed in U. S. A.

TELEGRAM

TIME FILED

MAILGRAM St. Paul- May 21, 1947

Mr. Bernard Blum, Chief Engr.
Northern Pacific Ry. Co. - St. Paul

Our Vice President addresses me as follows:

"Can you ascertain quickly from Northern Pacific what service life they are getting from their pine ties cut from timber in the Bitter Root area? In what class of tracks are they using these pine ties, and are they using straight creosote and heavy plates on these ties."

I understood from a telephone conversation the other day that no such ties have been produced or used for at least 20 years, but Mr. Dixon's office informed me that your Mr. Hughes advises that this timber was cut off and used as ties. Would be glad to have the information as quickly as possible. B-283.

H. J. Seyton

WEGB/ee

3659

2/2/47

Mr. R. J. SEYTON
Chief Engineer, Great Northern Ry
Saint Paul

Dear Mr. Seyton:

Your letter of January 25 about unit costs for treating ties:

Our 1946 figures have not been worked up. The 1945 figures would not be of a great deal of value today on account of the increase in the contributing items during the past year. We have therefore taken cost figures from our 1945 annual report, and calibrated them to provide for all increases that occurred since so that I believe the figures being furnished you are present costs.

On account of the shortage of hardwood timber at the Brainerd plant we treated only 261,714 ties at that point. In 1945 we treated 411,649 at Paradise, but that program was lighter than usual, so the overhead items are higher than we had considered normal.

Our costs have increased since 1945 as follows:

	Brainerd	Paradise
Labor and supervision	7.67¢	6.85¢
Preservatives	4.54	5.14
Other items	.3¢	.24
Total increase	12.62	12.23

We do not keep a breakdown of our accounting system to permit replies to each of your questions, but I believe the attached statements of our costs, together with the sheets listing the rates of pay weighted for the different classes of labor and piece work, and the other information shown, will give you a pretty good picture of our expenses. The indirect and general expenses - such as insurance and taxes - are not carried in our account. They represent a very small percentage of our total cost, and we have included in the estimate of such expenses in our item "Taxes and Miscellaneous" these costs. I would be glad to know the results of your analysis.

Very truly yours,

bb/s att.

Brainerd, Minn., January 30, 1947.

Mr. Bernard Blum:

In response to your letter of January 27th, I am returning herewith Mr. Seyton's letter of January 25th and data we have prepared from our accounts for reply to his questionnaire about our treating costs at Brainerd and Paradise.

We have followed your suggestion and used our annual report of 1945 costs calibrated to provide for all increases that have occured since that time, so figures quoted are our present costs. There were only 261,714 ties at Brainerd and 411,849 treated at Paradise in 1945 but, as you know, the program this year is also lighter than usual so the overhead items are higher than normal. Our costs have increased since 1945 as follows: at Brainerd, Labor & Supervision - 7.69%; Preservatives - 4.54%; Other Items - .39%, or a total of 12.62% per tie. At Paradise, Labor & Supervision - 6.85%; Preservatives - 5.14%; Other Items - .24%, or a total of 12.23% per tie.

We do not keep in our accounting system a breakdown to permit direct replies to each of Mr. Seyton's questions, but I believe the attached statments showing our costs for each item of expense and the lists of rates paid for different classes of labor and piece work, as well as number of men employed, include all of the information he desires with possible exception of indirect and general expenses such as insurance and taxes, which are not carried in our accounts. These items as you know represent a very low percentage of our total costs and we have included our estimate of these expenses in our item - "Taxes & Miscellaneous".

AJL:lep

att.

PRESENT COST OF TREATING CROSS TIES AT BRAINERD AND PARADISE TIE PLANTS BASED ON ACTUAL COSTS IN 1945 PLUS WAGE INCREASES GRANTED AND ADDITIONAL EXPENSES INCURRED TO DATE

	COST PER TIE	
	BRAINERD	PARADISE
PRESERVATIVES (50-50 Creosote-Petroleum)	$0.3018	$0.2824
FUEL	.0104	.0081
PIECE WORK TIE HANDLING	.1234	.1033
PLANT LABOR	.1156	.0994
SUPERVISION	.0185	.0118
MATERIAL & SUPPLIES	.0316	.0164
INTEREST & DEPRECIATION	.0252	.0215
TAXES AND MISCELLANEOUS (Estimate)	.0204	.0204
TOTAL COST PER TIE	$0.6469	$0.5633
Cost of Boring, Adzing and Incising Cross Ties, included in items above:	$0.0383	$0.0460

	COST PER M-FBM	
	BRAINERD	PARADISE
SWITCH TIES	$ 24.70	$ 22.21
LUMBER	23.00	23.00
PILING	27.36	27.41
POLES	20.60	22.93

Office of Gen'l Supt. Timber Preservation,
Brainerd, Minnesota, January 30th, 1947.

RATES OF PAY NOW IN EFFECT AT BRAINERD AND
PARADISE TIE TREATING PLANTS AND
NUMBER OF MEN EMPLOYED
UNDER EACH CLASSIFICATION
AT EACH PLANT.

NUMBER EMPLOYED	CLASSIFICATION	RATE
1	General Foreman	$ 286.10 Per Mo.
1	Yard Clerk	8.56 Per Day
1	Engineer-Electrician	256.31 Per Mo.
2	Treating Engineer	239.81 " "
3	Fireman	231.61 " "
1	Motorman	223.31 " "
1	Boring Machine Operator	1.135 Per Hr.
1	Leading Laborer	.935 " "
1	Boring Machine Operator's Helper	.845 " "
1	Motorman's Helper	.845 " "
1	Incisor Operator	.845 " "
2	Door Tender	.845 " "
2	Laborer	.845 " "
1	Watchman	.825 " "

All material handling is performed by piece workers, who are paid as per schedule of rates attached. Twenty piece workers constitute average crew at each plant.

Brainerd, Minnesota,
January 28th, 1947.

3659

January 27, 1947.

Mr. A. J. Loom:

I am attaching Mr. Seyton's letter of the 25th to me about unit costs for treating ties at Brainerd and Paradise. I will be glad to have you fill out this questionnaire and return it at your early convenience.

I think that we will be interested in this comparison in view of the recent increase in price demanded by the West Coast Company in view of the wage increase they are paying from December 1.

Possibly some of your 1946 unit costs have not been worked up. If not, you can probably use the 1945 costs calibrated to provide for such increases as were made in 1946.

BB/gtg
enc.

BERNARD BLUM

cc - Mr. H. J. Seyton

GREAT NORTHERN RAILWAY COMPANY

OFFICE OF THE CHIEF ENGINEER

H. J. SEYTON,
CHIEF ENGINEER

ST. PAUL 1, MINN.

January 25, 1947

Mr. Bernard Blum
Chief Engineer
Northern Pacific Ry. Co.
St. Paul, Minnesota

Dear Sir:

We are confronted with the possibility of having to grant increased prices in our contracts for treating ties at several different locations on the Great Northern. We of course have records showing what it is costing us to operate our treating plant at Somers, Montana, but I would appreciate having such information as you feel free to furnish covering the operation of your plants at Brainerd and Paradise.

I presume you have statements which will either show the cost for the year 1946 or for the last 12 months period. Our statements are broken down to show costs either on a cubic foot basis or the price per piece, under the following headings -

Direct Labor Handling Charges	Per Cu.ft.	or Per Piece
Handling green ties for storage:		
Labor		
Supplies - Other expenses		
Handling dry ties from storage to tram cars for treatment:		
Labor		
Supplies - Other expenses		
Handling treated ties:		
Labor		
Supplies & Other expenses		
Handling poles, piling, timbers, etc.:		
Labor		
Supplies & Other expenses		
Operation of tramway:		
Labor		
Supplies & Other expenses		

January 25, 1947

Adzing, boring and Incising ties:
Labor
Supplies & Other expenses

Operation of retorts:
Labor
Supplies & Other expenses

Other indirect and General Expenses:
Power, heat, light & water
Insurance
Personal injury payments
Rental of plant facilities
Taxes - General
Railroad unemployment insurance
Carriers taxing act of 1937

Repairs -
Labor
Supplies & Other expenses

Depreciation on Company Equipment

Superintendence & Clerical:
Salaries
Supplies & Other expenses

I do not have in mind requesting that your statements be reworked to give the same information, but if they are available and this dats is shown I would appreciate getting it.

I would also like to know when the last increases in wages were allowed and the rates paid for different classes of labor used at the plants. If any of the work is done on a piece work basis would you indicate what these prices are, and when they were last incfeased.

Yours truly,

W. E. Greytow

Chief Engineer

WEGB/ee

3659A

Brainerd, Minn., October 14, 1946.

Mr. L. Yager:

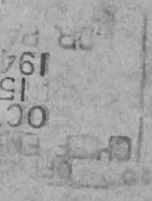
Since your letter of October 2nd and return of literature from the Wood Treating Chemicals Company about "Copper Naphthenate Petroleum Solution for Pressure Treatment", I have tried to find out who are the principal users. Today I have the following letter from Mr. E. P. Gowing of the Kentuckiana Products Co., Louisville, Ky., who is also promoting the use of this preservative:

> "Thank you for your letter. I am enclosing data on Copper Naphthenate which may be of interest. Actually I find from the experience of such roads as the L & N the 5% solution handles with no more difficulty, if as much as 80/20.
>
> "It is still available but it won't take many more plants to exhaust the present supply."

I expect to attent a meeting of the A.R.E.A. Wood Preservation Committee at Chicago next Thursday, the 17th, and will let you know what more I can learn about this preservative and experiences of its users.

AJL:lep

cc: Mr. Bernard Blum


OCT
15
194

St. Paul, Minnesota
October 2, 1946

Mr. A. V. Loom:

As requested in Mr. Blum's letter of September 18, of which you received copy, I have read the pamphlet of the Wood Treating Chemicals Co. concerning copper naphthenate-petroleum solutions in the pressure treatment of wood transmitted to you by R. M. Moriss, Jr., Vice President of this company in his letter of September 10.

This is a rather interesting development and naturally gives rise to the suggestion that you follow through the subject with those authorities having standing in the forest products treating industry in order that we may be able to take advantage of whatever favorable developments may occur in the treating field. I say this for the rather patent reason that with the rising cost of preservatives we should be in a position to take advantage of improvements in this field which have an economic justification.

The necessity for keeping in touch with developments is specifically related to the petroleum specifications in that petroleum within well defined specification limits appears to be essential to make a success of this method of treatment. It seems to be important to know whether the petroleum economically available to us is suitable for this process.

In your letter of April 30 last you stated that you obtained certain information while on your visit to The Dalles, Oregon, about the utilization of pentachlorphenol crystals in creosote and petroleum, the information available at that time being suggestive that the heavy fuel oil that we are using is not satisfactory for that purpose. I naturally assume that we are obtaining our petroleum from the source most economical so that if the oil we are using is not of the right quality for successful utilization of pentachlorphenol that might possibly make a difference in the economics for our use of pentachlorphenol in conjunction with creosote. Has the forest products laboratory at Madison had occasion to conduct any investigations in these two newer treating chemicals?

In response to Mr. Blum's question as to whether the copper treatment developed by the Western Union for poles has any relation to the copper product offered by the Wood Treating Chemicals Co., it would be necessary to say that I have had no contact with this subject in so far as it relates to the Western Union and the American Telephone & Telegraph Co. developments in the past eight or ten years.

LY/jwm cc: Mr. Bernard Blum
with attach.

L. YAGER

3659A

Saint Paul, September 18, 1946

MR. L. YAGER:

You will be interested in the attached pamphlet of the Wood Treating Chemicals Co. concerning copper naphthenate-petroleum solutions in the pressure treatment of wood.

Will you return it to Mr. Loom.

Their claims are interesting. Is there any relation in this to the copper treatment developed by Western Union men for poles?

cc-Mr. A. J. Loom

bb/s

att.

3659 A

Brainerd, Minn., Sept. 12th, 1946.

Mr. Bernard Blum:

You may wish to note and return the attached letter of Sept. 10th and Technical Bulletin CN-1500 which I received today from Mr. R. M. Morriss, Jr., Vice President of the Wood Treating Chemicals Co., about Copper Naphthenate-Petroleum Solutions for Pressure Treatment of Wood.

You will recall their letter of August 2nd and bulletin about Pentachlorphenol solution which you returned to me with yours of August 19th. Mr. Morriss stated in that letter pentachlorphenol was not yet available from his company on account of strike conditions.

From my discussion with technical men in the A.W.P.A., I am inclined to favor Copper Naphthenate in preference to pentachlorphenol for mixture with petroleum in the event of a possible shortage of creosote. I was informed that the Koppers Company had recently purchased a large portion of all the copper napthenate manufactured in the United States for use at their treating plants, which as you may know they operate at 21 locations in this country.

You will note that the high flash petroleum oils we are now using for mixture with creosote seem to be entirely satisfactory for use with the liquid copper naphthenate concentrate which is available for delivery to treating plants in tank cars and can be handled much the same as creosote or fuel oil without any special equipment for pumping or mixing.

I was told that the price of the 80% copper naphthenate ready to use solution would be about 17¢ per gallon F.O.B. St.Louis and that this solution was said to be equivalent to creosote for general use except for protection against marine borers.

I do not know that the Koppers Company purchase referred to has any significance with reference to shortage of creosote, but it may be well for Mr. Willis to inquire about prospects for obtaining an adequate creosote supply, which I estimate for the coming year will need to be at least what it was the past year.

AJL/s
Encl.

Yours

B

Brainerd, Minn., August 21, 1946.

Mr. Bernard Blum:

In reply to yours of August 19th about pole peeling machines referred to in my letter of the 15th:

There are several types of power machines now being used for this purpose, including the Straiton Pole Peeling Machine which is described in a bulletin I returned to you with my letter of August 18th, 1939. I do not have on file at present a description of any of these machines but I have witnessed operation of several of the type mentioned in my letter of the 15th which, as I recall, is called the Thompson Pole Peeling Machine. The nearest one I know of was installed recently at the Koppers Company treating plant at Superior, Wisconsin, where Jack Pine poles were being peeled and treated for the Wheeler Lumber, Bridge & Supply Company when I visited that plant last month. Machines now located at Bozeman, Arlee and Thompson Falls in Montana are of this same type.

The pole is revolved as it would be in a lathe but is moved endwise through the machine by adjustable rubber-tired wheels on the lower side that also control the turning. The bark is removed by two separate gaining heads attached to the ends of two adjustable arms located close together on the top side and controlled by the operator, who raises and lowers these arms as required to remove the bark and true up the pole. A blower system moves bark and shavings to a hopper to be used as fuel for the steam boilers or hauled away by truck. Small steel trucks and narrow gauge tracks are provided on both sides of the machine for infeed and outfeed of the poles. Two men are required at the infeed side and two at the outfeed side besides the operator making a crew of five men to operate the machine. Maximum speed of peeling is 1000 lineal feet per hour, so it certainly

is a labor saving device and does a much better job than I ever saw done by hand with draw knives or so-called slip peeling, which can be done only when bark is loose so it slips off the wood in strips.

Slip peeling of fir as mentioned in our specification E-118 can be done only in the summertime, immediately after green trees are cut. If allowed to remain too long before treatment, the pitch in this wood forms a varnish-like coating on slip peeled poles that becomes difficult to penetrate with preservatives, so it is for that reason that quick movement to the treating plant is desireable.

AJL:lep


BUREAU OF
CHIEF
AUG
1955
RY.

3659A

St. Paul, Minn., August 19, 1946.

Mr. A. J. Loom:

Your letter of the 15th and returning your papers on pentachlorophenol treatment of timber and poles.

I have not heard of a pole peeling machine. What is it, a sort of lathe that rips the bark off?

Somewhere I saw a reference to slip peeling. What does that mean?

BB/gtg
enc.

a.j.l.
return

Brainerd, Minn., August 15, 1946.

Mr. Bernard Blum:

With return of the newspaper clipping about butt treatment of R.E.A. poles at Philipsburg, Montana which you sent me with your letter of July 31st, I am enclosing bulletins describing the pentachlorophenol-petroleum solution now being sold by the Wood Treating Chemicals Co. under the trade name "Santophen 20", which you may wish to note and return.

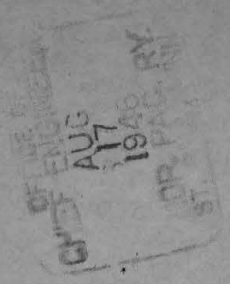
As you may recall, other chemical companies are also preparing solutions of pentachlorophenol and petroleum for use in place of creosote and are offering them in tank cars already mixed and ready for use.

Lodgepole pine pole production in the Paradise district is increasing rapidly and will in my estimation develop into big business, especially since cedar is becoming scarce, R.E.A. construction is expanding and there is such a big demand for poles for other purposes.

Pole peeling machines, which cost about $10,000.00 at the factory, have been set up at Bozeman, Arlee and Thompson Falls and on my recent trip I saw poles being hauled out of the woods at other points.

A new two-cylinder pressure treating plant is about completed at Libby, Montana and I was told it would soon be in operation principally for treatment of R.E.A. poles.

AJL:lep
enclosures (2)



3659A

Saint Paul, July 31,1946

MR. A. J. LOOM:

Please note the attached article from the July 23 issue of the MONTANA STANDARD, about treatment of poles under the PENTACHLOROPHENOL process.

bb/s

att.

MONTANA STANDARD, BUTTE, MONTANA
JULY 23, 1946

Poles Are Treated With New Oil Process at Philipsburg Plant

Another milestone in the timber industry in the Butte area was passed Sunday when the first poles to be treated in a recently-completed plant at Philipsburg underwent a new process.

Supervisor W. E. Fry of the Deer Lodge National forest and several other persons, some of them from Washington and Wisconsin, attended the spectacular experiment as 192 poles, enough to provide one and one-half carloads of necessary utility supports, went through hot and cold oil baths.

"The new treatment process is necessitated by the shortage of creosote, which previously was the standard treating solution for poles," Mr. Fry explained.

The first poles were placed in an eight-foot deep oil bath, which bubbled at 215 degrees for four hours, driving out the moisture in the poles. The poles do not absorb any of the boiling oil, the supervisor said.

"Then they are given a cold oil treatment, which is accomplished by draining the hot oil out of the tank and allowing the cold oil to run in," he said. "The exchange of oil must be accomplished in 30 minutes to take advantage of the effect created by the hot oil bath. Pentachlorophenal, an insecticide which stops decay and fungus growth in the wood, and a special dye are added to the cold oil to determine the amount of penetration into the wood. Both the oil and insecticide are light in color.

"Penetration must be one-half inch into the wood or one-half the thickness of the sap wood—the outer, growing layer," he added.

Present at the experiment besides Supervisor Fry were J. C. Whitham of Butte, staff man in charge of timber sales in the Deer Lodge National forest; Dr. Huber of Spokane, Wash., who devised phases of the treatment; R. A. Coster, forester for the Rural Electrification administration, and Lincoln Ellison, from the forest service experiment station, both of Missoula, and two representatives of the forest products laboratory, Madison, Wis.

The Granite Pole company, where the treatment was accomplished, expects to treat 50,000 poles annually. An estimated 13,000 poles now are ready for treatment.

3659A

Saint Paul, June 2, 1946

MR. A. J. LOOM:

Your letter of May 21 and 31st about suggestion to use PENTACHORPHENOL in our treatment at the Seattle plant:

I am glad that the situation is now developing so that we can resume the creosote-fuel oil treatment.

However, I think we should continue to watch developments in the use of pentachorphenol.

cc-Mr. E. M. Willis
Mr. L. Yager

bb/s

Brainerd, Minn., May 31, 1946

Mr. Bernard Blum:

Referring to my letter of May 21st, quoting Mr. Dreitzler's Western Union telegram of same date recommending use pentachorphenol in our treatment at the Seattle plant.

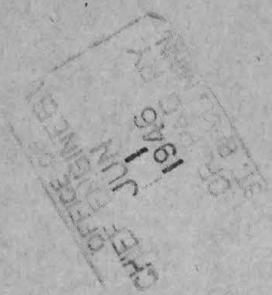
On May 25th I wrote Mr. Stone that we had five tank cars creosote enroute to Seattle and that the Purchasing Department had assured us of sufficient delivery to repay what we owe them and to build up a surplus for our own requirements.

Today I have the following Western Union from Mr. Dreitzler which confirms my statement to you that I doubted if there would be any a appreciable supply of pentachlorphenol available for several months.

> "Please disregard our wire May 21st I.F.Laucks, Inc. now find they are unable to guarantee adequate supply of pentachlorophenol to satisfy our requirements. Pleased to hear from Stone that you have located ample supply of creosote".

AJL/b

cc; Mr.E.M.Willis
Mr.L.Yager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Brainerd, Minn., May 21, 1946

Mr. Bernard Blum:

Referring to my letter of May 11th to Mr. Willis with copy to you and Mr. Yager about the creosote situation at the Seattle plant.

On May 17th Mr. Stone wired me from Seattle as follows:

"WCW has less than 150,000 Gallons creosote on hand and are very concerned about our dept to them their present supply good for nearly three weeks only."

On May 18th I replied to Mr. Stone as follows:

"Three tank cars creosote promised for delivery to Seattle plant this month and every effort is being made to increase shipment. Delivery to Brainerd and Paradise has been stopped with storage tanks empty in order to rush all creosote available to Seattle. Please inform Mr. Dreitzler".

day
At 3:20 PM to/ I received the following Western Union telegram from Mr. R. F. Dreitzler, Manager, West Coast Wood Preserving Company:

B

"Because of present creosote shortage and uncertain future supply strongly urge that you consider immediate adoption of 25% Creosote - 75% Fuel Oil and 5% Pentachlorphenol solution in lieu of creosote-petroleum solution, for such treatments as were specified. This is same formula now being used by R.E.A., Western Electric and others. With prompt acceptance I. F. Lacuks, Inc. can supply pentachlorphenol to satisfy our immediate and future requirements. Hope to Air Mail complete details and costs this week."

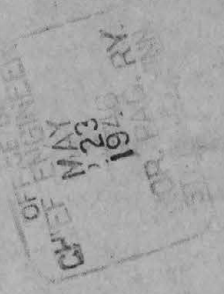
Evidently Mr. Dreitzler thinks his prospects for obtaining a sufficient supply of creosote to keep his plants in operation are not very promising, and the results of his recent experiments with 25% creosote, 75% Heavy fuel oil and 5% pentachlorphenol have been more successful than we have been led to believe they would be.

In reply I have wired him today in care of Mr. Stone as follows:

"Will wait with interest for details of your experiments with pentachlorphenol and prospects for supply. Please keep Mr. Stone informed".

AJL/b

cc: Mr. E. M. Willis
Mr. L. Yager


OFFICE OF
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3659A

Train 1, Enroute to Mandan, May 8,1946

Mr. A. J. LOOM:

Your letter of the 30th, transmitting copy of letter from the A. D. Chapmmn & Co. to you about pentachlorphenol solution in fuel oil:

From their very general descriptions of the fuel oil and what they say I assume that the heavy asphalt base oils that we use at the treating plants are not so good for dissolving the pentachlorphenol crystals. In any event we seem to be getting by with creosote treatment, but I do not imagine it can last much longer with the present coal situation.

cc-Mr. L. Yager

bb/s

Brainerd, Minn., April 30, 1946

Mr. Bernard Blum:

Referring to yours of March 22nd and Mr. Yager's letter of same date about feasibility of using pentachlorphenol in solution with heavy fuel oils of the kind we are using in our 50-50 creosote-petroleum solution.

I am attaching copy of Chapman Chemical Company's letter of April 25th which I received today advising results of their test of the sample of our fuel oil that I sent them last month.

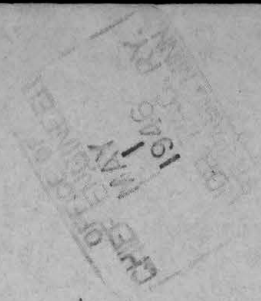
You will note they state that this fuel oil showed satisfactory solvency but they are continuing their tests to determine if obvious undesireable sludging characteristics can be avoided.

On my recent visit at The Dalles, Oregon I was shown equipment being constructed to dissolve pentachlorphenol crystals in creosote and petroleum. The crystals were said to dissolve much more rapidly in creosote than in any kind of petroleum and it was the plan at this plant to use 25% creosote, 75% petroleum and .4 of a pound of crystals to each gallon of petroleum. This was said to be equal in preservative value to No. 1 creosote but the only fuel oils they had found satisfactory were very light and ranged in price from 5¢ to 7¢ per gallon so there was no saving in cost over straight creosote.

Recent experiments with heavy fuels oils such as we are using indicated that they were not satisfactory for this purpose, but it will be interesting to note what future tests will develop and I will keep in mind Mr. Yager's suggestion about adding Lignite Tar creosote to a solution of pentachlorphenol and heavy petroleum.

Will continue to keep you informed as fast as reliable information becomes available.

AJL/b
cc: Mr. E. M. Willis
Mr. L. Yager


MAY
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C O P Y

CHAPMAN CHEMICAL COMPANY
Manufacturing Chemists
Memphis 9, Tennessee

April 25, 1946

Mr. A. J. Loom,
General Supt. Timber Preservation
Northern Pacific Railway
Brainerd, Minnesota

Dear Mr. Loom:

We are sorry to have been so long delayed in forwarding our comments regarding the sample of heavy fuel oil you submitted for testing. We have had some 50 or 60 samples in our laboratory during the last few months, and we found it rather difficult to run them all at a sufficiently rapid pace to meet the demand.

The fuel oil showed a satisfactory solvency for pentachlorphenol, having carried 20-25 percent at 75-80° F. Because of the nature of the material, it was not possible to determine the solvency at 30-35° F., but experience has indicated that oils of this type ordinarily will carry within 5 percent of their maximum pentachlorphenol solvency at reduced temperatures. This oil is somewhat heavier than the average and in general, results obtained in creosote-penta-petroleum mixtures with oils of this character have not been too satisfactory. As yet, we have been unable to complete a determination of the relative sludging characteristics but will make another attempt and advise you of the results.

Most of our treating accounts have turned to lighter colored, lighter bodied oils for use in creosote mixtures and have obtained very satisfactory results as to penetration and considerably reduced cylinder times as a result of using low viscosity systems. We know of very few treating operations who have used residual type oils and in general the amounts of sludge formed by such oils are quite high, usually in the magnitude of 1.5 to 3.0 percent as determined by our relative sludging procedure. These figures are, of course, outside of what would be advisable in selection of an oil for use in creosote-penta-petroleum mixes or in straight penta mixes.

Trusting that this information will be of assistance and assuring you of our desire to cooperate in any way we can, we are,

Very truly yours,

CHAPMAN CHEMICAL COMPANY

/s/ Walter H. Gay

WHG/ch
cc: Mr. A. D. Chapman
A. D. Chapman & Co., Inc.
Chicago, Illinois

Brainerd, Minn., March 25, 1946

Mr. Dale Chapman
A. D. Chapman & Co. Inc.
333 North Michigan Ave.,
Chicago 1, Ill.

Dear Mr. Chapman:

Thanks for your letter of March 5th.

In compliance therewith I am sending you by exress today, to Memphis, Tennessee, a sample of the heavy fuel oil we are using for solution with creosote in our 50-50 creosote-petroleum mixture.

I shall be glad to visit the plants you refer to and as I expect to be in Portland some time next month I hope to have an opportunity to see Mr. Doan of the Forest Products Treating Company at that time.

Shall be glad to have your analysis and recommendations about use of such petroleum as the sample, in solution with pentachlorphenol.

Yours truly,

AJL/b
cc: Mr.E.M.Willis
Mr.Bernard Blum
Mr.L.Yager

A. J. Loom
Gen'l.Supt.Timber Preservation.

Your letter 3/22-'46

2659A

Saint Paul, March 22, 1946

MR. A. J. LOOM:

Your letter of the 20th about pentachlorphenol in solution with fuel oil:

It will be satisfactory to send them a sample of our fuel oil and obtain the analyses referred to.

cc-Mr. E. M. Willis
Mr. L. Yager

bb/s

St. Paul, Minnesota
March 22, 1946

Mr. A. J. Loom:

Referring to your letter of March 20 transmitting a letter of March 5 from Mr. Dale Chapman concerning the use of pentachlorphenol in solution with heavy fuel oil:

I believe you should carry this to a conclusion through sending a sample of our fuel oil for analysis as requested. You should likewise look into the feasibility of using just enough creosote, possibly of a lighter variety from Lehigh, as a vehicle for dissolving the phenol crystals for the purpose of making a convenient and reliable dispersion of the chemical through the fuel oil.

I believe it would be a good plan when we are on the coast in the near future for you to take the necessary time to make a trip to the Dalles, Oregon, plant to obtain such information as may be available there on the practical aspects of utilizing this chemical in the normal treating plant operation. We should have as complete information as may be currently available so as to take advantage of whatever economic possibilities may be disclosed.

LY:C

L. YAGER.

Copy Mr. E. M. Willis
Mr. Bernard Blum

Brainerd, Minn., March 20, 1946

Mr. Bernard Blum:

The attached is in reponse to my letter of February 25th to A. D. Chapman & Co. about possibilities for use of pentachlorphenol in solution with heavy fuel oil such as we are using in our present creosote-petroleum solution.

You will note that the method for dissolving the crystals in oil seems quite simple but there is no explanation of equipment that in my estimation will certainly be necessary in order to maintain uniform concentration of the chemical in the large volume of oil required in our normal treating plant operations.

A one pint sample of our fuel oil is all that is required for the analysis referred to. Their chemical laboratory is located at Memphis, Tennessee.

Kindly advise if you wish that I should send them a sample of our fuel oil as suggested or what else you think I should do about this matter.

AJL/b
cc: Mr. E. M. Willis
Mr. L. Yager