

Paper and Pulp Section

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MONDAY AFTERNOON SESSION

October 7, 1940

The opening session of the Paper and Pulp Section convened with General Chairman D. B. Chant, Ontario Pulp & Paper Makers' Safety Association, Toronto, Ontario, Canada, presiding.

CHAIRMAN CHANT: We are very glad to see so many here at this first session. We have an old custom which we have followed for a number of years: that is, for each person attending this first session of our Congress to rise in turn and introduce himself, naming his company affiliation. Let us again follow the custom this year.

(The members arose individually and introduced themselves.)

CHAIRMAN CHANT: As your General Chairman, I look back over the past year with mingled feelings of satisfaction and regret; satisfaction because of progress made, and regret over lost opportunities and failure to accomplish some of the things we had hoped we might achieve.

The year has not been a normal one, either in our industry or the economic life of North America. There is no need for me

to detail to you the disturbing elements which have made themselves felt with growing force as the flames of war rose higher and higher with each month since the Atlantic City Congress. No doubt the months ahead will also bring many surprises and many new and difficult problems to each of us.

To me, however, there is something particularly encouraging in the way the work of the National Safety Council has been steadily pushed forward during these evil days. With so much of the world's area seemingly abandoned to the forces of destruction and violence, the knowledge that here in America thousands of men and women are voluntarily giving unselfishly of their time and efforts for the betterment of human welfare, safety and health, must constitute a sure guarantee that those great democratic ideals of liberty and justice, to which your nation and mine are dedicated, shall forever prevail, and, come what may, that "government of the people, by the people, and for the people shall not perish from the earth."

(The General Chairman then briefly reviewed the activities of the standing committees of the Section during the year, and gave to each Committee Chairman some words of praise for his efforts and encouragement for the future. In closing, he said further):

As to what the immediate future holds for us, I would not venture to prophesy. I do feel most strongly, however, that whatever problems may confront us as a Section, as an industry or in the national or international sense, we need have no fear of the eventual outcome of the struggle between free democracy and the evil forces now attempting to destroy it, as long as our lib-

erties are defended by men and women in whose hearts the pure flame of self-sacrifice and service to humanity still dwells. The same spirit of mutual assistance, which has in the past enabled us to meet the problems of our Section with marked success, will make it possible for us to deal effectively with the larger and more vital questions of national defense and ensure to us that peace and security which we all so earnestly desire.

The first item on our program consists of two papers on the "Safe Handling of Materials." I will first introduce to you Mr. J. A. Long, of the Bay West Paper Company, Green Bay, Wis.

Safe Handling of Unit Materials

By J. A. LONG

Superintendent, Bay West Paper Company, Green Bay, Wis.

No doubt, the reason I was selected to discuss this subject is because of the safety record established at Bay West Paper Company. A record of 39 months without a lost time accident has been made by our employees. We are very proud of them for it.

It is necessary that a brief comparison of a small converting plant like ours be made with the larger mill which, I assume, most of you represent.

While we are owned by a large mill, the Mosinee Paper Mills Company, our operations are entirely separate and different. We are converters, and deal only in finished paper. Our paper is trucked from Mosinee (100 miles) to our Green Bay plant in rolls—it is unloaded and stored on our floor for a few days before it is run through the converting machines into Mosinee towels, after which it is either shipped or stored as a finished product.

The process sounds very simple and yet we have had our struggle trying to cope with accidents, like any other mill. The small mill or converting plant is not adequately equipped as a rule to handle materials as compared to the large mills. In my opinion, there are three basic reasons for this:

1. Large mills construct their buildings to best meet their production requirements.

The safe handling of materials is taken into consideration with these production requirements. Many converters like the Bay West Paper Company, operate in rented buildings and there isn't always sufficient space for the safe handling of each material.

2. Large mills think very little of purchasing proper and expensive equipment with which to handle their materials. Small plants can seldom afford to buy expensive material handling equipment to install in a rented building which usually is not laid out properly for such an installation.

3. Another comparison is that of labor experience—the large mills usually have certain men trained to handle each material. The stockroom men in the converter's plant must know the safe method of handling all materials involved. They must know how to handle safely rolls of paper in various sizes and weights, how to pile finished cases in freight cars and warehouses, how to store bundles of cartons knocked down, how to handle bales of broke (waste), how to move heavy machinery—yes, in some instances they are expected to be machine operators as well.

Fortunately, our mill is constructed fairly well for our operations and during the past few years we have done a lot to make work easier and safer for our employees—and we have found the experience profitable as well.

However, there is right and wrong equipment as well as right and wrong methods in handling unit materials of any kind and that is my point—the right equipment for the job. For example, about seven years ago our men used planks to triple deck rolls 40 inches long, 33 inches in diameter, and weighing from 500 to 600 pounds. It took four men to triple deck each of these rolls and the method was slow and also unsafe. Many strains developed from this daily practice.

To remedy this situation, we purchased an electric lifter at a cost of only \$520 which does the job with the help of two men in half the time.

Let me call your attention again to the fact that our mill is small. We have to be sure that equipment of this kind isn't too large or bulky for our needs, which would discourage its use by our employees. The platform, with turned down edges, lowers to within one inch of the floor so that stock can be easily rolled onto it in front or from either side directly from the floor surface.

A few years ago one of our men experienced a hernia when he tried to tip a roll onto a two wheel truck. This roll, because of its 33-inch diameter and 40-inch height and weight of 600 pounds, is hard to tip by a rather small man. This experience taught us to use the lifter for loading these rolls onto two wheel trucks. Now the only time this particular material has to be tipped is when it is unloaded from our Mosinee trucks.

After the roll has been placed on the platform and blocked, it is easily elevated to the proper height and rolled onto the pile. It is also an easy process to remove a roll from the pile with the aid of the lifter, although the process is much slower than placing a roll on the pile. We do not use the lifter for removing these rolls from the stock pile, because of insufficient floor space in which to operate. Therefore, it is necessary that we lower them by removing the blocking. This was a dangerous process and it called for real employee and employer cooperation to remove the hazard.

First let us explain what happens when these rolls are lowered without proper blocking.

If the second roll from the front of the pile has not been properly blocked, and the roll hauler knocks out the block from the

front roll, immediately the rolls in the second and third tiers force the bottom rolls out and all the six rolls are soon out of the roll hauler's control. He is forced to leap for a safe spot allowing the rolls to go at will.

We experienced difficulty with six rolls coming down unexpectedly from time to time for quite a few years. Even though it was an infraction of a safety rule not to check the blocking on the second roll, the unsafe practice continued. There were many strained knees, injured legs and considerable loss in damaged paper, before the "positive visible block" was developed.

Rolls that are triple decked (nested or cradled) can very easily be removed safely from the pile, one at a time. However, this can only be done safely when the second roll from the front of the pile is securely blocked. When this is done the roll hauler has complete control of the three rolls being removed.

Let us follow the procedure of removing a roll from the pile. First the second roll from the front on the floor is blocked, then the roll hauler stands directly in front of the first roll and keeps it from rolling with one hand, while he knocks the block out with an iron bar used in the other hand. He then allows the first roll to roll out slowly in a clockwise direction. This movement causes the second tier roll to turn in a counter clockwise direction until it comes to rest on the floor immediately back of the first roll. The roll in the third tier follows down and stops in the second tier. From there it is lowered to the floor by the same method described above.

We use a block which is nothing more than a regular wedge-shaped hard wood block about $7\frac{1}{2}$ inches long with a $\frac{3}{4}$ -inch iron rod running through its length with a washer and cotter pin to keep the block in place. The other end of the rod is bent at right angle and is welded to an iron $\frac{3}{4}$ -inch pipe 14 inches long. Into the end of this pipe, a $\frac{1}{2}$ -inch iron rod or pipe is inserted, on the end of which is attached a six-inch spring. The other end of the spring is pinned firmly to the lower part of the pipe which pulls the rod down into the pipe until the handle brings it to a stop. In order to keep the block in a fixed position while it is being handled, the rod going into the pipe has a $\frac{1}{4}$ -inch slot and a pin is then installed through the pipe and the rod.

The handle of the blocking device is a 3/4-inch iron rod welded horizontally across the top end of the spring rod. The outside end is bent downward to form a hand grip while the opposite end is also bent slightly downward with a sharpened point. This is the inside end of the handle, and it is inserted into the core after the block has been placed under the roll and the tension placed on the spring. If the roll should move slightly the block will be pulled all the more firmly into place. However, the greatest feature of this blocking device is the fact that it is always visible. A safety rule prohibits the lowering of these rolls without first having this block in place.

Beginning a few years ago, our operations demanded the handling of much larger rolls than those already described. These rolls, 66 inches long, 33 inches in diameter, and weighing approximately 1,000 pounds, soon had us searching for a truck with which we could move them about our mill easily and safely.

Several truck manufacturers sent us trucks on trial. Most of them were too large and bulky for our little plant. The

CHAIRMAN CHANT: In the absence of Mr. J. F. Robertson, of the Crown Willamette Paper Company, Camas, Washington, I am going to ask Mr. John Roche, of

trial operation of one of them nearly caused a serious accident.

Finally, we decided to visit some of our neighboring mills to see if we could find the answer to our problem. We were happy to find a truck which is equipped with a special tipping rod with a hand grip on one end and a curved metal plate to fit the contour of the roll on the other end. The operator first works the shoe of the truck under the roll, and then tips the roll onto the truck with the aid of the pull-rod which is extended over the far side of the roll, thus giving more leverage to the pull than when pulled from the core or center of the roll.

The turned down handles make it easier for the operator to handle it with his hands in a natural position away from the roll. These handles also serve as an extension so that the operator has better visibility over the roll when moving forward. The third or rear ballbearing wheel, because of its central location, allows the operator a natural walk which is essential in the safe operation of this type of truck. All the wheels are large enough to assure easy handling.

the National Safety Council Staff to read the paper prepared by Mr. Robertson. Mr. Roche complied.

Safe Handling of Bulk Materials

By J. F. ROBERTSON

Personnel Director, Crown Willamette Paper Co., Camas, Wash.

The responsibility of the management of a mill rests heavily on a few individuals. The success of a safety program depends on the interest taken by employees in the duties assigned to them by the foremen and sub-foremen.

Let us call it planning your time and timing your plans. In other words, you run the job, don't let the job run you.

Every supervisor, foreman or sub-foreman must have a plan for his own day's activities and must have a plan for the work of each of his men. If we allow the emergency of the hour to determine our course of action, we cannot hope to accomplish definite results on schedule. Very

often a foreman has occasion to send a man to the storeroom for supplies such as bolts, rope, wire or belting. Be sure the measurements taken or the quantity required is correct and avoid waste. However, the big item of waste in almost any organization is time lost by lack of supervisory planning.

The safe handling of bulk materials undoubtedly presents many problems which are the direct responsibility of the foremen in the proper planning of work. In a number of plants a lot of our raw materials are received in such a manner as to require considerable manual labor. It becomes necessary to carry out a well thought-out plan

of job training, for unless this is done, it is practically impossible to avoid accidents by the installation of guards.

Let us concentrate for a short time on the handling and delivering of materials such as hog fuel, lime rock, saltcake and sulphur. I believe that the handling of hog fuel from the time it is first received at the mill up to the time it is used can present more problems than any of the others mentioned. In a great many instances this fuel is received by barge and cannot always be obtained in a regular supply so that it may be used without a considerable amount being stored either on outside storage piles or in fuel houses. It is quite generally recognized that work on piles or in a storage house is hazardous.

Perhaps we should start with the unloading from the barge. This requires certain work to be done on or around barges. It should be the practice never to allow the operators to perform these duties alone; in all cases when work is being done on a barge, it should be a rule that the individual be required to wear at all times, a life preserver of a type that is in no way a hindrance or cumbersome.

From the barge the fuel is generally unloaded to a bunker from which it is carried to the storage pile, storage house or power plant by belt conveyors. Fuel from the bunkers is carried on an overhead belt conveyor and is removed from this conveyor with shear boards, after which it must be distributed over the pile. There are various methods of doing this but I believe the more general practice is with the use of a caterpillar. Few hazards exist here if the operator is experienced with his equipment and uses it as it is intended to be used.

A caterpillar for a hog fuel pile operating at times under the conveyor should be equipped with a substantial cab to protect him from anything that might fall from the conveyor above. The conveyor should also be provided with safety boards along each side and only the short section removed where the fuel is being raked from the conveyor to the pile. If this is done, there is slight possibility of accidents occurring at this place. It has been found advisable, though, to see that at all times when such an operation is carried on at night the pile should be encircled by lights strung on poles

that can readily be stuck in the pile around the edge and changed at any time by the man on the job.

Now let us assume that the fuel is to be delivered directly to the power plant after some has been delivered to the pile. All safety boards alongside the conveyor over the pile should be in place to prevent anything from falling from the belt. Fuel to be stored in the house is handled in a manner very similar to the pile.

However, sometimes it becomes necessary to supply your power plant with fuel from the storage house due to interruptions in fuel delivery from the source of supply. The storage house operator may be inclined to enter the house to dig a little fuel without taking the necessary precautions of going overhead to put his safety boards along the side of the conveyor. As a means of overcoming this, we have found it advisable to equip our storage house with an entrance gate, making it necessary for the operator to raise this gate before he enters the house. Connected with this are hinged boards running parallel to the overhead conveyor that are automatically dropped into place at all times when the house is entered. This, along with the insistence that at no time is an operator allowed to work in the storage house alone, has practically eliminated any possible chance of an accident occurring in this location.

Needless to say it is important that the driving mechanism of the conveyor be properly guarded. If necessary to cross a conveyor proper, special places and means should be provided. One of the outstanding dangers is that men are tempted to clean off material that sticks to drums or pulleys while the conveyor is in motion. Fixed scrapers or brushes should be provided so it will not be necessary to perform this operation by hand. Guards placed directly in front of the belt nips are advisable and the rollers under the belt should never be placed so near a bracket holding shear boards that it is possible for any object to pass through.

Switches are another important part of a conveyor system. The fewer starting switches the better, but an emergency stop switch should always be provided that may be readily reached. One of the best methods is a cable along the entire length of the conveyor that may even be reached by an employee should he in some manner be caught in it.

Only workers who are thoroughly acquainted with the dangers involved should be allowed to work on conveyors. New employees should be thoroughly instructed by the foremen as to the correct methods of operation. In spite of all safeguards which may be installed, accidents will occur un-

less workmen are constantly instructed and warned about the dangers that exist. New men should never be permitted to work around equipment merely after being instructed. They should always work under the supervision of an experienced worker until such time as they become aware of the existing hazards.

General Discussion

CHAIRMAN CHANT: Now we have an opportunity for discussion of the two papers just presented. Mr. Long, there are one or two questions that I would like to ask you. You referred to your drawing of prizes or sweepstakes. I would like to ask you if you have these prize drawings monthly?

MR. LONG: That's right. We have prize drawings each month on the anniversary of the last lost-time accident; and it is a kind of reminder. We build up the cash award by starting out with fifty cents; that is, after there has been an accident, the following month the award is fifty cents, the next month it is a dollar, the month following that it is a dollar-and-a-half, so that it takes them a long time to build it up to ten dollars, a period of twenty months. While this amount is small, it could easily be worked out in larger mills by departments. We have found it very successful in our plant. This, of course, goes on indefinitely until there has been a lost-time accident. On the eleventh of this month, which is this week, we will have gone (let me knock on wood) forty months without a lost-time accident.

CHAIRMAN CHANT: How many men do you have in your plant?

MR. LONG: There are about fifty workers in our organization.

CHAIRMAN CHANT: Do you include the foremen in the prize drawing? Are their names put in with the others?

MR. LONG: Yes, they are.

ROLLAND W. RICHARDSON (Gardner-Richardson Co., Lockland, O.): Mr. Long, do you have any trouble with men having their hands injured when using a two-wheel truck? Have you made any kind of provision whereby their hands are protected?

MR. LONG: No, we have not had that experience. We usually have our aisles wide enough to operate in. We use this three-

wheel truck mostly for unloading rolls of paper. It is not very good, for example, if you have to take your rolls out of the pile, then take them to the backstands of a winder, and then let them down. You see, there is no way of lowering that roll unless you have a chain hoist. So we use that truck mostly for unloading, taking the rolls from the truck and standing them on end in the stock pile.

ERNEST AUGUSTUS (The Mean Corporation, Chillicothe, O.): I have never heard of this particular type of three-wheel truck and I am quite interested in it. Why not have something printed about it in the Safety Exchange section of the *National Safety News*?

MR. LONG: I shall be glad to give them any information they would like to have.

W. A. GLEASON (Hammermill Paper Co., Erie, O.): Perhaps Mr. Long will tell us how he gets the rolls down from storage?

MR. LONG: Well, we take those rolls and tip them over with the regular type of heavy two-wheel truck, and then we bring them over to the backstand and put them in the backstands with a hoist.

LYLE PARMENTER (Kimberly Clark Corp., Neenah, Wis.): I didn't notice any foot brake on the wheels on an ordinary two-wheel truck. I have seen accidents happen while you are tipping a roll over onto such a truck without a foot brake on it.

MR. LONG: You mean the ordinary two-wheel truck? Oh, yes, we have foot brakes on all of those.

MR. PARMENTER: It is always possible to block the two front wheels.

MR. LONG: Yes, they do that.

W. J. COWLES (Commonwealth Edison Company): I am not familiar with the handling of paper, but did I understand you to say that as regards these extra long rolls your operator stands up on top and tilts those over?

MR. LONG: They stick a bar in as you saw in one of the pictures that I showed you.

MR. COWLES: Is there any danger of that bottom slipping out and the top coming over and hitting the operator while he is going through that operation?

MR. LONG: There is very little danger because there is a shoe that goes underneath the roll.

CHAIRMAN CHANT: Has anyone any particular problem which has been causing accidents in the handling of unit materials?

MR. GLEASON: In connection with the Occupational Disease Act, the unloading of bulk sulphur from the box car to the wheelbarrow, wheeling it out, do you have any suction fans to take care of the extra dust that arises?

CHAIRMAN CHANT: Personally I haven't seen the vacuum system used in the handling of sulphur from cars; I have seen it used in the handling of lime. I see no reason why it couldn't be used in the handling of sulphur, provided, of course, that the necessary precautions were taken to avoid any sparking which might cause an explosion of sulphur dust. It is not at all uncommon to see sulphur handled from cars with shovels. In two mills that I know of the sulphur is handled out of incoming freight cars by hand, shoveled into barrows and wheeled a short distance to a dumping ground, and the men doing that work are regularly required to wear respirators of the simple nuisance-dust type.

I don't know of any place where a ventilating system is being used. I think perhaps the bulk of the sulphur—certainly the

bulk of it coming into the mills with which I am familiar—is handled mechanically, either dropped from hopper cars or unloaded with a clam-shell and mechanically dumped into piles.

It is a bit unfortunate that Mr. Robertson chose to deal principally with the handling of hog fuel. A good many of our mills do not use hog fuel. I understand it is quite a general practice on the Pacific Coast to use hog fuel as a principal source of steam, large quantities of it being used for boiler fuel. But the same hazards that Mr. Robertson dealt with in connection with hog fuel would also apply in the handling of other similar bulk materials. Coal, for example, would be handled very much in the same way in a good many of our plants, I'm sure.

MR. RICHARDSON: I would like to know what hog fuel is?

CHAIRMAN CHANT: I believe it is wood refuse run through a hog or chipper to produce a sort of mixture of chips and sawdust that will burn rapidly even though the wood itself is not very dry. Paper and woodpulp mills that are operated in close conjunction with a large sawmill often obtain much of their fuel from the wood refuse supplied by the sawmill. Up in Canada we are reckless with our timber resources: we just burn up the slabs in a burner outdoors in order to try to modify our severe winters, and then we import coal from Pennsylvania to run our boilers and paper mills. It hasn't occurred to us to use hog fuel.

CHAIRMAN CHANT: We will proceed with the next item on our program, which is the report by Fred Braun, Chairman of our Statistics Committee.

Review of 1939-40 Accident Experience

By F. W. BRAUN

Vice-President and Chief Engineer, Employers Mutuals, Wausau, Wis., and
Chairman, Statistics Committee, Paper and Pulp Section, N. S. C.

I would like to tell you that we had another very successful year in accident prevention, as I did last year. Each year during the past thirteen the paper industry has made progress in reducing either the frequency or severity of injuries, and often

both; but last year we lost some ground.

According to reports covering 236 mills and factories which worked 206,300,000 hours during the year, the paper industry averaged 15.2 injuries per million hours worked—no improvement over 1938. The

severity of injuries—days lost per thousand hours worked—soared 41 per cent to 171. Perhaps it was too much to expect another improvement in severity rates after an average drop of 48 per cent in 1938. While we had a sharp rise in severity and no change in our frequency rate, American industry as a whole took a step forward by making progress in both injury rates.

This general improvement means, of course, that we have fallen behind a little in our efforts for a place in the group of low rate industries. Our 1939 frequency rate of 15.2 was 28 per cent above the average for all industries. In 1938 we broke into the group of industries with lower than average severity rates, but the large 1939 increase resulted in a rate 21 per cent higher than the all-industries average.

The analysis of our injury experience discloses some facts which I believe are helpful.

It is unnecessary for us to consider steps for more effective work in small mills and factories. Unlike small organizations in some industries, ours have kept pace with their larger neighbors in reducing both frequency and severity. Frequency rates have been somewhat higher in the small organizations of the industry but in 1939, for example, severity rates averaged lower than in large plants.

But when we examine the records of different branches of the industry, such as re-manufacturing plants, paper mills and board mills, we find the types of mills with substantial safety problems. The industry's accident rates are determined to a considerable extent by the experience of paper mills. The exposure of re-manufacturing plants is less than one-fourth of the total for the entire industry and furthermore, the frequency and severity of injuries in this type of work are considerably less than in other branches. For 1939 re-manufacturing establishments averaged only 11.6 for frequency and 0.9 for severity. I do not infer that the record of this division is completely satisfactory. The fact is that frequency rates have not decreased during the past four years and during this period severity rates have gone up in box and container manufacturing.

My purpose is to emphasize where special attention is needed in order that we may make the most progress and at the same time con-

tinue efforts in less hazardous branches of the industry. In the important paper mill group our problem is principally in newsprint and wrapping mills. 1939 rates for wrapping mills, for example, average 23.5 for frequency and 2.2 for severity. The exposure of these two types of mills is almost one-half of the total for all paper mills. Newsprint mills have made consistent progress in reducing frequency during the past six years but no improvement has been made in severity.

Board mills have the highest injury rates in the industry, averaging 27.6 for frequency and 4.00 for severity during 1939. The reduction of these rates, therefore, would materially improve the general experience of the entire industry.

Getting down now to the individual departments the question is, "Which have the worst records and, therefore, require the most study and attention?" Based on reports made to the National Safety Council, I call your attention particularly to the records of employees engaged in paper and board making operations. This is one of the largest departments in paper mills; frequency rates are high—averaging about 22.0; and severity is sharply higher than the average for any other department, being about 4.0. I believe that a study of the circumstances of accidents would reveal that the nip hazard is an outstanding factor in the high severity for paper board making.

The hazards involved in handling and storing raw materials rank second in importance as shown by a frequency rate of 40 and a severity rate of 2.8. The safety problem in yard operations, according to our statistics, takes third place with an average frequency rate of 26.0 and a severity rate of 2.4. While the severity of injuries in wood room operations is only about one-half of the average in other high-rate departments, frequency averages 28.0 and, therefore, I believe this department warrants special efforts. The high-rate departments, in order of their importance, are paper and board making, handling and storage of raw materials, yard, and wood room.

There is room for improvement in other branches of the industry and in departments with better experience. Many factories have worse than average records; in fact their injury rates are higher than those of many organizations in more hazardous branches.

Paper goods manufacturers, for example, averaged only 9.46 for frequency and 0.44 for severity during 1939. Some factories, however, had rates that were two and three times these averages. In the paper mill group, book and specialty mills have low rates, averaging 12.8 for frequency and 1.5 for severity, but frequency rates above 20.0 and severity rates above 2.0 are not unusual. Therefore we must also look to these mills and factories for the reductions which will help to lower rates for the industry as a whole.

Many paper mills and factories, on the other hand, have achieved records comparable with the best in industries with low injury rates. The 1939 honor roll in "Accident Rates in the Paper and Pulp Industry," the annual statistical publication of the National Safety Council, gives the names of some of them.

In efforts to find answers to some of our accident problems and thus help members to achieve low injury rates, officers of the Paper & Pulp Section have given considerable time to developing information on the outstanding causes and circumstances of accidents in the industry. As far as I know, no other section has done as much in this work. The 1939-1940 paper industry safety contest rules required a report on the details of each accident resulting in a reportable injury and I want to summarize some of the outstanding facts from a study of these reports. We had splendid cooperation from contestants; I am able to present information based on 1,000 of these reports.

For years we have discussed the nip hazard and struggled with the problem of eliminating it. I do not believe that we have ever had any reliable measure of the importance of this hazard in our injury experience, but according to this study the nip hazard accounts for about 10 per cent of the injuries. Please remember also that this hazard stands out particularly in plants participating in the Contest—a group of leaders in safety work.

The analysis showed that employees were usually engaged in performing one of the three following duties when caught in the nip of in-running rolls. They were, first, threading or feeding paper into rolls; second, cleaning rolls; third, checking the condition of the paper by feeling for wrinkles, checking the size, etc.

Reports showed that efforts to eliminate the hazard through mechanical means were directed principally at guarding, formulating a safer method of doing the work, and changing the arrangement or design of the equipment or installing safety devices.

Elimination of the nip hazard through guarding is a real problem. Numerous statements were made that a guard was impractical and in other cases existing guards were redesigned and in still others guards were installed for the first time. One-third of the injuries due to the nip hazard were charged to lack of or inadequate guarding.

Changes in the design, construction, and arrangement of rolls, reels and winders were made less frequently. Improved guides, rope carriers and air pipes for drawing the paper from one felt to another, foot boards for preventing slipping were installed.

For one-half of the injuries resulting from being caught in a nip, mechanical preventive measures were principally a safer method of doing the work. Efforts were made particularly to keep employees a safe distance from the nip by providing long-handled scrapers for certain cleaning operations, air for feeding and cleaning, hooks and spear poles for removing paper and rubber tipped paddles for feeding sheets into the rolls. Reports showed, however, that these methods were not entirely effective because the hose or scraper was caught in the nip and before the employee released his hold, his hand or arm was drawn in.

Other changes in working methods placed still more dependence on safe performance by the employee. These were performing cleaning operations from the out-running side of rolls whenever possible, stopping the rolls on certain equipment for adjusting and cleaning, tearing paper to a point for threading, testing for wrinkles only when the roll reached a diameter of 8 or 10 inches. Many reports, however, did not show that improved working methods were formulated either previous to or after the accident; responsibility for avoiding the hazard was placed entirely on the employee by ascribing the accident to a personal cause, such as disobedience of instructions, inattention, carelessness, or unawareness of the safe practice or lack of knowledge or skill.

Such personal causes, however, were factors in 80 per cent of the injuries. Disregarding instructions was of most impor-

tance particularly among employees with years of service. Violations of safe practices were often ascribed to lack of supervision. On the other hand, it is doubtful from many reports whether the experienced employee was instructed or thoroughly trained in the work. In addition, numerous injuries were assigned to haste, abstraction, and similar attitudes showing failure to keep safety upmost in their work.

New employees with less than one year's experience also figured frequently in accidents due to the nip hazard. They often failed to follow instructions. It is doubtful from many reports, however, whether specific instructions were given and whether orders were clearly understood. Aside from an unsafe mechanical condition, most injuries involving new employees were assigned to unawareness of safe practice.

For our No. 2 safety problem the analysis pointed to floors particularly and to stairs, platforms, scaffolds, and similar working surfaces. These were involved in 12 per cent of the injuries. Outside of the mill the principal danger spot was log piles, especially when employees climbed and walked on them during wet or cold weather. I was surprised, also, at the number of injuries resulting from falls on icy sidewalks and steps.

The slippery condition of floors especially, stairs and runways was a particularly outstanding cause of accidents. Oil spots on floors, worn treads on stairs, and smooth steel floor plates used for runways were often reported but wet floors, due to the extensive use of water in certain processes, far outnumbered any other single slippery condition. Numerous reports stated that the

condition was inherent in the process and there was no remedy other than vigilance on the part of employees.

Numerous injuries also resulted from rough floors due to holes and ridges, open drain and broke holes, and poor housekeeping. Rough floors and poor housekeeping figured particularly in accidents to truckers.

In accidents involving floors, stairs, runways, platforms, etc., 90 per cent of the injuries involved some unsafe condition in comparison with 50 per cent involving employee causes. It seems logical, therefore, to look principally to engineering measures for eliminating these hazards.

Two additional safety problems were disclosed by this study, of about equal importance—one involving the operation of trucks and the other the use of hand tools. The condition of tools and trucks was not an important factor in accidents. Causes of employee actions figured in more accidents than did mechanical causes. This is especially true of causes of lack of training, skill and experience.

On the basis of this study we can well afford to give more time to instruction and emphasis on the safe use of picaroons, axes, hammers of all types, crow bars and knives.

In truck accidents we found a wide variety of circumstances figuring in their occurrence. The following factors were reported frequently: overloading; shifting of load due to improper arrangement or failing to secure it; pulling instead of pushing; operating trucks too fast; jumping off trucks; failure to wear safety shoes—foot injuries occurred frequently when struck by falling materials or when the feet were caught under the wheels.

General Discussion

CHAIRMAN CHANT: Mr. Braun referred particularly to the important part that nip hazards continue to play in the production of accidents in our industry. He suggested that it might be again made a subject of discussion at our next annual gathering. I am wondering personally whether much could be done by a further discussion of the problem of nip hazards in general. It is not particularly surprising to me that nip hazards continue to figure in 10 per cent of the accidents of the paper industry. All the way

through our pulp and paper mills we have equipment which in its operation and in its very nature creates nip hazards; but I am not prepared to admit and will not admit that the nip hazard cannot be overcome.

I am thinking of one particular plant, a large, modern, fast-running newsprint plant wherein the paper machines operate at a speed of approximately 1,200 feet per minute, and where the winders, of course, to keep up with the machines, must operate at a much higher speed. In this plant up until about two years ago winder accidents were alarmingly frequent and serious. A

relatively large number of their paper machine crews, particularly the fifth hands, fourth hands and third hands operating those winders and working around them, got caught in the running nip of the winders with more or less serious injury resulting.

The superintendent of that mill determined to put an end once and for all to accidents of that nature on his winders, and he fenced those winders in so that they were completely enclosed. The fence was made in such a way that it could be dropped down below the floor level or to the floor level for access to the winder in making splices or in starting up, or removing the finished set. Strict instructions were given the crews that the winders were not at any time to be operated unless those fences were up and in position.

About a month after that, during one of the night shifts, one of the winder men was again the victim of a winder accident. Upon investigation it was found that he had, contrary to instructions—or his crew had done so contrary to instructions—operated the winder with the fence down so that the winder man could have access to the roll on the winder in order to feel it. The superintendent immediately took steps to have those fences interlocked electrically with the starting mechanism on the winders, and from that day to this there have been no nip accidents on those winders for the simple reason that it is utterly impossible to start the winders unless the fence is in position. Unless a member of the crew sees fit to climb up higher than his head over the fence and then climb down again on the inside, he can't possibly get into the winder nip.

To a great many paper makers of my day that would have been considered a physical and operating impossibility. The first answer you would have received from any of the paper makers that I grew up with would simply have been that "You can't operate a paper machine winder if you can't get at the rolls." Well, they are doing it and they are not having any more culled rolls than they had before; in fact, they are having less. It does mean that the back-tender a step further back in the operation must make a better feel, because he has to wind the paper off on the winder without having the opportunity to feel the roll and perhaps make some adjustments during the winding.

Part of the development, of course, has

been due to the advancement in the art of paper making and in the equipment of the winder itself and the provision of a rider roll to ride on top of the growing roll of paper. I am just citing that instance to show what can be done to eliminate nip hazards and the accidents from them when the management of a plant is sufficiently determined that accidents of that nature shall cease.

F. H. ROSEBUSH (Nekoosa Edwards Paper Co., Port Edwards, Wis.): Mr. Chairman, I think if you will look back in the records of this section 15 or 16 years, you will discover that we have discussed these nip hazards quite a number of times. I don't think that this problem of overcoming the hazard on sheet rolls is insoluble. I believe it can be met. There was a guard perfected by Beugaard of the Flambeau Paper Company at Park Falls, Wisconsin, which overcame the difficulty. But the thing that we haven't solved in our discussion is the hazards attendant to the making of the counter rolls where the 9 inch counter roll is dropped between the winders and then taken off every couple of minutes.

This Beugaard guard had a shell that came over the winder close up to the sheet roll, and a few years ago they were trying to work over that guard so that it would take care of counter rolls; but I don't think anything has been done to overcome that particular hazard.

CHAIRMAN CHANT: Has anybody had any experience in making counter rolls—these rolls with a small diameter—with the direction of winding reversed? I don't know whether that is practical or not.

E. A. PAGE (Kimberly-Clark Corp., Neenah, Wis.): What do you mean by counter rolls?

CHAIRMAN CHANT: Small diameter rolls of about 9 inches. I have seen newsprint winders where the direction of rotation of the winder drums was changed, simply reversed. It is a simple mechanical operation. I don't know whether it has been attempted on counter rolls. No doubt, however, that in the event of being caught the resulting injury might even be worse because it would involve not only the burning and mashing of fingers but perhaps the throwing of the whole body over the winder. However, I believe we would all agree that the hazard would be less when the inrunning

nip is over and out of sight than when it is on the front.

MR. PAGE: It would reverse your sheet, too, wouldn't it?

CHAIRMAN CHANT: Yes, you have to make provision for it right through your setup. It can be done on your reel, you see, by reversing your reel rotation also.

MR. PAGE: As regards this problem of nip hazards, has anybody any device or any means of enforcement of the rules? For instance, a rule that a roll less than 9 inches is not to be felt.

MR. AUGUSTUS: After we had had a couple of accidents on our winders, where a fellow was feeling a roll just being started, we made it an iron-bound rule that regardless of what might be the necessity, a man was not to feel a roll until it was at least 9 inches in diameter. They don't do it any more and we are not losing more paper.

CHAIRMAN CHANT: That's fine!

How many of you have seen and read the data sheet relating to drum-type rolls which came out during the year? (Several hands raised.) I would like to know whether you think the data sheet has dealt adequately with that problem, which has also the hazard of an inrunning nip on a drum-type roll? Is it your general feeling that it does answer some of the questions involved in that piece of equipment, or should it be considered a fit subject for further development and further study?

A considerable amount of difficulty was

encountered in the preparation of that data sheet, mainly because of the very wide differences in the type and arrangement of drum-type rolls in various plants in various parts of the country. That is one of the problems that we have run up against in this industry, trying to develop safety instruction cards, pamphlets and data sheets. What is a perfectly good recommendation as to the avoidance of a nip hazard in one plant is inapplicable in another plant because of some difference in arrangement or some difference in type of equipment. That is a condition, I'm afraid, which we will always have with us as an industry.

I am not going to add anything to what Fred Braun has already told you in connection with the accident experience data that is to be issued periodically by council headquarters for the use of our section members. I am sure that as the practice is instituted and goes on from month to month, we will find very great usefulness in that information, and if it needs any revision as to its form or as to the basis on which it is prepared, I am sure that such revision can be made as soon as we have decided what changes we would like to have. I think that is a great forward step in the service which the Council headquarters staff is rendering to this Section and to this industry as a whole, namely: the provision of accident data and accident statistics as we go along rather than as a report at our annual meetings only.

TUESDAY AFTERNOON SESSION

October 8, 1940

CHAIRMAN CHANT: I have a summary of the attendance at yesterday afternoon's session. There were 101 persons registered at our session yesterday afternoon. Of that number 67 were members of the Paper and Pulp Section; the other one-third, 34 in all, were visitors. We were very glad to have those visitors with us, and I take this opportunity to also welcome the visitors with us today.

The distribution of the membership that attended yesterday might also be of interest to you. From the State of Illinois there were

6 members; from the State of Wisconsin 28; from the State of Maine 2; from Louisiana 2; from South Carolina 1; from North Carolina 2; from Pennsylvania 3; from Massachusetts 2; from Ohio 5; from Michigan 2; from Tennessee 1; from New York State 6; from Minnesota 2; from West Virginia 1; from Kansas 1; from Newfoundland 1; from Canada 2.

MEMBER: There were four from Tennessee present here yesterday.

CHAIRMAN CHANT: This is a summary of the registrations which were turned

in yesterday. If you know of four Tennesseans who were here yesterday, all I can say is that only one of them registered.

I take much pleasure in presenting to you now a former General Chairman of our sec-

tion, Mr. Earl Grant, who will give us the first of two papers on the general subject, "Practical Uses of Accident Cost Data in the Safety Program."

Practical Uses of Accident Cost Data in the Safety Program

By EARL E. GRANT

President, The Crystal Tissue Co., Middletown, Ohio

Personal experience has taught me that accidents are costly to the injured and the company, to the extent that I have always believed in rising accident costs as a barometer in addition to severity and frequency rates.

Accident statistics or cost data really start with the departmental accident report and include the report to the State Industrial Commission with the medical, hospital and compensation awards and finally end with the settlement sheet.

The direct costs can be used for cost data, but we cannot get an accurate cost for damage to machinery, effect on fellow workers, suffering to the injured employee, or the cost assumed by his family.

I want to deviate from the cost angle and read you a paragraph from monthly accident statistics report for Ohio compiled by the Department of Hygiene for the month of May:

"The 16,259 injury and occupational disease claims filed with the Industrial Commission in May, an increase of 988 over the preceding month, reflect a gradual increase in employment as shown by research reports, especially in the heavy industries. The 81 fatal claims filed are a decrease of 18 over April."

This was the first time that I had been forcibly struck with the fact that accidents were being used as barometers or indicators of employment.

Some of you may treasure an old family Bible with births and deaths recorded in it, but I have an old black book in my desk which is almost bursting with statistics gathered in the last twenty years. These statistics cover tonnage, hours worked, payroll, cumulative accident reports, bowling and baseball schedules, etc., and are very important and interesting to me.

It sometimes pays to check up in the old book and find out what we did ten or twenty years ago and check with today's record. We occasionally get in a rut or have a complacent feeling that we are going fine and a check-up on past performance may show that after all there was a time when conditions were even better.

During the last twelve years we have run from a low of 354,946 to a high of 648,556 man hours worked with an average of 509,145 hours and a total of 72 lost-time accidents. Our two first years in the Paper & Pulp Section Contest saw us pile up 26 or 13 lost-time accidents per year; which were followed by a no-accident year.

The lost-time accidents are costly, of course, but they are the ones you naturally guard against.

Our total accident awards for the 12 years amount to \$35,619.22 and our accident costs total \$43,275.92.

Accident costs are a tax on industry just the same as excess profits tax, social security or real estate taxes, but are levied by the careless employer and the untrained or thoughtless employee.

Our accident costs have averaged .007 per hour or \$7.08 per 1,000 hours worked during the last twelve years; and the compensation, medical and hospital fees have averaged .0058 per hour or \$5.83 per 1,000 man hours worked.

The premium in our manual group under the Industrial Commission of Ohio amounts to \$2.00 per \$100 of payroll and will increase or decrease according to the attention given it by the representatives of the mills in the group. We had an increase from \$1.60 to \$2.00 about five years ago, and tagged it there when we had a meeting and decided to pay more attention to the hazards in the mills affected.

Frankly, I am ashamed to admit that our net cost per ton of product has been as high as .67½¢ in 1931 and as low as .31¼¢ in 1928 with an average of .45¢ per ton for the twelve-year period.

Costs and personnel have always been two of the most interesting phases in business to me and I cannot think of accidents without immediately tying in the cost and personnel angles.

Accident cost data interest us in keeping costs down as our business is very competitive and from a personnel viewpoint we are more deeply interested as most of our employees have been with us for more than ten years.

In conclusion I'd like to refer you to the

CHAIRMAN CHANT: I am sure that after the next paper has been read, which has to do with the other half of this same subject, there is going to be considerable discussion centering around your very excellent paper.

While Mr. Grant was speaking I could not help but think that in a good many organizations in our industry the safety man or the safety director or the safety supervisor is, to some extent at least, regarded throughout the organization as a sort of generally useless cuss who isn't much good at any other kind of work. But we have here a living example of the fact that occasionally a safety man, without losing his

Managing Director's Page of the July issue of "National Safety News" and to the article by our good friend Bill Cameron entitled "Who Directs Your Safety Program?" The article deals with the various department heads who may be charged with the Safety Program. He points out that a Safety Program delegated to the treasurer or auditor will be treated from a cost angle, the sales manager will try to sell from posters, signs, literature, etc., the plant engineer from planning safety through equipment design and layout, materials and maintenance schedules, etc.

A full time safety director is preferable, as Mr. Cameron concludes the article, but the most important question in my mind is "Who Controls the Safety Director?"

interest in safety, can either because of that interest or in spite of that interest rise to greater heights. Mr. Grant is an example to us of one who has risen out of the safety department into the position of senior executive.

The second paper on this subject, the use of accident cost data in our work, was assigned to a fellow-Canadian in the person of Julius Draper, Safety Director of the Consolidated Paper Corporation, Grand Mere, Quebec, Canada.

I am very sorry that Julius cannot be here to deliver his paper in person. I have it here and with your permission will read it for him.

Practical Uses of Accident Cost Data in the Safety Program

By J. A. DRAPER

Director of Safety, Consolidated Paper Corporation, Ltd., Montreal, Canada

Some time ago I made "Accident Costs" the subject of an address before one of our mill safety meetings; there were a few foremen present and one or two superintendents, but most of the men were from the ranks. I told them how much our accidents had cost the Workmen's Compensation Commission the previous year—how much we paid the Commission in assessments—and explained that as our accident experience improved so would our assessment be lowered. The less money the company paid in accident insurance, the more there would

be to spend on plant improvements, wages, etc.

I thought I had made it fairly interesting, but during my visit to that mill the following week, the secretary of the Safety Committee said to me, "You know, Mr. Draper, your talks are usually pretty good, but you sure pulled a 'lemon' last week! Those boys don't give a tinker's hoot how much our accidents cost the company. All they want to know is, 'Has the company enough money to pay our wages and will we receive Compensation if we are hurt?'" I believe that

the secretary was making too broad a statement, but he was, to a great extent, quite right.

If you are going to use your accident costs to further your safety program, take them to the men who are most vitally interested in costs, your managers, superintendents and foremen.

By and large, if there is one man in a mill who is as keen or keener to prevent accidents and show an improvement in accident experience than the safety man, that man is the mill manager.

All managers are vitally concerned with costs. There is at least one type of meeting where the manager takes charge and keeps the initiative—where the superintendents know that he means business. I refer to cost meetings. It is indeed a happy concern where cost meetings are jovial, carefree affairs!

I am going to describe now how we have formed our accident cost figures into an accident prevention tool, and how that tool is placed in the hands of our division managers.

Placing a tool in a man's hand is one thing, but whether or not he uses that tool and the efficiency with which he uses it, are other matters. However, the following scheme is used by some of our managers at some of their cost meetings. It may or may not be a novel idea. Some of you, no doubt, have other and perhaps better ways of using accident costs.

Early each month our safety inspectors receive the accident cost statements for their respective mills from the insurance department. This statement shows the money paid out by the Workmen's Compensation Commission during the preceding month for each individual accident case. From this sheet the safety inspector prepares a statement showing the accident costs by departments and this is sent to the division accountant, who incorporates the accident costs by departments as a footnote to the departmental cost sheets. The footnotes show the accident costs for the month and the cumulative total for the year to-date, for each individual department.

These figures are discussed between the manager and superintendents at the monthly cost meetings.

The manager makes appropriate remarks when reviewing the costs of the departments

that show very little or no cost for accidents. In the case of the other departments, it is pointed out that accident costs are by no means a small item. The manager wants to know what caused that accident, or those accidents; what has been done about it? Has that floor been fixed? Are there any more such bad spots in the floors about the plant? Have those truck handles been altered so that we will have no more broken toes? Are you encouraging your men to wear safety shoes? Are you insisting that your men obey our safety rules? Do you show to the whole personnel by your words and actions that you are right behind our safety work, and are determined to do your utmost to prevent accidents? These are some of the points that can be brought before the supervision of a plant by the manager at a cost meeting.

Cost meetings are to discuss ways and means of reducing costs. Accidents are a needless waste and therefore are a legitimate subject at such meetings. The personnel at cost meetings are also the very men who, in many cases are, and in all cases should be, among the most enthusiastic safety workers in a plant.

The money cost of accidents is far from the most important reason for installing guards on machinery, it is probably the least important. Nevertheless, a safety director can use the proved savings of guards in one instance to help sell the idea of installing guards or making improvements in other places.

Many years ago the winders for our newsprint machines at two of our mills were not equipped with guards for the in-running nip between the winding roll of paper and the drum. Accidents were fairly frequent, and nearly always serious. They ranged from pinched fingers to fatalities, but usually resulted in mangled arms. The cost of these accidents was very high, sometimes ranging into thousands of dollars per year per mill. Again let me emphasize that this money cost is small compared to the loss in human values. I never want it said, that "This man tries to prevent accidents chiefly because they cost money."

To get back to our winders—Some years ago the winders were equipped with simple guards, the cost was in the neighborhood of \$100 per winder. Total cost for the two mills certainly not over \$1,600. The spend-

ing of this sum has virtually eliminated our nip point accidents at those winders. Based on our experience before installing guards we can say that they are saving at least 100 per cent of their cost per year.

Many of you can cite similar instances. If your management hesitates to install guards, or make other improvements designed to increase safety, *because of the cost*, be prepared to point out that they cannot afford *not* to do the work! If they talk cost, you talk savings, and have some such example as I have cited to back up your argument.

A safety director naturally would know the rate his company is paying for accident insurance. He should also know how much this amounts to in a year. He should know what rate was paid in previous years; how much money is being saved because of an improving accident experience; and he should be able to compare the insurance costs in his state or province with the costs that prevail in neighboring states or provinces.

He should be "cost conscious," and be able to prove, in conversation, that he has a

larger grasp of his job than that necessary to install guards, address safety meetings, and compile accident statistics. Men are far readier to listen to a man and take his advice when that man can show that he knows his job, can point to the savings that have been made in the past because of accident prevention, and holds out the prospect of further savings, provided further improvement in accident experience is attained.

To sum up:—

1. Accident costs can be formed into a useful accident prevention tool, and wielded most efficiently by managers at cost meetings.

2. A safety director should be able to cite concrete examples where money spent on accident prevention has brought in handsome returns, and be able to use such cases as an argument to secure further improvements.

3. He should know his company's present accident costs, be able to compare such costs with previous years, and with comparable industries in other parts of the country.

General Discussion

CHAIRMAN CHANT: Now we are ready for discussion on those two papers on accident cost.

CLAYTON O. BRAATZ (Marathon Paper Mills Co., Rothchild, Wis.): I wonder how many men here keep their accident costs, as referred to by Earl, on a cost per one-hundred-dollar-of-payroll basis, which is the cost generally used in compiling insurance rates? I would like to compare our costs, for example, with other mills. (Several hands raised.)

ERNEST AUGUSTUS (The Mead Corp., Chillicothe, O.): Mr. Chairman, Earl commented on the compensation and treatment costs shown in the Industrial Commission records. I wonder whether those costs are kept and charged back to the particular years when the accidents occurred or whether they are charged out currently as they are paid?

For example, we have one case of an accident which occurred to one of our workmen about 15 years ago, and we are still paying that man compensation and will continue to do so until he dies. Of course, that shows up on the Industrial Commission's

records as compensation paid each year, but for our records we are charging it back to that year in which the accident happened. It makes a whole lot of difference in the final comparison wherein you want to show whether your records are improving or not.

MR. GRANT: Ours are all charged back to the year in which the accident happened. That is the reason we have been able to compile an average cost by year for comparative purposes.

CHAIRMAN CHANT: I am familiar with a few firms where the costs are kept both ways.

R. W. CROUCHER (Minnesota & Ontario Paper Co., International Falls, Minn.): Do these costs of accidents include the hidden cost or merely the dollars and cents paid out?

MR. GRANT: In our company, they do not include the hidden cost. I mean, that cost which you just arrive at more or less by guess work. There are a lot of accidents which are costly but it is difficult in most cases to tell what the costs are. All the actual costs, of course, are compiled and kept.

There is another thing we have always done in our accident program (and I think

probably a good many of you will disagree with us on this): we have never kept any cost of a guarding program. We claim that any money we spend on guards is spent for the good of the employees and that anything that is good for the employees is good for our company; so it is charged to the manufacturing cost and not against the safety program in any way.

MR. CROUCHER: Then if they do not include hidden costs, the insurance premium, of course, is the cost of accidents per one hundred dollars of payroll, isn't it?

CHAIRMAN CHANT: Yes, that's right. The actual cost to your company in any year is the amount that you pay to the Industrial Commission less any refunds that you may get. For purposes of a closer record, however, the actual cost of the accident is a much better figure. In most of the setups in the provinces of Canada and in the United States there is a mutual coverage of a group of firms, so that there is an item in your cost of payments to the Commission that represents part of the burden that you carry for the other firms in your group, provided your experience is better than the average; or, on the other hand, what you paid to the Commission may not represent your cost of accident if the other people are carrying you for the time being. Therefore, I think that both figures should be kept.

I would like to add something to a sentence that I recall reading in Mr. Draper's paper, where he seems to have apologized a little for having talked accident costs to a group of men at a meeting in one of the mills, a group of men that was principally composed of individuals who were not foremen or supervisors. I don't agree with him there. In my regular job I have to do a good deal of talking to groups of people from the various mills in my association. I have found, much to my surprise, that the men in the mill are interested in accident costs.

Perhaps Mr. Draper's statement seems a logical one: that they are interested only in knowing whether the company is going to continue paying wages and whether, if they are hurt, they can be sure of receiving compensation, but I do not agree with that. I believe that the average man in the average pulp and paper mill is interested in everything that relates to the orderly prosecution of his company's business, and accident cost

is a part of that. Frequently, when talking to groups such as those I have referred to, I use accident cost figures, both the figures of their own plant and the figures for the group under the Industrial Compensation Commission of which that mill happens to be a part; and I always begin my discussion of costs without any apology and with this simple explanation: that in order to tell what progress is being made in the control of accidents, you must have some unit of measurement. We have definite units of measurement of a great number of things around a mill. We can measure the quantity of wood, or the weight of coal, or the pressure of steam, or the speed of moving objects, and we can measure any number of other things, and measure them accurately, because we have standard units by which to measure them. But we have not as yet, so far as I know, obtained a unit of measurement for human pain and suffering and worry and anxiety. And until we do get such a unit of measurement, we must necessarily measure our control over accidents or the lack of it in some known unit and I suggest to you that dollars-and-cents costs form just about as good a unit as any other.

While we are talking about the dollars and cents of accident cost, in my mind flash various pictures of mangled human beings that I have seen in industrial accidents. That is what I think of when we talk about the dollars and cents of accident cost. Any man who has worked in any mill and who has had any experience with accidents can draw on his imagination for all the gory pictures that he wants in order to back up the dollars and cents figures. With that approach I'm sure that Mr. Draper would not find his discussion of accident costs uninteresting to this group. I found it very much the other way. I have been questioned for hours on end about accident costs on the part of men who had no direct concern with the costs. They were not foremen and they were not supervisors; they were paper makers, pulp makers, laborers, etc., who were interested in the costs of accidents and what it cost to repair an injury—what had to be paid to the doctors, the hospital, and so forth in order to get the fellow fixed up.

MR. GRANT: In line with Mr. Draper's idea, there are any number of men in paper mills who believe that the premium we are paying is a blanket covering regardless of how many people get hurt—that so many

ing of this sum has virtually eliminated our nip point accidents at those winders. Based on our experience before installing guards we can say that they are saving at least 100 per cent of their cost per year.

Many of you can cite similar instances. If your management hesitates to install guards, or make other improvements designed to increase safety, *because of the cost*, be prepared to point out that they cannot afford *not* to do the work! If they talk cost, you talk savings, and have some such example as I have cited to back up your argument.

A safety director naturally would know the rate his company is paying for accident insurance. He should also know how much this amounts to in a year. He should know what rate was paid in previous years; how much money is being saved because of an improving accident experience; and he should be able to compare the insurance costs in his state or province with the costs that prevail in neighboring states or provinces.

He should be "cost conscious," and be able to prove, in conversation, that he has a

larger grasp of his job than that necessary to install guards, address safety meetings, and compile accident statistics. Men are far readier to listen to a man and take his advice when that man can show that he knows his job, can point to the savings that have been made in the past because of accident prevention, and holds out the prospect of further savings, provided further improvement in accident experience is attained.

To sum up:—

1. Accident costs can be formed into a useful accident prevention tool, and wielded most efficiently by managers at cost meetings.

2. A safety director should be able to cite concrete examples where money spent on accident prevention has brought in handsome returns, and be able to use such cases as an argument to secure further improvements.

3. He should know his company's present accident costs, be able to compare such costs with previous years, and with comparable industries in other parts of the country.

General Discussion

CHAIRMAN CHANT: Now we are ready for discussion on those two papers on accident cost.

CLAYTON O. BRAATZ (Marathon Paper Mills Co., Rothchild, Wis.): I wonder how many men here keep their accident costs, as referred to by Earl, on a cost per one-hundred-dollar-of-payroll basis, which is the cost generally used in compiling insurance rates? I would like to compare our costs, for example, with other mills. (Several hands raised.)

ERNEST AUGUSTUS (The Mead Corp., Chillicothe, O.): Mr. Chairman, Earl commented on the compensation and treatment costs shown in the Industrial Commission records. I wonder whether those costs are kept and charged back to the particular years when the accidents occurred or whether they are charged out currently as they are paid?

For example, we have one case of an accident which occurred to one of our workmen about 15 years ago, and we are still paying that man compensation and will continue to do so until he dies. Of course, that shows up on the Industrial Commission's

records as compensation paid each year, but for our records we are charging it back to that year in which the accident happened. It makes a whole lot of difference in the final comparison wherein you want to show whether your records are improving or not.

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MR. GRANT: In line with Mr. Draper's idea, there are any number of men in paper mills who believe that the premium we are paying is a blanket covering regardless of how many people get hurt—that so many

dollars and cents go into our state headquarters. When you take time to explain the thing to them, they see a different picture.

E. A. PAGE (Kimberly-Clark Corp., Neenah, Wis.): Do most of these accident cost figures include the cost of first-aid dressings and that sort of thing or just the cost of compensable accidents? How do the insurance companies run those things?

CHAIRMAN CHANT: Most companies, so far as I know, in most industrial compensation setups have the cost of the first-aid treatment in the plant borne by the employer. I don't know whether that is correct in your jurisdiction or not, but it is true in Canada. However, there are many cases in which no lost time is involved—that is, no time lost beyond the day of the accident—which are not really counted as lost-time accidents—but in which there is some cost borne by the Commission. Any service rendered by a doctor or by a hospital, regardless of whether the man himself is disabled long enough to get compensation, is still paid for by the Commission under our Acts in Canada, and I think that most of your states have the same or a similar type of coverage.

MR. PAGE: Were they included in Mr. Grant's figures?

MR. GRANT: As regards our first-aid equipment, it is charged out currently as it comes in. It is a mill expense item.

MR. PAGE: How about the salaries of nurses, etc.?

MR. GRANT: We don't have any nurses. We have two first-aid men in our organization. Their salaries are charged against the mill and all supplies are charged out currently as they are received.

M. D. KOSSORIS (U. S. Department of Labor, Washington, D. C.): I have been greatly interested in this discussion. It seems to me that safety men who may have to justify their programs in terms of savings are not putting their best foot forward when they are counting their savings in terms of insurance premiums or compensation actually paid out. When accidents do occur you have, in addition to the premium paid out, these medical, first-aid expenses, spoiled materials, possible damage to equipment, stoppage of machines, etc., all of which things cost money.

Why not include these costs, why not

charge them to the accidents to which they belong? Keep separately, if you wish, the compensation cost and the insurance cost, but in addition to that keep, on the other hand, these other costs. I won't call them hidden costs—I think they are not hidden costs but rather indirect costs, if you want to call them that. I believe you will find that these indirect costs will be about four times as large as your direct outlays. When you have to make out your case for safety programs or the guarding of equipment or the teaching of safety habits, etc., and when you want to show what the savings have been as a result of those programs, I think you are perfectly justified in including not only what is actually paid out in terms of compensation and insurance but also in these other costs that you haven't been able to prevent.

CHAIRMAN CHANT: I think you are perfectly right. But it is a difficult thing in most instances to accurately determine the indirect costs of some of these things. I have taken a number of individual cases and spent a great deal of effort trying to get at those indirect costs. I have one case on record where the indirect costs, which we could definitely put a finger on and measure, were 27 times as much as the direct cost; whereas I have many other cases where I couldn't find that it even equalled the direct cost. In general and on the average I think you are absolutely right. If there is any way by which we can record definitely and directly the indirect costs, then we certainly should have such a record; but if we can't do that, then I think we are quite safe in claiming that they amount to four or five times as much as the direct costs while letting the other fellow try to prove that it isn't so.

MR. GRANT: I would like to take exception to the remarks made by the gentleman from the Department of Labor. I personally maintain that if you are going to charge the costs for your machinery into your direct accident costs, you will find that you can charge about 50 per cent of those costs against the management for lack of proper and sufficient guarding, which has no part in your accident program, instead of against accidents.

CHAIRMAN GRANT: I agree with you there.

MR. PAGE: To make the argument a

bit more sound, as regards the savings on and the cost of accidents, do any of the firms represented here keep an account of the cost of meetings, accident prevention programs, educational programs and the like? Are those things charged in?

CHAIRMAN CHANT: I know of several instances where such accounts are kept, yes! I am familiar with a number of cost departments where those figures are kept accurately, where the time allowed to safety committees in their monthly inspections, to safety meetings and all other measurable items of the cost of safety programs, is accurately recorded. However, I don't know of any firm where any great use is made of such records, other than to include them in their detailed cost sheet.

MR. PAGE: Is that added to the cost of accidents?

CHAIRMAN CHANT: It is itemized and kept separately so that they can tell how much the operation of the safety committee has cost in dollars and cents for the past year or for the past five years. By means of such a record the manager from time to time is made aware of what these things cost and he has some knowledge of whether they are unduly increasing in cost or decreasing, which might indicate a lack of attention or perhaps a falling off in the number of meetings or in the number of inspections or something of that sort.

MR. PAGE: You don't know the comparison between the cost of safeguarding and the cost of accidents in your organization?

CHAIRMAN CHANT: I don't know

where that is being done, although perhaps it is being done somewhere. In all fairness to the men who prepared these two excellent papers on this subject (I should have stated this before) it ought to be said that in both instances it was suggested to them that they do not attempt to go into a discussion of detailed accident costs at a meeting of this kind. The reason for that was not that there was any hesitancy about making known the cost of accidents in any given plant, but rather because of the very great difficulty in making anything like an accurate comparison between plants located in different compensation jurisdictions. I know that we have had a difficult time for years trying to compare compensation costs in Ontario with those in other provinces of Canada and with other jurisdictions in the United States. That is a very difficult thing to do because of the differences in the Acts.

It is easy and simple to obtain the assessment rates. You may know that the cost per one hundred dollars of payroll is lower, but you first have to know what you get for the dollar of assessment that you pay, and there is so much that is included in what is being paid for under the Act: the period during which compensation is paid, the waiting period, the percentage of wages, and all these other things which make it a tremendously difficult task to obtain anything like an equalization of the figures. For that reason the Executive Committee, when suggesting that this item be put on the program, thought that we might better discuss it from the point of view of the general use of figures rather than the actual cost figures themselves.

JOINT SESSION WITH WOOD PRODUCTS SECTION

October 9, 1940

The meeting convened with J. C. Wilson, Vice-President, Lumbermens Mutual Casualty Company, Chicago, and General Chairman, Wood Products Section, National Safety Council, presiding.

CHAIRMAN WILSON: In our Wood Products Section meeting Monday afternoon the Illinois Department of Labor sent us over a picture which was presented by Deputy Cannon, and it met with such a fine

response and so many people did not see it that we urged them to show that picture again this afternoon.

After that picture has been presented, we will have shown to us a British Columbia picture that has to do with heavy logging and that was sent to us by our friend Jenkins. We also have a picture from the Western Pine Association, all of which will tie into a part of this discussion.

The American Standards Committee is rewriting the code on logging and sawmill activities and I know that some of the points that will be brought out in the discussion and some of the things that will be emphasized in these pictures are going to tie in to this suggested code.

(The motion picture was presented.)

WILL D. JENKINS (British Columbia Lumber Manufacturers Assn.): On my way up here somebody was asking me about strains. Along about the fall of the year a lot of the men seem to get lumbago when they want to lay off for a while and receive compensation for it. Well, with these power saws we find that we are not eliminating any labor but we are making it easier for the men to work.

Heretofore we have always hired a bunch of men with strong backs and weak brains to fell timber. But now we are trying to conserve some of the timber and to teach some of the boys whom we get out of university how to fell this timber, because there isn't very much to it, you see. Besides, it is the only mechanical device to be introduced that didn't eliminate somebody from a job, and we are kind of hot on this thing up there in British Columbia, you know.

These saws which you noticed on the screen are the big ones; those are the ones that fell the timber. But we have fellows who go around with something like an Even-rude engine on their backs that has a flexible shaft which they run along a tree in order to clean these knots off and all that sort of thing—there is nothing to it, you see—and we don't knock anybody out of a job.

QUESTION: Can two men do any more work with that saw than one man?

MR. JENKINS: No, the power saw does not increase the production. But they can work a power saw all day long, as our boys do out there, and then they can come in after quitting time and play tennis or volley ball, if they want to. Before we usually hired a man only for about thirty days, after which he was so worn out that he wasn't able to work any more. Besides, we paid him for eight hours' work and only got six hours' work out of him.

QUESTION: Have you had any accidents with that saw?

MR. JENKINS: We have had fewer accidents with them for the reason that the men who operate these saws are of a some-

what superior mentality—if you get what I mean. They are not so broad in the back.

QUESTION: How much does that outfit weigh?

MR. JENKINS: About 125 pounds altogether.

QUESTION: Dragging it from one place to another, is there any possibility of coming in front of it?

MR. JENKINS: In walking through the forest you have always that hazard of not knowing where you are going to step. You are likely to step on top of something or into it. That's where we get our worst and greatest number of accidents, from falling down, slipping, tripping, etc. They are about the greatest hazards that you have in this kind of work.

QUESTION: What is the approximate cost of one of those power saws?

MR. JENKINS: I don't know exactly, but I imagine that they cost around \$400 a unit.

QUESTION: Those saws help you save considerable timber, do they not?

MR. JENKINS: I don't know that they do. We never figure that we are saving any timber on the end of the log.

QUESTION: How often do you have to sharpen that saw?

MR. JENKINS: Oh, about as often as you would a chain saw.

QUESTION: How long would you say the chain would last—a day, a week or how long—before it would have to be resharp-ened or replaced?

MR. JENKINS: In felling timber you could probably run the saw all day long, but if you are bucking timber—that is what we call cutting the logs off—and if it happens to fall and gets a bunch of rocks into it, it might not last fifteen minutes.

FRED H. STAFFORD (Chapman & Dewey Lumber Co., Marked Tree, Ark.): How do you guard it?

MR. JENKINS: We have never had any trouble in that respect.

CHAIRMAN WILSON: The frame over which it runs is very substantial, I suppose?

MR. JENKINS: Well, there doesn't seem to be much danger in the use of this saw in that respect because we haven't had

any accidents reported from that particular hazard.

I would like to add this: We had a big camp in which there occurred a whole lot of head injuries. Out of 60 fatal accidents that we had in our woods operations in British Columbia, we had 50 fatal accidents that resulted in fractures of the skull. I am hoping that the *National Safety News* will publish a picture which shows 18 hats in one camp in logging work that are crushed in, each one of which might have been a fatal injury.

Twenty years ago when I advised the use of these hard hats in the mines of British Columbia, one of the Superintendents told me that he wouldn't let a man put one of these hard hats on, that he wouldn't think of asking anybody to do it; but today no man can ask him for a job unless he wears one of these hats.

CHAIRMAN WILSON: All right, now let's have the showing of the next picture.

(The talking film sponsored by the Western Pine Association was shown.)

CHAIRMAN WILSON: Before introducing the experts in our Panel Discussion, I would like to introduce Mr. John A. Dickinson, Secretary of Logging & Saw Mill Sectional Committee, National Bureau of Standards, Washington, D. C. I would like to have him say just a few words concerning the new code, because the code, I think, will answer a lot of these questions officially.

Comments on the Code

JOHN A. DICKINSON: Gentlemen, those of you who are at the pulp and paper end of the fence will probably remember that logging and the bringing of logs to the mill is referred to in the logging and saw mill code. Now that code was published back in 1923. At that time we thought we did a fairly complete job. Twice since then we have asked for criticism—whether it needed revision—and up until 1937 the answer was negative.

In the last few years in the Western pine forests in the mechanization of logging there has developed the use of tractors, of large truck units of about 50 or 60 ton capacity. Those are some trucks, mind you. And it is evident that we have to revise the section on logging very materially by adding several new chapters.

Our small tool section is also going to be amplified, and we are going to put in perhaps, if necessary, a section on the special handling of pulp wood from the woods to the mill.

One of the questions that came up for a vote yesterday was this: Shall we divorce the logging from the saw mill section of the code? The vote yesterday of the sectional committee was to this effect: we will publish separately two sections, one on logging and one on the milling operations, but we will also provide a combination bound volume in much the same way as certain other codes are handled, such as the A.S.M.E. boiler code, which takes in power boilers, miniatures in dry cleaning plants, locomotives, etc., which can be obtained in separate pamphlets or all together. If we get that flexibility it was the opinion that it would be more desirable to do that through one sectional committee rather than two, because the latest figures we have available show that about 50 per cent of the logging is done by companies which actually do the milling. It is about a fifty-fifty split between independent contract loggers and companies which log and mill their products.

However, I am not going to enter into a lengthy discussion of that topic because we are going to have a very interesting panel meeting here this afternoon. If any of you folks disagree with any of our conclusions or if you have any ideas to suggest, we would like to hear from you. We are going to split the thing up into sections. We are going to have a group up in New England, another group out on the West coast, another group in the Northern section, etc., and then we will form skeleton outlines of this new material and from that build the thing up. If you have any criticisms of our plan of procedure, if you have any suggestions to send in on the revision of the code, either as regards the logging or saw mill ends, we shall be very happy to receive them. You can address them either to me at the National Bureau of Standards or to Robert McA. Keown, Chief Engineer and Secretary of the Industrial Commission of Wisconsin.

CHAIRMAN WILSON: I will now briefly introduce to you the members of our panel, to whom questions on our active work operations and their hazards will be presented:

J. E. Cantin, Safety Director, Quebec North Shore Paper Company, Baie Comcau, Quebec, Canada.

Harris Flaherty, Field Officer, New Brunswick Accident Prevention Association, Dalhousie, New Brunswick, Canada.

F. H. Stafford, Safety Director, Chapman

and Dewey Lumber Company, Marked Tree, Ark.

G. R. Vaughan-Evans, Employment Supervisor, Anglo-Newfoundland Development Company, Ltd., Grand Falls, Newfoundland, Canada.

C. E. Wilds, Superintendent, Wood Operations, The Brown Paper Mill Company, Inc., Monroe, La.

Safety from Woods to Mill

Panel Discussion

CHAIRMAN WILSON: The first question is this: "Can we improve in any way on our camp facilities from a safety standpoint?" Which one of you gentlemen is the biggest camp operator?

C. E. WILDS: We have about 1,500 men in our camps and they cut nothing but pulp wood, of course, running from 9 to 12 inches through.

CHAIRMAN WILSON: The size of the cut doesn't make any difference, does it?

MR. WILDS: It makes a whole lot of difference in safety operations.

I think we can improve our camp facilities very much. To be perfectly frank with you, the pulp operations in the South follow a safety program only to a remote degree. After you get outside of the mills, why, there is nothing except the nigger, ax and saw and it is telling on our contractors. That is why I wanted to come here today and see if we couldn't get someone interested in our problems in the South. We have a safety director and he is very efficient in our plant, but when we get beyond the railroad yards of our plant, why, there is absolutely nothing doing. It is costing our contractors a good deal of money and, of course, that reflects back on our wood payroll.

CHAIRMAN WILSON: There is no question about that. Taking advantage of the Chairman's privilege, I might suggest that you get some definite legislation down there on safety codes pretty soon, because goodness knows you need them.

MR. WILDS: We sure do.

CHAIRMAN WILSON: The solution to safety in a great many places rests entirely on legislation and enforcement. It has taken us here in Illinois a good many years to get to the place where we now are, and we still have a long way to go; but we have a Department of Labor and this deputy who was here today with his movie film is an example of the present-day Department of Labor inspector in this state. They are trying to do an honest job. Still, we haven't a complete set of safety codes. As for you folks down there, you need it and need it very badly, not only for the logging industry but for almost everything else down there.

New Brunswick Regulations

HARRIS FLAHERTY: We have recently had some legislation passed in our province on the way in which a camp should be constructed and where it should be located in relation to sanitation and health. I quote:

"Camps should be located and constructed with due regard to sanitation and health, located at least 100 feet from any lake, stream or other body of water, with floors one foot from the ground which shall be properly drained and with smooth surface so as to permit of washing. The walls must be at least eight feet in height above the floor.

"As regards lighting, there shall be one square foot of window area for every 20 square feet of floor area. All windows shall be constructed so that they may be opened or closed at all times. Roof windows shall not be located over bunks.

"Ventilation—at least 300 cubic feet of air space for every occupant and a separate ventilating system in the roof.

"Bunks to be either single or double deck at least 18 inches above floor. Field beds are deemed unsanitary. Straw ticks or mattresses to be in good condition and blankets kept clean and sanitary.

"Wash room space where men may bathe and wash clothes. Provision made for exclusion of flies from dining room, kitchen or other places where food is stored, prepared or eaten.

"Latrines or privy pits shall be provided so as not to be a source of danger to any water supply. They should be at a reasonable distance from the camps and kept in sanitary condition."

Now, gentlemen, the camps in the section where I come from have been built any old way and there has been no legislation until recently as regards the manner in which they were to be built. However, through the legislation which we have been working on this past year, we hope to get better living quarters for the men working in our lumber camps.

MR. DICKINSON: Do you have any prohibition about the storing of dynamite in the bunk house? That sounds like a fool question, but I have seen many a bunk house in Wisconsin and Michigan where dynamite was kept under the shooter's bed to keep it from freezing. I have seen two or three tons of it stored away in a hut in the middle of a village, and the mill owners were very wrathful when I suggested to them that the stuff be moved out into a bulletproof magazine about a thousand feet away from the camp boundary. That was a common occurrence not many years ago.

MR. FLAHERTY: Dynamite in our camps is usually stored in a storage house outside the camp.

J. E. CANTIN: We employ about 5,000 men in the woods during the cutting season and so we have a good many camps. Up in Baie Comeau we had about 35 camps last year, contractors' camps. We have had regulations concerning the construction of lumber camps in the provinces of Quebec and Ontario for a number of years. The regulations are very strict as to the way we can build a camp—how far away from or close to the water it must be—as to the number of square feet per man that you can put up,

etc. I don't see, so far as Quebec is concerned and possibly Ontario, just how we can improve our camp facilities.

CHAIRMAN WILSON: I would like to say that about ten years ago every province in Canada took over the idea of compensation insurance. Don't let these Canadians get away with the idea that they have always had this type of camp, because they haven't. We were tickled to death to have the provinces take over some of the camps that we insured 100 miles from anywhere, and God knows they were plenty tough.

To our friend here from Louisiana I would like to say that there is your answer: legislation—definitely. They won't do it unless they are forced to do it. And the next job they have to do is to force these bohunks to use the facilities that they have had to provide for them.

Our second question is this: "What facilities can be provided for first aid (a) in the camp, (b) in the field, and (c) during transportation?" Who is a good first aid man in this group of experts? Who does a real job on that?

Facilities for First Aid

MR. CANTIN: We do not allow a contractor to go into the woods for the execution of his contract before he has met the safety director or the first aid man, at which time he is handed a first aid kit which we think covers the requirements. These first aid kits are supposed to cover the requirements for a camp of 25 men. If the camp has 50 or 75 men, we give him two kits or three kits, as the case may be.

The company gives him the kit free of charge, but he has to refill the kit as he goes along, as it is used up. We have a safety inspector, a safety director or a scaler who acts as an inspector, and as he goes around to the different camps, he checks on the safety supplies.

CHAIRMAN WILSON: Who renders first aid in these isolated locations?

MR. CANTIN: That's another question. Each contractor has to have a clerk, because we have a forestry commission which is very strict as to what we must do in the way of keeping proper records of the wages earned by the employees in the bush, whether cutting by cord or working by the day or the month.

For the last two years we have made it a rule that this clerk must be a first aid man. This rule has been a little hard to enforce because it is hard to get these clerks a week or two or three in advance in order to give them some first aid training. However, we have sold the contractor on the idea of having a good first aid man in his camp and so when seeking to hire a clerk he looks for a man who has had some first aid knowledge and experience.

The course which we give to our employees and to these clerks is the St. John's Ambulance Course, which is something like your Red Cross here. It takes about three weeks to give this course. As a matter of fact, there are four different courses to follow. They can take them inside of three years, after which time, if they pass their last course, they receive an instructor's certificate.

In my company we have about 55 or 60 first aid men who work in woods operations during the season and we have found that it was good money invested, because many times in previous years we had men with had wounds come in from the forest with a dirty old sock wrapped around it and that's how they were taken to the doctor. You all know what results from infection. We have succeeded in reducing the cost of our accidents because we have been able to give good first aid, and we are certainly sold on this idea of a good first aid man in every camp during the season.

We are working now on the problem of giving the man in the field a first aid kit. We already have two or three of the first aid companies interested in this idea. One thing we pointed out to these companies is that the first aid kits which you buy in a drug store usually have these straight-edged boxes, so they are actually selling you a hazard. We told them flatly that unless they supplied us with a rolled edge box, it was no dice, and they are working on the problem now.

MR. DICKINSON: I'll say "Amen" to that. I got myself a first aid kit, and when I came upon somebody who had been hurt in an automobile wreck and went to offer a bit of first aid, I cut my thumb when I tried to open the box.

MEMBER: One other thing you didn't mention, in connection with your first aid outfit; it seems to me that one of the most

important items to carry in it is a tourniquet.

MR. CANTIN: I am glad to say that we use the American Army tourniquet in every one of our boxes.

Safety Consciousness

CHAIRMAN WILSON: Let us go on to our next question: "Since as in other industries the majority of accidents in logging and lumbering have human failure as their basic cause, what steps can be taken to promote safety consciousness among the actual workers in these operations?" Would you like to say something about that, Mr. Stafford?

F. H. STAFFORD: Well, you can't put mechanical safeguards around the men in the field, and so you must depend entirely on the strength of supervision. Personally, I believe that that is about the only way, through a process of education and safety supervision, that you can make them safety conscious.

CHAIRMAN WILSON: Here is something which may interest those of you living in Arkansas and everywhere else. The Canal Zone today is working at least several thousand Jamaica negroes, who perhaps are of a much higher caliber than those fellows you have down in the hillbilly country. These men are being educated to do every form of work by visual education, by means of movies. They are trying to show them how to use a saw properly from underneath. They can't be taught to use a handsaw on the top of a stick; they saw only from underneath. But they are shown every operation, even as to how to use a shovel and how to use a hammer and how to set a board or make any kind of a trim. The contractors have taken along with them 10 key men, and these key men manage 700 or 800 or perhaps 1,000 of these negroes, and they are taught every job they are supposed to do by means of visual education. It seems to me that you folks down in Louisiana might very well take a leaf out of that book.

Educational Programs

MR. CANTIN: The suggestion is very good. I believe that what is needed in the pulp wood logging operation is an educational program; we have to educate the workmen on how to work safely. It is a big

job in our kind of operation because of the large turnover of workmen. We have these men for about four to five months in the year, and from one year to another I would say that about 75 per cent of them are new workmen who come in. You have no sooner started a program of education to teach these men how to work safely in the woods than you find that the operation is finished, so you have to begin all over again the following season doing the same thing.

With this in mind my company has published a monthly magazine, a little house organ, which is entirely for the woods operation end of our business. Our pulp and paper mill has nothing to do with it. Everything in this little magazine concerns the forest worker. We have a page for the cooks, we have a page for the teamsters, we have a page for the tractor operators, and we have two or three pages which contain items of local interest. We have three plants and this little magazine is sent to the workmen in all three. It is issued once a month.

We also have three or four pages showing these men how to do a certain job, how to avoid an accident when doing a certain task, and, incidentally, we have a page that deals with the subject of first aid. This year we published 2,000 copies of this magazine each month. We can't very well give a copy to each individual man but we try to give each camp a copy for every two men in that camp and they pass it around to one another.

I have found that this manner of educating the workmen is bearing fruit because they have a radio nowadays in the camps at night and lots of the men like to read. We supply them with newspapers as much as we can. This little magazine is interesting also because we try to make sketches to show in picture form what we are attempting to convey in words. We have found this to be a good way of educating the wood-cutter.

Another good way is by means of safety posters. I am sorry to say that I have yet to see a safety poster issued by any association which covers woods operations specifically. We are beginning to get some. Local safety associations have started to put them out, but they are somewhat limited, due to the fact that they are state-subsidized institutions. In Quebec it is called the Workmen's Compensation Commission; in On-

tario it is called the Workmen's Compensation Board. These associations depend for their activities on grants received from the Commission or the Board, and they haven't received enough money to go very far into the problem. That is why we are looking to the National Safety Council to help us in this work.

Promote the News Letter

CHAS. E. JONES: I think this man has brought up something that is close to me. We have a "News Letter" in the Wood Products Section that supposedly includes logging and lumbering, and I know that you fellows in the woods operations are let out of that thing because you don't use it.

In being an editor one must also be a sort of clearing house, and in answer to the gentleman's question regarding posters I would like to say that that can easily be arranged provided we know just what it is that we want. I can't sit here in Chicago and draw a picture of a fountain, for instance, and send it up to the north woods and expect those men up there to think of it as a safety poster. I have been requesting them to send us ideas and pictures for more than a year, and yet I still have to receive one. You probably have cameras in the woods. Why don't you work it out a little bit? Maybe the information you have is the very thing the other fellow wants, and we have to arrange some place where it can all be put together.

As regards this movie business, we all saw a swell movie here today sponsored by the Western Pine Association. I would like to give you my opinion of that movie, which is this: They are selling western pine wood and that's the object of their picture, and I know that that isn't what you fellows want. You can't take a picture like that up into your camps. What does it have to say? Nothing more nor less than the fact that western pine is a darn fine wood, and we probably all know that already.

If you are going to use any movies at all, then I believe that the thing for you to do is to let us know about it. We are not asking you to donate any film. We only want you to let us know that you have it. After that, by means of a little cooperation, we may be able to get some of these pictures in such a form that they will not only be shown here but may be loaned out. Let us

try and find pictures on logging operations that aren't trying to sell something besides this thing that we are all vitally interested in, namely, safety.

I am very much disturbed about this thing, fellows, from this angle: You elect a man to a job as a "News Letter" editor and you say, "Well, we hope he does a good job." How can he? You lick him at every turn he makes. My friend up there in the chair answered one of my letters last year and said, "Sure, I'll help you out," and then he sent me one little article and I sure put it in the "News Letter." After that he just forgot about its existence, it seems. I know Jim is a busy man, and every one of you fellows has had the same alibi.

Now I hope that some of you fellows will just pick out one of these subjects that are listed here on this sheet and write me your opinion on it in an article containing not more than fifty words. If we could only get ten such opinions on various topics and print those in the "News Letter," it would be most interesting and help a lot, because then you would all be able to sit down and digest that information at your leisure when you are not at these meetings.

MR. CANTIN: I agree one hundred per cent with what Mr. Jones has said about motion picture films. As a matter of fact, my company has been working on the project of making a film of woods operations, their hazards and how they can be avoided. We already have a scenario prepared.

CHAIRMAN WILSON: You will find that you will get a lot of support from the other associations if you will get something worth while.

MR. JONES: Why don't you put the Wood Products' "News Letter" on your mailing list?

MR. FLAHERTY: As regards this matter of education and the development of safety consciousness in the lumber woods, there is something we have got to put over and we are trying hard to put it over in order to cut down accidents.

You not only have to talk to the men but you also have to get the foremen safety-minded. The companies must get after the foremen and see that they go around to the men so that they can keep after them and see that they are doing the work safely.

MEMBER: Who reads those magazines

you put out? After all, some of these negroes down South can't read.

MR. CANTIN: It just happens that up our way the workmen can read them. There is no fancy stuff in them. They are written in the language which these men use when they speak. Whenever they use any word incorrectly or whenever they use a slang word, we try to educate them by putting the correct usage or the correct spelling of the word in brackets.

MEMBER: Would it be possible to train all your men in first aid, do you think?

CHAIRMAN WILSON: That is a difficult problem, because of the length of time required in which to give a man an intelligent first aid course. Take the case of the Western Electric Company out here at Hawthorne, for example, where they taught something like 4,800 men, all of them key men, over a period of one year. Then the following year they taught the group of men second in command, so that in the course of the last few years they have probably trained about 5,000 men who are capable of being first aid instructors, all of whom they now have on their working staff. But it's just wonderful, the reaction which some of these fellows receive; the minute they get into a first aid training school or class, because they immediately become conscious of safety procedures.

O. C. BOILEAU (R C A Manufacturing Co., Camden, N. J.): What we did was to start a class of about 30 fellows, giving them 100 hours of training. That included the standard Red Cross course of 20 hours, and an advanced course of 10 hours, and the standard instructor's course of 37 hours with a little thrown in for good measure. Then we broke them down and gave each of those instructors a certain group of men to teach. Thus far we have put through about 1,000 people, and the same sort of thing is spreading all over our local county.

Mechanization Problems

CHAIRMAN WILSON: All right, let's go on with the next question: "Has the mechanization of woods operation any effect on accident experience? If favorable effect has been noticeable, how far can mechanization be efficiently carried?"

S. W. HOMAN (U. S. Labor Dept., Washington, D. C.): We have just com-

pleted a study of the accident experience in various parts of the country. One of the things we wanted to find out also was the accident experience in those sections that are highly mechanized compared to the accident experience in those sections where mechanization hasn't been carried quite so far.

CHAIRMAN WILSON: What was the result of your findings? Has it increased or decreased?

MR. HOMAN: It has increased materially. In the Washington and California areas where they have a great deal of mechanization, both their frequency and severity rates were higher than they were in the South; and in the South they were somewhat higher than were those in the central section of the country, which included such states as Michigan and Wisconsin.

CHAIRMAN WILSON: What is the answer? Selection and training and supervision?

MR. HOMAN: I don't think so. I think more than anything else this mechanization has increased so rapidly, and the type of machines that they use are so powerful, that it has simply gone ahead a great deal more rapidly than any safety program of training which should have accompanied it.

CHAIRMAN WILSON: I think you have to select the men who are going to handle any kind of machinery. Take this long chain saw, for example, which we saw in the picture—you certainly must have a properly selected, properly trained, properly supervised crew to handle that sort of equipment.

M. C. GOODSPEED (General Electric Co., Erie, Pa.): I would like to ask this question: You compared the mechanization of the West with that of the South and with that of the central section. Did you compare the mechanization of the West with the hand operators of the West and the mechanization of the South with the hand operators of the South, because the products are so different that you can't even compare the two industries?

MR. HOMAN: The answer to that, so far as we are concerned, is no. We base this entirely on getting together as large groups as possible. In other words, we were not doing this for individual companies. We were making comparisons of a section where a certain type of logging was being carried on with another section. We purposely didn't

want to bring in the experience of any individual company. This study was not based, I believe, on pulp wood. Pulp wood was excluded. It was only based on commercial logging.

CHAIRMAN WILSON: Have any of you gentlemen ever had any actual experience in a relative measure between mechanized and hand labor?

MR. FLAHERTY: I have found that in the mechanization of woods operations, particularly in the sawmill operation of handling of heavy hardwood, almost every year there has been something new going on. All sorts of tractors and trucks have been operated night and day in order to get lumber out of the woods in as short a time as possible.

CHAIRMAN WILSON: And that has increased accidents.

MR. FLAHERTY: There have been many more severe accidents as a result of the mechanization of woods operations.

CHAIRMAN WILSON: A lot of the men have been killed as a result of such mechanization, haven't they?

MR. FLAHERTY: Yes, especially in the case of those companies handling heavy lumber, such as yellow birch. Take some fellow who perhaps has only driven a truck around a farm or a bit of freight on the highway and put him on a lumber truck, expecting him to propel the vehicle through the woods on poorly constructed roads with huge loads of heavy timber. Of course a lot of accidents are going to take place as a result of that practice.

CHAIRMAN WILSON: All right, let's go ahead to the next question: "Is it ever safe for one man to work alone in the woods?"

The answer is definitely no. I don't think we need to discuss that at all. That is one of the things we must do in this country: we must have some regulations prohibiting that from ever happening. I'm sure we all agree on that.

Here's the next question: "Since the accident rate for large operations seems to be lower than that for smaller ones, what measures could be taken to control the operations of smaller operators for the benefit of all?"

Every safety man here knows that that is a problem today not in the paper and pulp woods operations alone or in any other one

particular operation; it is a universal problem. Safety for the small operator is the big problem before us today.

Large or Small Operations

MR. HOMAN: Mr. Chairman, may I interrupt for a moment? On the basis of this study that we have just made, strange as it may seem, the larger operators have had considerably the worse safety record.

CHAIRMAN WILSON: You haven't got the story correct. You are not getting the reports from these fellows who are gypping you. The contract cutter, whether he is cutting logs or pulp wood or what not—running sawmills in Minnesota or Wisconsin or down in Arkansas—just doesn't furnish you with the correct figures.

MR. HOMAN: I agree with what you say. It was always my impression, too, that the small operator should expect to have the worst experience. But strange as it may seem, so far as we have gone with this thing, it seems to be just the reverse of that. The very large operator employing 1,000 or more men has had a worse experience than the operator employing, say, 500 men; and as you come down the line to the small operator employing up to 25 persons, you find that the latter's experience is still better.

Now, there is no question about the fact that in taking a national sample you don't get the small fellows at all, but you do get practically all the large ones and practically all the medium-sized ones.

CHAIRMAN WILSON: You also get an accident report from the first aid room or from the first aid man in the camp. You may get dressing reports in many of the states which state that these are not accidents, but I say that they are. When you get these reports, the higher degree of intelligence that is displayed in their handling, the more accidents actually have taken place. I say that your picture is somewhat clouded.

MR. HOMAN: We could get a great deal better and more accurate reports than those we do get. I stated a little while ago that the higher the mechanization, the greater the accident rate. Maybe that is reflected over into the fact that the larger the company, in all probability the greater its mechanization has been.

MR. DICKINSON: Mr. Chairman, I

think I have a little sidelight on something that has been brought out here. The gentleman a few moments ago said something about the small contract logger. In many cases it is made up of a partnership of two or three or maybe as many as twenty-five men, all of whom share equally in the profits, if there are any. Because they are all owners of the business, they do not come under the jurisdiction of the compensation law, and if one of them is hurt or killed in the woods, it's just too bad. He is a partner and he is just out.

Another point is that that type of individual probably is a man who has had 10 or 15 years of woods experience, and he has saved up a little stake, and he gets together with Harry and Bill and they start a little logging cooperative, and they probably are the pick of the woodsmen. That's just another slant on the point that was mentioned.

CHAIRMAN WILSON: Would you be good enough to take the chair for a few minutes, Mr. Dickinson?

(Mr. Dickinson took the chair.)

Felling and Cleaning

CHAIRMAN DICKINSON: Our next question comes under the heading of felling and cleaning: "What are the greatest hazards involved in felling and what means can be taken to control them?" Would you like to say anything on that, Mr. Vaughan-Evans?

G. R. VAUGHAN-EVANS: We don't have a great number of hazards in connection with felling. I would rather "pass the buck" on to somebody else who can probably answer that question better than I can.

MR. FLAHERTY: Our chief hazards, as I see them, in felling operations are to be found in old stumps, in limbs falling down and cracking the men on the back of the head or on the shoulders, and in kickbacks of trees over stumps. The only thing we can do is to have our foremen instruct their men as they go into the woods to watch out for those hazards. Undercutting and clearing the ground sometimes will have a great deal to do with offsetting those hazards.

CHAIRMAN DICKINSON: There is one other angle that hasn't been mentioned in addition to your kickbacks, I had a good deal of experience in the insurance field many years ago. We had a lot of accidents

of what we called the "bear-trap" type wherein a tree after being cut will hang at a 45 or 60 degree angle on a couple of small trees. What are you going to do in such cases? How are you going to get the tree down safely besides not spoiling the supporting trees? That, of course, is a very hazardous operation. It is more or less akin to the rock pillars in a coal mine.

MEMBER: I have worked in the woods quite a bit myself and I know that the best of sawyers will hang up a tree and oftentimes they have gotten out by having another tree thrown across it. But if you are careful in seeing that your road is fairly clear so that they can make a quick getaway when the tree begins to fall, there won't be any chance of getting caught in it.

CHAIRMAN DICKINSON: It would seem where you have tractors and trucks that a cable or chain around your small tree could straighten that situation out.

MR. STAFFORD: We have instructions to the effect that the workmen should not cut down trees when there is a high wind.

CHAIRMAN DICKINSON: There, again, your supervision is responsible. When you have men working on a contract cord basis, they are probably going to keep on cutting and take chances under unfavorable conditions sometimes.

Our next question is this: "Is any preparation of the ground feasible?"

MR. CANTIN: In our kind of an operation I don't believe we can prepare the ground. We are cutting in a very hilly country and the wood is small, running on an average of about 20 cords to the acre. I never found it practicable to prepare the ground in our kind of business.

CHAIRMAN DICKINSON: I shall read these questions through and then if anybody wants to discuss any particular one he can do so. "What precautions should be taken in regard to the tools used in felling?" That is one thing which the logging committee is definitely going to cover. We have appointed a committee on small-hand tools, and we hope to have the forest service and three or four sectional groups figure out some definite operating rules on the handling, carrying, sharpening and using of tools which the men handle.

Question: "Can any considerable amount of clearing or cleaning be done before felling?" That is tied in with the question hav-

ing to do with the preparation of the ground. The answer seems to be no except on the big stumps.

Question: "Can any safety training methods be used to promote safe felling? If so, what?" Does anybody want to discuss that?

R. W. LAUGHLIN (Liberty Mutual Insurance Co., Portland, Me.): One thing has been done that would line up with what has been done by the gentleman from Ontario and Quebec. We have made up some booklets with pictures on every operation in the woods which we distribute to the men in the camps. They contain illustrations of typical jobs in the woods and can be studied by the men.

CHAIRMAN DICKINSON: Will you send some of those copies to me at the National Bureau of Standards or to the State Industrial Commission at Madison, Wisconsin?

MR. LAUGHLIN: I shall be glad to do so.

CHAIRMAN DICKINSON: Our next subdivision has to do with swamping. The first question is this: "What types of equipment can be used for safe swamping from the stump to the loading point?" Here, again, you could write a book on this subject, quite obviously.

Question: "What is the general opinion of the use of 'Go Devils' or sleds supporting one end of the sticks?" Well, that is a common method of logging up in the north woods of Michigan and Wisconsin and elsewhere in this Midwestern area, and it has been in use for a hundred years or more.

Question No. 3: "Should any attempt at cutting sticks to uniform lengths be made before swamping?" Well, that again is a function of the terrain and depends on your method of handling logs or the purpose for which you are going to use those logs.

Our next group of questions comes under the heading of loading, transportation and unloading. Question No. 1 is this: "What is the most efficient size range both as to diameter and length for safe handling of pulp from woods to mill?"

MR. STAFFORD: Mr. Chairman, we cut a 12 or 14-foot log in preference to a 16-foot with two knots; if the 12 and 14 is clear, for the lumber value.

CHAIRMAN DICKINSON: On the

other hand, your cypress is cut entirely full log because they float them on rafts and boats and it is much easier to handle them in the mill in full lengths.

Question: "Is there any particular type of sling which particularly lends itself to safe handling with cranes?"

MR. FLAHERTY: The safest sling I have seen is a double steel chain with a ring at each end and a bar between the chains.

Safety Shoes

CHAIRMAN DICKINSON: Question: "What methods can be used to promote the use of safety shoes by wood handlers?" Does anybody here use special shoes?

MR. CANTIN: We have spent a good deal of money trying to get our workmen in the woods to use safety shoes. We had a boot made with a safety cap and the best calf leather which would sell ordinarily at retail for \$15 or \$16, and we offered this shoe to the workmen at cost price, which was \$7.10. Well, I think I still have 25 pairs of them left, having sold the balance to hunters. These woodsmen don't want them, they don't like them. They prefer a boot or this rubber boot with a leather top.

Now I found that one of the exhibitors here has a rubber boot with a safety toe cap and in the soles he has some strips of metal, and I was very much interested in it because I think this may be the solution of our problem, as it is the kind of a boot that the men up our way want. If we can get them into Canada, the men will buy them because they are buying the other kind.

MR. FLAHERTY: I have asked the men why they didn't use the safety shoes and their answer was that they found them too cold, particularly up in the north section where I come from.

CHAIRMAN DICKINSON: Of course, the answer to that is to get them two sizes bigger and wear two pairs of wool socks.

MR. CHANT: Have you had any experience with gum rubber boots with hard toe caps?

CHAIRMAN DICKINSON: That is the common type used now.

MR. CHANT: What sort of a boot were you talking about, Mr. Cantin?

MR. CANTIN: The shoe I had in mind has a rubber sole on it. I have had a manufacturer in Montreal make me a few pairs

of those and put a safety toe cap on them.

MR. CHANT: A steel toe cap? Have you had any experience with the regular rubber footwear that had a hard rubber toe cap in it?

MR. CANTIN: No, I haven't.

MR. CHANT: Those are made in Canada. They only cost 25 cents a pair more than the regular ones.

CHAIRMAN DICKINSON: Question: "Is there any particular type of toggle which reduces the hazard in releasing a load?" One of the most hazardous occupations in the whole field is that of unloading logs, whether they are heavy logs or medium-weight saw logs or pulp wood. There are more men hurt in that type of occupation than almost any other. As far as your saw-mill accident statistics are concerned, I know that 20 years ago that was the primary cause of serious accidents, the highest rate.

On the West coast, strangely enough, you didn't have so much trouble because your logs were so big that they had to be unloaded by power. In the East to unload cars they would cut out the wires and chop out the stakes, and then take a peavey and roll off the logs which didn't roll off the flat car when the stakes were chopped.

On the West coast they use mechanical unloaders which consist either of a jib crane arrangement over a poke or pusher, which is a parallel bar mounted on very heavy timbers, perhaps 18 inches square, used as pivots, and they simply place those alongside a car, release the chains or stakes, and start the locomotive, and as it pulls this parallel bar sweeps across the car and pushes the load off. I know of only one mill in the East where they have put in equipment of a similar type.

Safe Loading Methods

Question: "What is the safest method of loading on (a) wagons or sleds? (b) trucks? (c) railroad cars? and (d) ships?" As for wagons and sleds, the usual method is to establish a woods deck about the height of your body, bring your wagon or sled up to it, and roll the logs onto it with a peavey or jib pole.

MR. CANTIN: As far as pulp wood is concerned, they are thrown on to the wagon or sled by hand.

CHAIRMAN DICKINSON: When loading on railroad cars, of course, that is generally a power operation, although not necessarily so with small logs. Has anybody any ideas to offer on how to cut down your loading hazards on railroad cars? The conventional method for years has been to load from one deck about six inches higher than your car platform.

How about ships? Quite a lot of bad accidents have happened in loading logs onto ships. In many cases the pulp wood is rafted down to the big booms and then it is picked up with a conveyor and dumped into the hold, after which the crew down there picks the logs up and stacks the cord wood as the stuff comes down. Apparently that is a rather hazardous undertaking.

MR. CANTIN: There is some hazard in loading a ship but I think we have controlled that very well because we don't allow anyone on the ship when the wood is coming down from the chute into the hold.

They work in a second hold a little farther on and then they move in when there is enough wood dropped down into the first hold and they stack the wood. The accidents which we have had are mainly due to the pickaroons when the pick slips along the log and the man usually catches it on the ankle or on the calf of his leg. If we could find a leg guard and an ankle guard that would be practical, that would answer the problem, but we haven't got any so far.

CHAIRMAN DICKINSON: Did you ever try a football shin guard?

MR. CANTIN: No, it's too stiff.

CHAIRMAN DICKINSON: Question: "Referring back to the question on mechanization, what mechanical loading equipment is available which can be efficiently carried into the woods?" Of course, we saw pictures today of a truck-type crane which was loading a truck in the woods and that is as portable as the truck it feeds.

THURSDAY AFTERNOON SESSION

October 10, 1940

CHAIRMAN CHANT: The first thing on our program this afternoon will be the presentation of the contest awards by Mr. J. E. Long, Superintendent of Safety, The

Delaware & Hudson Railroad Corp., Albany, New York, and Past President of the National Safety Council.

Presentation of National Safety Council Awards in the Paper and Pulp Section Safety Contest

Enrollment in the 1939-40 Paper Industry Annual Safety Contest set a new high mark. 146 paper and pulp mill units and 29 paper and board re-manufacturing plants—a total of 175 contestants, employing 77,128 employees, working 164,620,962 man-hours—reported a total of 2,197 lost-time injuries in the 12 months, July 1, 1939 to June 30, 1940.

Frequency rates of identical contestants averaged 2 per cent above the rates in the 1938-39 competition. Rates increased 2 per cent in paper and pulp mills and 6 per cent in re-manufacturing plants. Two groups, C and D, consisting of the smaller paper and

pulp mills, were successful in improving their rates.

Large mills had the lowest frequency rates, averaging 11.52 in Group A and 13.43 in Group B. There were 10 perfect scores in all; one in Group C, eight in Group D, and one in the Re-manufacturing Division.

It is with great pleasure that I present, in the name of the National Safety Council, the following awards of bronze trophies to the winner of first place in each division of the contest, and Certificates of Merit to those companies which placed second and third in each division:

Division 1 Group A

1. Price Brothers & Company Limited, Kenogami Paper Mills, 2,258,785 hours, 1 injury.

2. Anglo-Canadian Pulp & Paper Mills, Ltd., Limoiloi, Quebec, Canada, 1,712,994 hours, 1 injury.

3. Hollingsworth & Whitney Company, Waterville, Maine, 3,365,605 hours, 9 injuries.

Group B

1. Hoberg Paper Mills, Inc., Division "A," Green Bay, Wis., 1,008,543 hours, 1 injury.

2. St. Croix Paper Company, Woodland, Maine, 846,377 hours, 1 injury.

3. P. H. Glatfelter Co., Spring Grove, Pa., 1,079,752 hours, 2 injuries.

Group C

1. Strathmore Paper Company, Woronoco Mills, 538,231 hours, 0 injury.

2. Southern Kraft Corp., Continental Div., York Haven, Pa., 691,229 hours, 1 injury.

3. Escanaba Paper Company, Escanaba, Mich., 706,464 hours, 2 injuries.

Group D

1. Sylva Paperboard Company, Sylva, N. C., 337,656 hours, 0 injury.

1. Spaulding Fibre Company, Inc., Milton, N. H., 190,367 hours, 0 injury.

1. United States Gypsum Company, North Kansas City, Mo., 183,742 hours, 0 injury.

1. International Paper Co., Livermore Falls, Me., 170,199 hours, 0 injury.

1. The Mead Corporation, Nashville, Tenn., 169,686 hours, 0 injury.

1. Hollingsworth & Whitney Company, Madison, Me., 128,572 hours, 0 injury.

1. International Paper Co., Riley, Me., 116,074 hours, 0 injury.

1. Spaulding Fibre Company, Inc., Hayes, N. H., 82,061 hours, 0 injury.

Division II

1. Bay West Paper Co., Green Bay, Wis., 97,663 hours, 0 injury.

2. Gaylord Container Corporation, St. Louis Container Plant, 1,038,307 hours, 2 injuries.

3. Kimberly-Clark Corporation, Atlas Mill, 329,565 hours, 1 injury.

CHAIRMAN CHANT: There remains the presentation of one more trophy award, and it is unnecessary for me to tell you

what it is. I shall call upon our good friend Scott Dowd to again deal with that award.

Presentation of the Edward Benton Fritz Memorial Trophy

A. SCOTT DOWD (President and General Manager, Fritz Publications, Inc., Chicago): The close of this sixteenth national competition in safety among members of the Paper and Pulp Section, National Safety Council, again brings the associates of Edward Benton Fritz (affectionately known to us as "Dad") to this annual meeting for the purpose of awarding the major trophy of this contest.

"Dad," as the most of you know, was a pioneer of safety in the pulp and paper mills of North America. Through the medium of his magazine, *The Paper Industry and Paper World*, and the inauguration and sponsorship of these annual contests, his efforts were expressed in promoting safety in this industry.

Since his passing in the spring of 1939, the staff of Fritz Publications, Inc., Chi-

cago, has conceived the idea of perpetuating his memory in this safety work by naming our annual award the "Edward Benton Fritz Memorial Trophy," bearing his likeness.

It was our pleasure to make the first award of this type at the Congress of last year.

Now, we have the honor again to name the winner, which in the opinion of the judges provided for in our rules, has established the best record based upon frequency, man-hours worked, physical conditions, and other contributing factors.

We were honored last year in having with us the treasurer of our company, the widow of our founder, our mother, Mrs. Edward B. Fritz. She presented the trophy with that loving thought that is the spirit in which it is given by our company.

She is honoring us again in the making of this award to the mill member which I shall now announce is the Strathmore Paper Company, Woronoco, Mass., the winner of Group C with the highest number of

man-hours without a lost-time accident in the duration of the contest.

Friends, it is an honor, indeed, for me to present Mrs. Fritz.

MRS. EDWARD BENTON FRITZ: Gentlemen and Ladies: It is with profound pleasure and with profound gratitude that I greet you today. I am grateful because of the great progress that all of you have made in safety; and I am glad that I know you are not working for a trophy, that you are working for something to hang on your wall so that you may later point to it with pride and say, "We did the best job of all." You have all done this out of the goodness of your hearts for the safety of life and limb, for the safety of men who would be injured in accidents and perhaps be crippled for the remainder of their lives. You have done all this because you want to be able to lie down at night with a good clear conscience, feeling that you have done the best you could in your mill today for the safety of humanity.

It is for that reason that I am grateful today, and I am so happy to be able to pre-

sent this trophy to Mr. Charles E. Higgins of the Strathmore Paper Company.

CHARLES E. HIGGINS (Assistant to Treasurer, Strathmore Paper Co., Woronoco, Mass.): Mrs. Fritz, it is indeed a great pleasure for me to accept this trophy, especially from your hands, in memory of your husband, Edward Benton Fritz, and on behalf of the employees and the management of the Strathmore Paper Company we thank you sincerely.

We want you to know that when we get back home, this trophy will occupy a position of prominence in our mills as a continuous inspiration to those employees who established this type of safety record.

CHAIRMAN CHANT: May I thank you, too, Mrs. Fritz, and attempt to express to you the pleasure that all of us have had today in your company.

(A brief recess was taken).

CHAIRMAN CHANT: Gentlemen, we will get on with the rest of our program.

I am going to introduce to you now R. W. Laughlin, Safety Engineer, Liberty Mutual Insurance Company, Portland, Maine. Mr. Laughlin has very kindly consented to give us a talk and a demonstration this afternoon. Some of you may have had an opportunity of seeing and listening

to this "act" before. I have not seen it but from what I have heard about it I am looking forward to it with a great deal of anticipation.

(Mr. R. W. Laughlin then gave a demonstration lecture which he called "A Bag of Safety Tricks," which, unfortunately, cannot be reproduced in these records because it was chiefly a demonstration by pantomime.)

General Round Table

CHAIRMAN CHANT: According to the program, the next item consists of remarks by the General Chairman Elect. With your permission I am going to skip that. However, I do want to say that I deeply and sincerely appreciate the confidence which you have shown by giving me another chance to make good as your General Chairman. I shall certainly try to the utmost of my ability to work in your interest and in the interest of the general cause of safety.

I want to thank you all for the cooperation which I have received from you during the last term and I hope to deserve a continuation of it during the ensuing twelve months.

Now, we have on our program a round table discussion of certain subjects, but we have no table and it isn't round. With those slight differences, I think we can proceed with our round table discussion. The first subject listed is that of "Safety Contests in the Plant." I think that is intended to

mean interdepartmental contests or general contests as applied to the one plant rather than as between groups or numbers of plants. Is there any discussion to be had on that subject at this time?

Plant Safety Contests

ERNEST AUGUSTUS (Mead Paper Company, Chillicothe, O.): Mr. Chairman, I believe I have mentioned at various times something about a plan that we have in our group of mills. First of all, we have an interplant contest based somewhat on the same set of rules as those used in our paper industry contests. We give a trophy at the end of the year to that plant which has made the lowest and best safety record based on the combination of frequency and severity.

Some of you gentlemen may have been at the round table discussion meeting this morning and, if so, you will recall having heard some argument as to how important severity is. I maintain that severity should be taken into consideration when determining the winner of any kind of a contest. And so we give frequency rating 8 points and severity 2 points.

Every three months, in addition to the big bronze plaque awarded at the end of the year, we award a quarterly first place banner and a quarterly second place banner. It is based on the same system of scoring but it creates a little added incentive if every three months somebody has a chance to win something, even though they may not have a chance to win the big prize at the end of the year.

I have some figures which prove that the contest idea is all right. Over a period of 6 years, among 11 plants in our group that were participating in these contests, we showed an 11 per cent reduction last year over the previous five-year average in the number of accidents—a 24 per cent reduction in time lost—a 21 per cent reduction in frequency—a 33 per cent reduction in severity—and a 30 per cent reduction in compensation, or a reduction in cost per \$100 payroll of 26 per cent.

I can show you some of the results that have been obtained in individual plants. For instance, in our plant at Chillicothe last year we showed a reduction of 65 per cent in the number of accidents and 93 per cent in

amount of time lost, a 68 per cent reduction of frequency, a 93 per cent reduction in severity and a 66 per cent reduction in costs, or a 70 per cent reduction in cost per \$100 payroll. I am absolutely certain that a large part of that reduction was due to the fact that our boys are trying so strenuously to get one of these bronze plaques. We have never won one of them yet, whereas some of the other mills have won them several times, and our boys want one of those plaques.

Now, in addition to this interplant contest, in our plant we have a safety sweep-stake plan. Every month on the pay day prior to the beginning of the month we give to every hourly-paid employee, at the pay office window, a card which has a serial number printed at the top. On this card the worker writes his name and department, then tears the stub off, puts it in a box, and later these stubs are collected. He must retain his portion of the card if he wishes to win a prize.

At the end of the month all employees in departments in which no lost-time accidents have occurred during that period are eligible to win one of five cash awards if his number should happen to be pulled out of the box. However, if in any department there has been a lost-time accident during the month everybody in that department is disqualified. The first prize is \$25, the second, \$20, the third, \$15, the fourth, \$10 and the fifth, \$5.00, the total of the five prizes amounting to \$75.

Mind you, the departments really aren't competing against each other; they are simply trying to win these prizes one from another. As a result of this system, every man is watching every other man in his department. I have seen this happen: Some fellow will come along and put a ladder up against a wall and if he has it out a little further than it should be, somebody else in his department will come along and say to him, "Say, you big so-and-so, what's the matter with you? Do you want to keep me from getting that \$25 next month? I intend to win that \$25, so you had better put that ladder up at the proper angle." Each fellow is looking out for the other and, incidentally, he is looking out for his own interest, of course, because each man feels that he is going to be the lucky winner.

At the end of the year we put \$175 into

a big pot and all these departments are given an opportunity, regardless of whether they have had an accident or not, to take these numbers for the last month and draw them out, and somebody wins \$100, another person \$50 and another \$25. We did that for the boys in some departments who perhaps month after month had a bad record and so began to feel that they just didn't have a chance to ever win any of that money.

In addition to that, every three months we have a drawing for the foremen of these departments on exactly the same basis, where we give prizes of \$15, \$10 and \$5, and every foreman is eligible in whose department no accidents have occurred during that three-month period. If he has had an accident in his department, then he and all the other foremen in that department are out automatically; they can't draw a prize.

In my opinion, it is as a result of these two things more than anything else that our accident record for the last five or six years has consistently shown an improvement, and we have gotten the boys interested so that they are working for themselves, they are working for each other, and the plants are competing with each other in trying to develop a better safety record. And we send out every month to these mills a list of figures which are posted on the bulletin board showing just where each one stands, also containing a short description of each accident that has been reported—who is to blame, how much time is lost, what it costs, etc.

CHAIRMAN CHANT: Will that make us eligible for prizes next month?

MR. AUGUSTUS: There is one additional thing that I might say. When we first started a year ago we gave about 40 prizes. There was the same amount of money involved but we had a \$15 prize, a \$10 prize, fifteen \$2 prizes and thirty \$1 prizes, so that more people got some of the money. But when we put the matter up to the employees themselves, they said that they would rather have fewer prizes and more money for each prize.

CHAIRMAN CHANT: There are a number of variations in use on that basic sweepstake idea. Mr. Long of the Bay West Paper Company of Green Bay, Wisconsin described to us on Monday a somewhat similar type of sweepstake. I personally

know of a number of others in use in different plants, just variations on the basic idea.

I would like to ask Mr. Augustus, as regards this matter of data to be put up on the bulletin board in the different plants, whether such information is only posted each month or whether something is put up immediately following an accident in one of the departments, telling just what happened?

MR. AUGUSTUS: As soon as an accident occurs, an investigation is made and the findings posted on a bulletin board by the safety man in that particular plant.

MEMBER: Do you mention the man's name and present all the details of the case?

MR. AUGUSTUS: Absolutely. We give the man's name and if the supervision was to blame for the accident, we say so. We give the whole story and we have never had any kickbacks from it yet.

SAME MEMBER: I have been toying with that idea and was wondering how many kickbacks one would get. In addition to the posting of that information, have you ever tried posting photographs showing the unsafe condition or possibly the gruesome aftermath?

CHARLES H. ABEL (Kimberly Clark Corp., Appleton, Wisconsin): Kimberly Clark for the past few years has taken pictures immediately after the occurrence of the accident and in some cases has gone through the actual procedure of showing how the accident occurred—making a series of pictures and displaying them on the bulletin board with a full report.

SAME MEMBER: Any kickbacks?

MR. ABEL: No, they were very well received. In fact, I think the reception on that type of material has proved much better than on just a plain mimeographed report.

CHAIRMAN CHANT: I call to mind a certain plant where this sweepstake idea has recently been applied. Previously they had quite an elaborate setup wherein a rather large safety committee always made a very thorough investigation of every lost-time accident, and the procedure took up quite a lot of time. They used to arrive at some very laudable conclusions and did a thorough job of investigation, the completed report sometimes extending over on

the second page of the bulletin that went up on the board.

However, since they have adopted the sweepstake idea they have changed that method of publicity with good results. They now put up on the board, if possible, within 24 hours of the occurrence of a lost-time accident, a notification of that accident and this automatically wipes that particular department out of being a participant in the sweepstake for that month. They put up just the bare facts of what happened, without taking the trouble immediately to find out who was responsible for it and all the details involved. Merely a note saying, "Sorry, boys, but no sweepstake for your department this month. John Jones tripped over a truck handle and injured himself." That may be a thought which some of you may want to use.

MR. CREIG: We are wondering whether that tends to create a let-down for the balance of the month for that particular department? From what Mr. Augustus has said it seems that the reverse of that is true, namely, that there was no let down in his plant.

CHAIRMAN CHANT: There is a way around that. In the plant I have just mentioned they do not use a calendar month basis so far as the sweepstake is concerned. Each department will have a sweepstake every time they go along for 30 days without a lost-time accident. So if they have an accident today, they start their thirty-day period over again tomorrow. Whenever they have hit thirty days clear, then they have a sweepstake. There is no period during which they can say, "Oh, well, we're washed up anyway, so what's the use of trying to be so careful?"

MR. CRIEG: Mr. Augustus, how many men do you have in your mill?

MR. AUGUSTUS: We have about 1,250 hourly paid men who get these tickets. Incidentally, I might say that those departments are divided into 21 different groups. You may have departments of 7 or 8 men and we put several of those departments together and call them one group.

PHIL STARBUCK (Meredith Publishing Co., Des Moines, Ia.): I have a bit of a problem here. We wanted to start a contest but we have a great difference in the probability of accidents in our various departments. I wonder if anybody has come up

against that and, if so, how they overcame it?

MR. AUGUSTUS: We had that argument at one time and we still have it once in a while, but I am convinced that it is just something which we think is true but which really isn't. For instance, when we first started out with our paper machines, the men who worked them said, "Why, we can't get by for even a single month without having an accident, let alone for a longer period of time." Well, we have now 11 paper machines—some of them are pretty big and quite fast—and yet the men haven't had an accident on those paper machines for more than a year; yet they used to have one about every two or three weeks. It has been proved that working on those machines is not any more hazardous than working elsewhere if you have a group of safety-minded men in there.

For example, we have 27 men in our electrical department, and last August we had a record of going along for fifteen years in that department without a single lost-time accident; and yet your maintenance and electrical departments are normally considered very hazardous departments. It so happens, however, that we have a foreman in there who is safety-minded, and he has simply trained his men in such a manner that they just don't have any accidents. We have had more accidents in our storage department than our electrical department has ever had.

R. W. CROUCHER (Minnesota & Ontario Paper Co.): Mr. Augustus, did you mean to say that if your one plant goes along without a lost-time accident you pay out \$1,200?

MR. AUGUSTUS: No, no, we pay \$75 per month in this one plant of ours at Chillicothe.

There is one thing I would like to mention. Here is something that a great many of our employees prize very highly (*holds up sample certificate*), a certificate that costs us less than a penny apiece to print which says that such-and-such a person of a division, in recognition of a 100 per cent safety record during a period of five years, is awarded this certificate. On the bottom it bears the signatures of the president of our company, of our division manager, and of the superintendent of that particular plant at which the man is employed.

At the end of five years the worker receives that type of certificate, which comes in a frame. At the end of ten years he receives a gold certificate like this. (*Shows sample.*) At the end of fifteen years he receives still another type of certificate. You can go into the home of any one of these employees who has received such an award (and I have done so many times) and you will find that little frame hanging up on the front room wall in a spot where everybody who comes in can see it. Also, I know of a number of instances where employees who have left our company in order to apply for a job elsewhere have taken that certificate along with them as a means of convincing the employment manager that they were good, safe workmen so that they might more easily get the job.

W. S. BREWSTER (Masonite Corp., Laurel, Mississippi): Sometime ago we tried to get a little competition among our foremen. Naturally, the hazards are different all over the mill. Some foremen have many men and others not so many men. Finally I arrived at a system something like this: I got the foremen divided into groups; in other words, a foreman with 50 men and over, a foreman with 25 to 50 men, and a foreman with 10 men and under.

Here is the way I count the accidents: I count each minor accident one point, each submajor accident 9 points, and each major accident 25 points. That is the ratio. At the end of the first week, let us say, if a foreman has a submajor and a minor accident in his department, that is 10 points against his department, and I divide that by the number of men he has working under him. At the end of the second week, if he has not had any more accidents, then I divide the figure by 120 because he has had that many men working under him during those two weeks. I keep this record of each foreman on a sheet showing his last week's record and his record to date.

I don't know just how fair that system is. It seems to be working out quite well. The foremen are interested in it and the men are becoming interested in it as well. In other words, copies of it go to all superintendents and to the general manager, and they put copies on the bulletin boards, and the foreman gets a copy. My theory is that eventually he is going to get tired of seeing his

name on the bottom of the list. Of course, it doesn't count severity. I am wondering if any other plants have used such a plan and, if so, how it has worked out there?

CHAIRMAN CHANT: Will you define a submajor accident for us?

MR. BREWSTER: We count a submajor accident as one that is not lost time but which requires a man to be sent to the clinic (we have our own company clinic), after which he will come back to work. In other words, it is a little bit more serious than a minor accident, so that it requires not just first aid but a doctor's care.

MR. RICHARDSON: I don't see how we can control severity. We are interested in preventing accidents. Whether it's a bad accident or a minor accident depends upon various conditions.

For instance, if you have a slipping hazard in the mill, one man might slip on that and fall down and light on his "fanny" and get up and walk off again without any more ado; whereas another fellow might fall down and receive a serious bruise; and a third person might come along and slip and break an arm or a leg. So I don't see how we can involve severity in that and be fair about it.

CHAIRMAN CHANT: I think that is something you have to work out for your own plant. You are perfectly right in saying that in general, by and large, we have very little control over severity. About all we can do to control it is to make sure of adequate first aid, proper medical attention, etc., so that we don't aggravate an injury needlessly. Aside from that, there is little else we can do.

I am sure that we are all agreed that there is a great potentiality in a safety contest within the plant. It doesn't matter so much how you work the thing out or what rules you have, there is a value there that we can obtain by using a suitable type of scheme.

I mentioned a few minutes ago something about the proper type of publicity for an accident that was almost completely solved by this sweepstake idea. Just arrange it any way you want. Instead of asking everybody to read a long report and to expect them to agree that the committee found the right solution to the accident after it happened, just put up the bare

facts and then let the arguing be done by those who read them. State nothing unless it is absolutely definite. The minute you say, "John tripped over a truck handle" and then add, "while not watching where he was going," you have the basis for trouble.

MR. CANTIN: I have known the sweep-stake idea as applied in the camps and one company in my group has used it with good effect. However, they don't give a cash prize. They give a prize (which amounts to the same thing) once or twice each year for any camp that has gone along without a lost-time accident for a certain period of time. There is a drawing in the same way as that already described here, and the prize is usually a purchase order which is good for a certain value in the company store. A man can get himself a \$5 pair of shoes or an \$8 mackinaw or something of that sort. As mills usually do not give a worker any time off with pay, sometimes the prize is a certain amount of time off with pay, which in some plants in certain locations works better than the money itself.

Plant Housekeeping

CHAIRMAN CHANT: Our next subject has to do with the methods of maintaining plant tidiness and good order.

W. E. STRONG (Marathon Paper Mills Co., Menasha, Wis.): By way of explanation, while we are more in the converting business than in that of paper manufacturing—that is, our division does printing and waxing and finishing and converting of that sort—we had a lot of headaches maintaining a clean plant; and as we look back at it now, it seems as though we did a lot of fumbling for several years.

One of our problems was the starch spray problem, and while you might refer to it optimistically as clean dirt, nevertheless the department in which it was used always looked very mussy. Then we had a waxing problem caused by a wax spray and wax splashing, as a result of which our press-rooms were hard to keep clean. Our little paper mill unit is a very old unit and that also offered a problem.

We kicked this thing around and argued about it a long time and we are definitely of the opinion that the answer to cleaning up is not additional janitor service. You

can hire 150 janitors, but those janitors still won't be able to keep the place clean.

I might also add that we have an all union shop—we have contracts with five unions—and of course all of you know that in the standard union contract there is a clause pertaining to the cleanliness of the mill. After a long time we really got some cooperation from the boys and it came mostly from certain individual members. We could hardly hold the representative committees responsible for the cleanliness of several hundred employees.

Then we started a contest, which, although young, is working out fairly well thus far. We hope to be able to improve on it by correcting some of the mistakes which now exist in the contest rules.

We had a planned inspection, and we got the general manager to be one of an inspecting committee of three, and we announced the date of our first inspection. We thought it only fair that everybody know when the first inspection would be made. I was also a member of that inspection committee. Our plant never looked so clean as it did that day. We couldn't believe it ourselves and yet we were in it all the time. Honestly, there were departments where you could have held a dance had the machinery been shut down.

We were pretty much hepped about it. We finished about noon, and we decided that we would break the departments up for prizes in the afternoon, and that is when our troubles started. There were twelve departments set up and our task was a very difficult one.

I would like to tell you what the prizes were and still are. We are located about 35 miles from Green Bay and everybody living within a hundred miles of Green Bay is very much interested in the Green Bay Packers football team. So we offered as prizes tickets for seats located on the fifty-yard line to all the home games. Just what we are going to do when the football season is ended we don't know yet.

The second inspection was unannounced, and here is the interesting part of the whole thing: the department that was in third place at the time the first announcement was made fell down, I believe, to sixth place, the department that was in sixth place at the time of the first inspection

came up to second place, etc. There is keen rivalry not only between the foremen but among the men themselves. We found out after our first inspection trip that there was a committee of fellows, self-appointed from the pressmen's union, who inspected the mill the day before we did, and we also discovered that two or three of the foremen got together and made interdepartmental inspections.

To summarize the advantages of this program: They are becoming cleanliness conscious, and if it takes \$15 or \$20 or \$30's worth of football tickets to do it, it is money well spent, we think. The reaction of certain individuals in the mill has been interesting. The day I was an inspector I walked into the finishing department and found a certain chap who fed the gluing machine clean-shaven, and I had always known him to be one of these fellows who liked to go around with a black beard and hated to shave and only did so on Saturdays. There was an element of personal cleanliness which entered into this thing without any advertising or hullabaloo.

We are proud of the transformation. The foremen, who I think were more responsible for the old condition than anybody else, are now building up a competitive spirit between themselves. The morning after our first inspection I kept on getting continuous calls from the various men wanting to know why their individual departments weren't in first place. It got so bad that I called the plant manager and said to him, "We've got to have a meeting." I told him why, and he answered, "Let them go out and look for the faults themselves." "But that isn't the answer," I replied. "They won't accept it." "All right, then, suppose you call all the interested parties together at eleven o'clock and we'll meet with them." The three of us who had made the inspection met with those fellows and we got the damndest "haircut" you ever saw or heard of from those foremen who didn't win first place.

Obviously the cost factor has to be taken into consideration in this matter. Some departments are hard to clean because of the process and type of building they are in; others are easy to clean. The nature of the product in some departments has a very direct influence. As we have gone along and worked on this thing, we have definitely decided to set up a scheme whereby the cost

factor will play an important part. Incidentally, one of the two departments that shared first place just before we left for this convention, managed to do so without one dime of expenditure over and above the normal amount of money allotted in the budget for clean-up work.

CHAIRMAN CHANT: Does anybody want to say anything about home-made bulletin board material?

J. F. BERRY: Mr. Chairman, I have a few sample prints here. They were made by one of our trucker's helpers, a fairly good artist, and I have brought them with me in case you fellows care to see them. They will give you an indication of what we have been doing along this line.

CHAIRMAN CHANT: It had been hoped that we might have an exhibit in this room of home-made poster material, but a number of things cropped up to prevent that from being done this year.

I still hope that by the time the next congress comes around we will have been able to work out some method for having a display of our poster material on bulletin boards right in our own meeting room, aside from any displays which the Council might have in the outside exhibition hall. I am sure that in our own group many firms, because they have been fortunate enough perhaps in having an artist on their staff, have been able to work out some splendid poster ideas.

The particular problem that some of the member firms run into up in the province of Quebec, Canada—and in other localities—is that of obtaining suitable safety poster material with the wording in a language other than English. Mr. Cantin, I see, has in his hand a number of posters which he has had developed and then translated into the French language for use in his locality.

MR. CANTIN: We haven't much as far as woods operations are concerned in suitable posters. Occasionally we have found that the Safety Council has issued posters that applied to some extent to woods operations. Then it was our difficult task to translate them into the French language. You may have slogans in English made up of three or four words, but when you translate those into French sometimes a whole line of words is required to give the same meaning.

I am no artist but I can copy pretty well. Some safety posters issued by the Council I have reproduced and then had mimeographed in two colors, naturally with French wording.

CHAIRMAN CHANT: I am familiar with some of the difficulties that Mr. Cantin and his associates in the province of Quebec have had in obtaining suitable poster material. I am much interested in what he has accomplished. I know that pressure has been put on our section poster committee or Visual Education Committee for several years back so that we might, through them, reach the Council poster department with the view of getting posters put out by the Council worded in French. But we run up against the fact that the demand for such material is limited and the Council can't afford to make up such material in small quantities.

The answer seems to lie in the fact, as shown by Mr. Cantin, that the company itself has to do much of this sort of thing. In time we may be able to do something about this through the Council. At least I hope so. The first requirement toward that end, of course, is to get more members—more Council members and more section members—from those localities where such

posters are required. If we can get to the point where we can say to the Council, "We need 1,500 or 2,000 of these French posters every month," then they may be able to supply them without too much expense, but when it is only a matter of supplying 25 or 50 such posters, then the Council naturally informs us that it cannot afford to do so.

Is there anything else, gentlemen? If not, may I again thank you all for coming here and express to you my appreciation for the very free and worthwhile discussions that we have had at these meetings? You have all taken a splendid part in them and I am sure we will go home with some new ideas to make use of in our own work, as well as with some very happy recollections of this congress.

MR. STRONG: Gentlemen: I think that this group should express to Doug Chant a vote of thanks for his continuous efforts in holding this group together and building a program and giving us the fine meetings which we have had. Suppose we give him a rising vote of thanks.

(The audience arose and enthusiastically applauded.)

CHAIRMAN CHANT: Thank you very much, gentlemen. It is undeserved but appreciated nonetheless.

ADJOURNMENT