

Operation and Maintenance of Mechanical Equipment in Maintenance of Way Work

**Report of Committee
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Operation of mechanical equipment in maintenance of way-work is a very timely and important subject, since the use of mechanical equipment is resulting in important savings on many railroads. This subject covers a multitude of factors, all of which are important, and must be recognized in order that steps can be taken to realize maximum efficiency from maintenance machines. All good operational practices have a direct bearing on what is obtained from the machine, with 100 per cent availability the ultimate goal. It is a known fact the life of the machine depends primarily upon the care given it and the quality of its maintenance.

Safety in Operation

Safety is the first and most important consideration in the operation of maintenance-of-way work equipment. Many hardships and sufferings have been caused from accidents, which could have been avoided by the exercise of care. Carelessness in operation of any machine should not be tolerated. Instructions regarding safe operation should be placed on the machine in a place where they will be visible to the operator at all times. All safety devices and appliances should be kept on the machine at all times and not changed without authorization. Operation should not be allowed without them. Every precaution possible should be taken to provide safety in operation of a machine. Safety should be repeatedly called to the attention of the operator, keeping him constantly aware of it.

In all cases of doubt the safe course should be taken. Operators or others working near work equipment should not wear loose or ragged clothing which may catch in moving parts of the machine.

Before starting a machine notice should be given to nearby employees. Adjusting of moving parts should not be done while the machine is running. Brakes should be tested frequently and kept in good working order. When repairs are being made to the underside of a machine, it should be adequately blocked.

Organization to Maintain Operation of Equipment

An organization to maintain operation of mechanical equipment for maintenance work is a prime essential. It would be utterly useless to purchase a machine if there was no system or organization for planning its use and care and for programming the work to be done by the machine. Some railroads have established a separate department solely for the care and purchase of maintenance-of-way machines. This department is headed by a superintendent, under whom are supervisors, each assigned a district. Each district usually encompasses several divisions. Each division has its own repair shop where motor cars and machines are brought for major repairs or repairs that cannot be made in the field. Each shop has a lead repairman, with repairmen and helpers under his supervision for making repairs. The shop is usually furnished a truck for transporting the smaller equipment between the shop and the field. A truck also provides a fast means for repairmen to get to the point of equipment breakdown in the field. Further discussion as to repair of equipment will be taken up later in the report.

Training of Operators

One of the many problems facing maintenance-of-way officers today is to develop means of securing skilled and proficient operators for maintenance-of-way machines. They are confronted with this problem mainly

because there has been a lack of effort or foresight to train a man for the job until having to put him on it. Many operators gain their positions merely by seniority, with no real qualifications to fill the job. Many of these so-called operators could be qualified if a diligent effort had been made at the proper time to train them. To be a qualified operator is more than knowing how to operate the machine skillfully. An operator must know proper lubrication of the machine, capacity of the machine for safe operation and how to maintain and repair the machine with minor breakdowns. He must have resourcefulness, ingenuity, and good judgment, know the functioning of all the mechanisms so as not to operate the machine injuriously, and ability and initiative to perform work without continuous instructions, thereby obtaining greater efficiency from the machine.

In order to learn all of this, considerable time is required and much effort to teach must be made. When a machine is taken to the shop for repairs or overhauling a detailed "work to be done report" should be made and sent in with it, and if practical the operator should assist in the repair work. An increased knowledge of the mechanical workings of the machine and the condition of the machine will be realized. A clean, well-lubricated and properly adjusted machine indicates a safe and efficient operator. An operator should qualify only after taking and passing oral, written, and operating tests given by a competent man. It does not seem impractical to set up a school to train prospective operators who, after completing their training period, would be required to pass written, oral, and operating tests to become an operator. If the trainee failed the tests, he could be used in some other capacity in the same field. This would avoid loss of his training and also make him a valuable asset to machine operation.

Good operators for roadway machines are not always obtainable because of the demand in allied fields for skilled machine men and the high hourly rates as compared to railroad rates paid for this type of labor. The fact that most of this other work is seasonal and operators are subject to layoffs between jobs does not always seem to be taken into consideration by the man. It is good practice to discuss this with new men or men who are being trained for these jobs. If possible it is well to examine their background to ascertain if they are steady workers and apt to stay with the job. A setup that permits year around employment is ideal and efforts should be made to this end.

Assignment of Machines

Maximum return from a machine is greatly influenced by a well-planned work program. Scheduling the work reduces time spent traveling from job to job, thereby furnishing additional production hours. Assignment of machines is usually made by divisions, with the machines working on supervisors' districts within the division. Programming of work is then done by the maintenance officer in charge, who works in conjunction with the supervisor of maintenance-of-way equipment. The latter officer decides when the machine needs major repairs or overhauling. Assignment of smaller roadway machines to supervisors' districts has many advantages and in most cases can be economically justified. A front-end loader, for instance, with plow disk and harrow, can be utilized full time to good advantage increasing production well above a single visit. Ditching, keeping down right-of-way growth, fire protection and many other small jobs too numerous to mention can be handled with this machine. For earth-moving jobs, such as banking a fill or similar work, a dragline could be brought in. There are other machines which need to be assigned to a supervisor's district. Track supervisors are often faced with the problem of replacing a rail that needs to be sawed and holes drilled. Unless he has a saw and drill on his district he is forced to get one from some other district. Although he usually needs them on a short notice he may experience considerable trouble trying to get them. These machines are needed frequently at large yards or terminals and one of each should be assigned to such points.

Some of the smaller machines, such as mowers ballast-disking machines and bolt tighteners, which are operated by some railroads on a program basis, could be more efficiently operated if they had an assigned operator who would stay with the machine and operate it over the entire division. Ordinarily, when machines of this type are

used, they move from one section to another and often are not cared for properly because their care and operation is not understood by those assigned to run them. Immediate Supervision of machine operators by track and B&B supervisors usually proves beneficial. When work is being done under the supervisor's jurisdiction the operator should work directly under the supervisor. Regardless of the assignment of the machine, when it reaches the specified district the operator should come under the jurisdiction of the supervisor at that location.

Where possible, transfer of machines from one division to another should be eliminated. It soon becomes a habit. Machines assigned to a division should be kept there and relief or roving machines should be provided for use where an extra is needed. Very Seldom is a division burdened with too many machines and if a program has been set up for use of a machine arid the machine taken away, not only is the program upset but many of the necessary jobs have to be left undone.

Many times machines are used for work for which they are not intended. They can do the work temporarily but usually it puts an unusual strain on one or several parts of the machine, causing the machine to break down. This puts the machine out of operation until repairs are made. A good example of this is afforded by certain types of "on-track" cranes used for work-train engines. These machines are not large or heavy enough to handle very heavy loads on track arid the clutches are soon worn Out, They cannot do the job efficiently. Because of time cost of break downs - cost of labor and material for repairs - their use for this Purpose cannot be justified except in emergency.

Transferring Machines

Considerable time is lost from work when machines are transferred from one point to another. Specially equipped cars are usually assigned for loading and transporting heavy equipment. Assignment of loader cars with hinged ramps for "on-track" machines facilitates faster handling, so that the machines are ready for work soon after reaching their destination. Transferring machines with this type equipment over the railroad has many advantages over highway transport. Shipment can be made direct to the point where needed, whereas trucks may not be able to reach this point and the machine would have to be unloaded some distance from the work site, causing a delay in starting the work.

There has been considerable controversy among supervisors regarding the condition of machines when they are shipped from one location to another. To eliminate much of this controversy a transfer and receiving record should be made when the machine moves from one supervisor to another. This record would state the condition of the machine and would be filled out by the supervisor. Comparison of these cards would show condition of the machine as seen by shipper and receiver. Signature of this record will place responsibility for the condition of the machine before it leaves the supervisor's district. Special attention should be paid to movement of machines over week-ends. The work should be arranged to allow time at the end of the work week to load the machine and have it at its new destination ready to be unloaded at the beginning of the following work week. Another consideration in connection with transfer of machines is safety in securing it while in transit. Specially assigned cars can be equipped with fastenings so that ,his can be done in a short time.

Care and Lubrication

Most railroads do not provide shelter for a large portion of their machines. They are left to stand out in the weather and, if they are not used daily, they sometimes become inoperative by the time they are needed. Heavy Work equipment and rail-renewal machines are most frequently without shelter. They should, therefore, have a good coating of paint at all times. Heavy equipment usually is provided by the manufacturer with a cover for the motor and more intricate parts and, therefore, can withstand rather severe weather conditions. However,

rail-renewal machines are not provided with such a protective covering and in most cases home-made covers would be economically justified. A specially made canvas cover would prove amply sufficient. The excuse often used that it is impossible to keep such covers on a machine would be eliminated to a great extent by making the cover to fit only the specified machine, precluding its use for other purposes. This would lessen any incentive to take the cover from the machine.

Most railroads provide tool houses for their motor cars and other track-maintenance tools and they should, of course, be stored there whenever possible. Lubrication is without doubt the most vital factor in the operation of a machine. Whether the operator is proficient or not the machine will soon wear out, if it is not properly lubricated. When practicable, a lubrication chart and all the necessary lubrication equipment should be kept with the machine at all times. This would be especially helpful when an operator, who is not acquainted with the machine, is called upon to operate it, which is very often the case. These few simple practices would require very little effort and should prevent the machine from ever being operated without proper lubrication.

Repairs to Machines

Many practices are being followed for repairing machines. The most generally accepted practice in use today on the various railroads is major overhaul work in a central shop, with light running repairs being made in the field. This practice holds true for both light and heavy equipment. Every supervisor is interested in having the machine at its peak performance while it is on his district, especially at a time when it is most needed. It is, therefore, necessary to set up a program for repairing a machine, giving it major repairs or overhauling during its period of slack work for that particular machine, thus eliminating frequent breakdowns while in use. Allowance, therefore, needs to be made for repair of working machines in shops during off-seasons. No amount of maintenance later can overcome results of poor performance when the machine is badly needed.

Periodical inspection of machines by a mechanic can prove advantageous. Repairing or replacing a small worn-out part, which could lead to a serious breakdown, possibly having to send the machine to a central shop, can prevent long delays during seasons of heavy work. In line with this, parts should be made available for the immediate repair of machines in the field. A system of parts distribution is very important, as every maintenance man will fully acknowledge. A central storehouse with a full stock of parts with smaller stocks at outlying points would seem to be most practical. It is unwise, as well as economically prohibitive, to have an over-supply of parts in stock, but trained and experienced stockmen are aware of the parts most frequently needed and can adjust the stock to fit the needs. A practical policy for securing repair parts should be established. At any major repair point or supervisor's headquarters repair parts for an emergency breakdown or those not in stock can be purchased from a local parts dealer. Usually a large number of parts are obtained from such places and can generally be purchased at a discount. Purchasing points of this kind should be given encouragement and should be so located to be of great service and accessibility.

Once the local dealer finds you are one of his regular customers he will give better accommodations and be of more service to you.

It is very essential to follow a well-outlined distribution plan so the necessary parts are available when needed. Not only do the parts need to be available for repairs, but a mechanic or repairman needs to be at hand as well. Some of the railroads provide a mechanic for each supervisor's district. This provides almost immediate service, whereas long delays are often encountered while having to wait for a mechanic to come from a central shop. Idle machines are costly to the railroad, and in most cases a mechanic on each supervisor's district can be justified. During the off-seasons when these field mechanics are not needed on the district, they could be sent to the central shop to assist with repairs and overhauls.

Some railroads are confronted today with the problem of their equipment expanding faster than the maintenance facilities to take care of these new machines. Supervision of such maintenance has also lagged on most roads. More mechanics will be needed and should be trained in the new and advanced techniques. It may sometimes be desirable to send the mechanics to the manufacturer for a short period of training. In this connection, care should be exercised in the selection of new machines to prevent obsolescence before they become worn out. Small demand will not warrant manufacturers to produce parts for obsolete machines.

Many times machines are repaired or overhauled without a record being made of what has been done to the machine. This, too, frequently proves costly to the railroad, inasmuch as when a machine needs repair work done on it, a mechanic will inspect the machine and estimate the parts which will be needed. This mechanic may not know or may have forgotten what has previously been done to the machine and will order replacements for parts which are nearly new or have not nearly completed their service life. The ordering of these parts is done in advance to prevent any delay when the machine is brought to the shop. A file system should be set up with a card for each machine. When repairs are made or new parts put on the machine, a record is made on the card. Then later when repairs are needed and inspection made of the machine, this card can be taken along and reference made to previous repairs and parts. This file system should be kept by the local shop foreman, as well as the supervisor of maintenance-of-way equipment. To further augment this file system, the operator should make a daily report of his machine and send it to the local shop foreman and the supervisor of maintenance-of-way equipment. Minor repairs and work to the machine by this process would not be overlooked. The daily report would be extremely helpful with rail-renewal machines. At the end of each day's work, it would be given to the mechanic on the job, who, after finding the faults of the machine, could make the repairs and have the machine in peak condition for the following day's work.

A SAFE PLACE TO WORK IS ALWAYS AN ATTRACTIVE PLACE TO WORK. This truism can be used as a selling point to obtain good men.

DISCUSSION

Vice-President Campbell: Mr. Kopp, that certainly is a most excellent report and one, I am sure, that will inspire a great deal of discussion. The discussion is now open on this paper. I see a lot of experts around, and I am sure there is somebody here who has some ideas on this subject. Cliff, have you anything to say about this "

C. E. Morgan (C.M.St.P. & P.): Well, I never hesitate to say something when I have heard as many good things mentioned as I have here. If we had all those facilities and the men to carry out just what you men have heard, we would have less problems coming back to the office of the superintendent of work equipment. Because with those steps taken at the proper time, the men trained properly and the parts they need to keep these machines going, we would have a pretty smooth operating organization. All I can say is, I wish we could have every one of our chief engineers read that article twice and then we would be very glad to talk about some of the details contained therein.

Vice-President Campbell: Do you want to make that in the form of a resolution? (Laughter)

I was interested in what Mr. Kopp said about permanently assigning machines to divisions and leaving them on that division. Is there anyone here who is following that practice I think everybody agrees it is an excellent idea. I was just wondering if anybody had been able to do it, Mr. Tracy of the Burlington, have you any comments?

Union Rules Hinder Training

S. E. Tracy: I feel very much the same as Mr. Morgan. If you could have that situation as outlined in the report it would be an ideal situation, but the thing I would like to know is, how are you going to get it? I think it is a very excellent report and the ideas in there give us food for thought, or something to work towards, but as, for example, the training program of operators, we are handicapped by certain regulations of organization in many ways that prohibit the training of operators, such as seniority, and so forth. Under the present rules and under present labor conditions it is pretty difficult to get that change in the other direction so that we have something to say. As a matter of fact, we have very little to say about who is operating the machine when we go strictly by seniority.

I haven't any other comments. I agree with everything that the man said but I still want to find out how to accomplish it.

Vice-President Campbell: Well, of course, there are difficulties. Everybody knows that. I think there are ways to overcome them. In regard to seniority, I think in some cases you can get your employees' organizations to cooperate along that line. I know some time ago we put in some blueprint reading classes for our B.& B. men on their own time. We furnished the instructor. And those were exceptionally well attended. Nobody waived the seniority rule, but when they were promoted they were better qualified carpenters than they were before. I have often wondered if something along that line might not be done with operators . Do you know of my such training classes, Mr. Kopp, as you spoke about.

Pick a Good Man at Start

Chairman Kopp: I don't know of any such training classes. But partially in answer to the man's question about how to secure qualified operators: the replies that I got from members of the committee relative to that subject were very much varied, but the consensus of opinion was that the average person on the lower level, where you start picking up your operators from your organization, is the person who is going to be responsible for the kind of operators that you have when you have him trained. It is the initial selection that counts, and you do have a slight choice there to start with. On our road, for instance, if we are planning on making an operator, we usually start a man as an oiler on one of our machines and have the operator of that machine try to teach that man to be a good operator.

Now you have two alternatives. The first is to pick the right man, the man whom you think will learn that job, and then the other alternative is to put him with the man whom you know will teach him to be an operator. So that low-level picking of these men has a direct bearing on your overall condition of the operators after you have completed it, but it has to start mighty early in the program.

Mr. Tracy: I agree with what you say but there are catches in that, also. I don't see how we are going to pick out men whom we can expect to train. For certain types of machines, and I am speaking of drag lines, where you have need for a helper-oiler all right, he will learn to operate that one machine. Now if you can transfer him from one machine to another, that is all right. Take the multiple tamper and the power jack machines. You work them how many months Maybe on your railroad you might work them 12 months out of a year. On our railroad, we don't. Maybe we can work them six months or eight months What are we going to do between the time we lay them off and hire them back again in the spring? They just aren't there when you want them again. You can't hire a man, in my opinion, in April and lay him off in September and expect him to be back next April looking for a job-not a good man

G. M. O'Rourke (I.C.): Mr. Chairman, Mr. Kopp is one of our younger division engineers. We have recently set up several like Mr. Kopp. After listening to this excellent paper that Mr. Kopp has presented, the manner in which the younger division engineers are going to handle this machinery on the Illinois Central, I know that I am going to have an easy time from now on in spite of what these gentlemen say, Mr. Kopp and our other young division engineers are going to do it just like he says, and it is going to be awfully nice for me - we hope.

Mentions Loading Accident

He mentioned safety and put a lot of emphasis on it and rightfully so. I thought that it might be of interest to the railroad track maintenance fraternity who have to do with the use of machinery to know about a very unfortunate occurrence on our railroad recently. An experienced front-end loader operator, one of our best men, finished a job down here in southern Illinois and was preparing to move from that job to another. He had some timbers that were set against ties with the lower end on the ground and the upper end extended beyond the edge of the end of the flat car. About eight inches beyond the ends of those timbers he had some blocks for his train to roll down on the floor of the car.

Now had that car been there alone, the only car on the track, unquestionably he would have chocked it. But it was one of several cars, a camp outfit. It was the end car of some twelve or fourteen cars. The section foreman had left two men there with this experienced operator to assist him in loading his car. We don't know what passed through his mind because he didn't discuss it with these two sectionmen. They, of course, had no experience in the loading of that kind of equipment. But it is supposed because this flat car was coupled to other cars he thought there was no possibility or likelihood of it moving and therefore he didn't chock it. Unfortunately, however, there was enough slack in the couplers of that string of cars to permit it to move just as he reached the top to go over onto the floor of the car. The other cars moved with it, permitting the ends of those stringers to fall down. Only a small part of the front end of the cab had gotten over the end with enough forward thrust to move the cars, and it toppled over sidewise and crushed the man to death.

I mention that here, not to advertise an unfortunate thing that occurred on our railroad, but with the hope that when you go home, if you see men loading equipment in that manner, that you will caution them to block the car even though it is coupled to other cars. It was a terrible thing to have happened. This man left several children. And it is something that I think should be broadly advertised with the hope that it will prevent a recurrence.

Vice-President Campbell: Thank you, Mr. O'Rourke. Is Mr. Villella, safety inspector of the Pennsylvania here I believe you have had some experiences on the comparative safety of motor vehicles and track cars. Have You something you can tell us about that?

Hazards Covered by Safety Rules

L. A. Villella (P.R.R.): I think the preceding paper pretty much covers the situation except getting into the minute details of handling the various equipment with which the operator is going to operate I might preface my remarks by saying that we feel quite proud on the Pennsylvania in covering the recognized hazards in our safety rules. And when I say recognized hazards, I mean hazards that we have recognized from experience or from sad occurrences. And they have been covered. Either Mr. Whisler has very eloquently covered them or we have them in the safety rules. In any event, the Safety department and M.&W. department on the Pennsylvania work very closely on the hazards, not only machines, but all M.W. safety, and have the recognized hazards adequately covered.

The occurrence on the ramp that the gentleman mentioned brings back to us memories of some very sad occurrences, and makes me wonder if that particular railroad has taken the matter up with the transportation people of seeing that train service men properly secure cars that are left on sidings and yards and other places. In this case the accident involved the M.& W. department. The cars could have even gotten out on the main track and been responsible for a serious train accident. It is one of those things that in one accident, if you analyze it, it brings out an awful lot of deficiencies - not only the people who are unfortunate enough to be involved in it, but other departments of the railroad. It very often happens that one department will suffer from the negligence of the employees of another department. It calls for a very thorough investigation and very fair and impartial attitude on the part of the staff officers and the general supervising employees on all parts of the railroad.

Getting back to our own M.&W. machinery, I think on the Pennsylvania there have been some accidents, undue wear and breakage, delays, and that sort of thing because of inexperienced operators. But I think the policy of putting the new men being trained with the older men and working with them has proved very satisfactory. I think the recent policy on the Pennsylvania of training the men who are going to operate the machines to understand their general operation is proving very satisfactory. It is my experience when machines are cleaner they operate much better and there is less delay, less friction, and all that sort of thing.

We are happy to say, and I don't say this boastfully, that our injuries from operating machinery fall into almost zero. But it is needless to say that not only the safety department on the division, but also Mr. Griswold's department, particularly through Mr. Whisler, have been really pushing the safety job on the Pennsylvania Railroad so that safety is first and always in the operation of machines.

Vice-President Campbell: Just one question. I know the B.&B. department is transporting a lot of laborers in trucks who had formerly been transported in motor cars. Are the trucks a safer operation for the transportation of laborers?

Injuries Off R/W Not Reported

Mr. Villella: I cannot answer you explicitly. I think when I say this that other railroads will appreciate what I am trying to say. We get reports of all injuries that occur in connection with the operation of highway trucks. And I am just afraid that the emphasis on the proper operation of trucks has not been as great up until this point as it has been with the operation of motor cars. On the Pennsylvania, not only our department, but Mr. Whisler is instilling all of us with the idea that we must operate the trucks in accordance with the highway laws, and his stipulations, as to the condition of the truck, how it shall be inspected and how it shall be operated, are very clear. I think we are going to have a safer operation for trucks.

Going a little into that, I think all of you fellows appreciate the fact that it hasn't been necessary to report the injuries that occur in the operation of trucks if they occur off the railroad property. That is sort of a technicality on the part of the I.C.C. instructions. But sooner or later, and I say this for what good it may be for the other railroads, sooner or later I am just afraid that the I.C.C. is going to say, "You are only operating that truck because you don't want to operate with a motor car and the truck is definitely being operated for railroad purposes, to transport men from A to B, or transport material from A to B. You are doing that in lieu of motor car operation. It is strictly a railroad operation and it will require that the accidents be reported." On that theory, we on the Pennsylvania are getting into the causes of those kind of accidents, trying to run them down with the idea of applying the same remedial measures to the things that cause those accidents as the things that cause the railroad accidents and for which we took great pride in reducing the number of injuries and fatalities and motor car accidents on the Pennsylvania Railroad to almost nothing.

President Whisler: Thank you. Our time is moving along. I know it is one of the most important subjects we have. I think we can steal another few minutes. Mr. Mayer. have you got this thing well handled on the North Western.

Wants Machine for Each Roadmaster

H. Mayer (C.& NW.): I don't think anybody has it well in hand, Mr. Chairman. It is one of the hardest things that we have to contend with. The question was brought up about furnishing a machine for every division. That is a goal I think we are all working for. That is another thing that we should tell our managers so that we can get the money to buy these machines. We do know that transporting machines from one division to another causes a lot of breakage. You send a machine to a new man and it is broken in transit. That has been a big cause of trouble on our railroad. And I would like to get every roadmaster his own drill, saw, grinder, power wrench, mower tractor - and when we get that we will be in a whole lot better shape.

With regard to the training of employees, you spoke of having it man as an oiler or helper on a machine. In this day and age of railroad economics they can't see two men on one machine when one man is supposed to run it. Everybody is looking for the economical operation of the railroad. They want to get so many feet per man-hour of track surfaced, so many feet per man-hour of rail laid. You throw extra operators in there, and helpers, and it is going to dwindle down so that you are going to take some of the gravy away from the machines that you are buying.

Vice-President Campbell: Thank You, Mr. Mayer. Are there any further questions or comments on this report,

Small Machine Operators Are Problem

Member: I would like to say from the supervisor's viewpoint, we don't have too much trouble with the operators who work the year 'round with our large machines, such as cranes. I think it is with the operators of the small machines that we have the trouble with and I think finding operators for rail laying equipment, particularly, gets in the hair of most Supervisors. I think a little more differential in the rates of pay that we pay these men might help. Generally, for rail-laying gangs, we hire a bunch of extra men. Sometimes we put a bunch of sectionmen with them. But, we don't pay them enough more to operate these machines. The difference is so little that, if you force a man to operate one, he is doing so against his will and won't make a good operator. I think considerable difficulty is caused in this manner.

This training is fine, but who can do it A gentleman sitting here with me commented a few minutes ago, "if our operators could all read instructions furnished by the manufacturers, we would have better operators." I heartily agree with that statement.

More Past Presidents Introduced

Vice-President Campbell: Gentlemen, yesterday I think most of you were here at the time that recognition was given to the Past Presidents. Unfortunately all could not be present. I believe Mr. Armstrong Chinn is here now and I think Mr. Kelly is here. If those gentlemen are here, will they come to the platform, please.

President Whisler: There is another Past President here - Mr. Denney. Are there any other Past Presidents in the room whom we haven't been able to locate., Mr. Denney talked with me this morning. I understood lie was retired. He approached me here before we started the meeting. And I understood Mr. Kelly was in the room-also retired. Mr. John B. Kelly of the Soo Line. Mr. Armstrong Chinn, I saw and talked with Tuesday evening.

He advised me, as I believe I told you yesterday, that lie would not be able to be here yesterday, but that lie would be here today.

We would be glad to hear from Mr. Armstrong Chinn at this time if he will give us a few words.

Armstrong Chinn (G.M.& O.): Mr. President and fellow members: I did not expect to be called up here and I haven't anything particularly to say. It is very true that I am greatly interested in this Association and always have been. I think the character of work that the men in this association are in charge of is a most interesting phase of railroading. The picture is always changing. Fundamentally, I guess the problem is always the same, to provide good, safe track to handle the business that is offered to your companies and at a minimum cost, economically, I might say. But it has always seemed to me that we never reach a stage where we have all the money we want, all the labor we want, or all the materials we want. There is usually a shortage in one or the other of them. And it usually takes it good deal of ingenuity to meet the current situation with the shortages that are facing us.

More Economical Than Labor

Now I think at the present time, because of the increase in the wage cost of manual help, one of the biggest problems is that of mechanical equipment to do the work that we formerly did by hand. I can remember when I started railroading that the cost of machinery was considered greater than the cost of labor. As a result, we did not have very many mechanical aids. Now, however, with the increase in the hourly cost and the monthly cost of labor, machinery has reached the point where it is more economical than labor, and our supply friends, I think, are constantly endeavoring to furnish the kind and type of equipment that we need. And frequently mechanical equipment will not only do the work cheaper but it will do the work better. I told our people on our little terminal railroad down at St. Louis that any time they could find a piece of mechanical equipment that would do the work as well or better than hand labor, why they wouldn't have any trouble getting me to approve a requisition. That is the way I feel about it.

I think you gentlemen have a continuing problem in front of you and I think you are going to meet it adequately in the future as you have in the past. Thank you very much. (Applause)

President Whisler: Thank you, Mr. Chinn, very much. Mr. Kelly, do you have any remarks,

J. B. Kelly (Soo): I never have passed up an opportunity to talk. Well, gentlemen, I have just gotten a little drift of the trend of things around here, having just arrived a short time ago brand new at this convention. I understand Mr. Whisler had some question for discussion, about research and taking maintenance man in that important development is fine I have, of course, for years followed this maintenance game up as general roadmaster on the Soo Line Railroad, and as a roadmaster before that for 43 years.

I just happened to think that special arrangements should be made to encourage trackmen to be out in front with the development of shortcuts. They have to come, regardless. In some cases, I know many of the employees will say, "Here, You are putting us Out of work with these new wrinkles." It can't be helped. I happen to remember the days of weed burning in the northwest when the Milwaukee, the Soo Line and the rest went into the development of weed burners. 'Well, the Soo line got a weed burner and then the Milwaukee came up with theirs. They were up against the fact you could not run a train in the western country beyond the middle of June without taking care of the weeds. It was necessary to burn them down to the level of the rail. If the weeds blew over the rails you were tied up all over the country.

The weed burner was new then. And, of course, there was competition on our own road from even down to a motor car onto which the roadmaster put several side blades under the car and ran the car up to speeds of 35 or 40 miles an hour to clip the weeds. That fellow didn't need a weed burner.

Another thing that came about was having the boys of the engineering department study our practices and soon everybody on the railroad was in research. We started putting in hard ties on curves back in the '30's, and management saw their value and this further enlarged that practice. We have been doing this ever since with good results.

Then string lining was tried out but was difficult to bring into extensive practice. I can remember when string lining was considered too difficult and anybody who talked about doing anything with string lining was just crazy. Now it came to pass that our Engineering department didn't have enough men to do all their work. And so these boys developed string lining to such a degree that it has been the talk of the country for the last 10 years and has been one of our very best developments,

That is the thing that has brought us to the 40-hr. week. Gentlemen, I am glad to see you again.

Vice-President Campbell: Gentlemen, our next item on the program will be a picture. While we are getting ready for that, Mr. E. E. Gordon of the Bangor & Aroostook has a question. Will you state your question, Mr. Gordon,

Identification Tags for Trackmen?

E. E. Gordon (Bang. & Aroos.): Mr. Chairman, I want to know if any other railroads in the country have identification tags for their trackmen so that all will know that he is a trackman on the A.B.C. Railroad

Member: What is the purpose of it?

Mr. Gordon: About three weeks ago we had a near accident while a man was driving over a car crossing with a trailer. The trailer caught in the planking so the driver stopped a train. The train crew got off and saw they could get past it at slow speed. So they continued to the next terminal and there reported it was being taken care of by a trackman. Of course, the man who stopped them was no trackman at all. He was just a farmer and the crossing was not being fixed.

Vice-President Campbell: Thank you for the suggestion, Mr. Gordon. Now, gentlemen, we have diverged a little from the last report. I think it has been a very pleasant diversion, but our time is getting on and I am sure that all of you will agree with me that the association owes Mr. Kopp and his committee a very sincere vote of thanks for the excellent report which he has presented. Thank you very much, Mr. Kopp. And the committee is dismissed with the thanks of the association. (Applause)

Film On Rail-Laying Practices

We are now to be privileged to see a picture entitled "High Iron Highway" depicting rail-laying practices on the C.&O. Are you gentlemen ready to present that picture, We are indebted to the C.&O. Railroad and to Mr. Kellogg, one of our directors, for this picture. I also wish to thank Mr. Hockinson of the Illinois Central for furnishing the projector and operating it. Thank you very, very much, Mr. Hockinson.

. . . The picture was presented. . .

Gentlemen, we are preparing for the next report. I wish to call your attention to the joint session this afternoon. I don't think anyone can afford to miss that meeting. I hope you will come, and urge everyone you know who is here, to come also. Mr. Wayne Johnston, president of the Illinois Central, will be the principal speaker. Those of us around Chicago who have been privileged to hear Mr. Johnston speak on other occasions can all assure you that if you miss this session you are certainly missing something well worth while. I hope you will all be here this afternoon. I would like to see a packed hall for Mr. Johnston's address.

Will the committee on "Installation and Maintenance Practices to Extend the Life of Cross and Switch Ties," of which Mr. E. L. Collette is chairman, please come to the platform. I don't know of anything that is more important to railroad maintenance men than the extension of the life and preservation of crossties. I know that we will now hear it most excellent report from Mr. Collette and his committee.

Chairman Collette: Mr. Chairman, I am deeply appreciative of the aid that the members of the committee have given me in the preparation of this report. Some of the cooperation has been controversial in nature, but always, I assure you, to the end that the best could be reached for the subject.

. . . Mr. Collette read his report. . .