One of the Hudson's Bay Company's barges at Waterways, Alberta, taking on a shipment of Imperial Oil products for delivery to the Arctic and points on the Mackenzie River.
THE FIVE-DAY WEEK

THE most perplexing and disharmonizing problem confronting Canadians today is the problem of unemployment. It is an aspect of the greater problem of disorganized world trade but, unlike the latter, is susceptible to partial solution by every man and woman who is gainfully employed. That partial solution is, of course, for those who are so fortunate as to enjoy employment to share their work with the less fortunate.

The most practical and acceptable method of sharing work is the five-day week. It is practicable from the employer’s standpoint because it does not disorganize routine operations and does not lessen the efficiency of the individual worker. In fact, time may prove that it adds to his efficiency. It is acceptable from the employee’s point of view because it gives him a very welcome additional period of leisure and because the reduction that it entails in his earning power is not a considerable one, is strictly proportionate to the reduction in his working hours, and is available to pay salaries or wages to some of those who must be recruited from the ranks of the unemployed to make up the labour time required for an industry to carry on at its regular pace.

As long as the consumption of goods continues to dwindle because an increasing number of people are unable to buy or are too apprehensive of the future to exercise their normal spending power, the income of every employed individual becomes more and more precarious. The five-day week seeks to rectify this condition in two ways — it makes room for a certain amount of additional employment, and by increasing the leisure hours of those who are so fortunate as to be regularly employed, it provides an additional incentive to exercise purchasing power. Thus because it tends to increase the consumption of goods, it makes more probable the continued employment of those who now are working.

These facts are taken into consideration in the official announcement made by Mr. C. O. Stillman, President of Imperial Oil, Limited, regarding the adoption of the five-day week by this Company. The announcement states that in making a shorter working week effective Imperial Oil, Limited, has in mind:

1. First, the reassurance to as far as possible of all those in its service that there will be no reduction of employment through a further reaction in general business.

2. Secondly, that through employment of others not now on the pay roll the fear of unemployment will be alleviated and the ability to purchase will be resumed, resulting in a widened market for commodities produced in Canada and an accelerated return of normal business conditions.

The principle of dividing labour and service is a further step in the evolution of working hours and working conditions which has been in progress since the twelve-hour day was in effect.

In view of the foregoing, it is stated that until further notice the following practices will be observed throughout the operations of the Company and will apply to all employees other than those who may have been already affected by similar action:

To the extent practicable a normal working week of five days or its equivalent will apply to all employees engaged in the Company’s operations and now on a five and a half day week.

Weekly wage earners will continue to be paid on the basis of time actually worked.

Salaried employees now on a five and a half day schedule will go on a five day basis with a reduction in pay of one-eleventh, which reduction will apply throughout the organization, including directors and executives, and irrespective of such a decline as has already occurred in the annual earnings of these two latter classes. This reduction in a five-day basis shall not affect salaries of $100.00 or less per month, nor result in a reduction below $100.00 per month for those now receiving more than that amount.

All reductions in compensation will be effective immediately on the pay roll regardless of whether the reduction in working time shall be taken off currently each week, or in one or more periods over the year.
Stolen Highways

Many thousand miles of highways have been stolen from the people of the United States by the gasoline tax evader. Estimates of the extent of his depredations have been made from time to time. It is noteworthy that the longer his criminal activities are investigated, the more staggering are the figures arrived at. That this gasoline tax evader is the most gigantic thief in history and that the spoils total hundreds of millions of dollars is now a subject of general agreement among those who have studied the matter.

Both the motorist and the gasoline industry have suffered from the activities of the criminal element engaged in tax evasion. The motorist has lost thousands of miles of good roads that could have been built with the stolen funds.

There are two aspects of the petroleum industry's affliction. First, the industry has lost the larger market for gasoline which would have resulted from a more extensive road construction programme and this market was particularly desirable at a time when overproduction of crude oil gave rise to so many and such difficult problems. Secondly, the bootlegger used part of the stolen taxes to cut prices and to force them down to ruinous levels.

Gasoline prices in Canada suffer by comparison with prices in such demoralized markets as New York, Buffalo, Detroit and Chicago which have been aptly described as bootleggers' paradises. Perhaps it may be consoling to know that comparable discrepancies exist between prices prevailing at the bootlegger points and at other United States points where the tax evader has not been at work.

Seemingly it is difficult for the average person who has no particular interest in the affairs of the petroleum industry to understand how tax evaders in the United States can result in the spread in prices in that country and prices in Canada. In effect, the average man says, "The comparison in prices which I see are fair because they give the price less tax in the United States and set against the price less tax in Canada. So if we don't consider the tax in either cost, what has the tax evader to do with it?"

It is a reasonable question to ask, and the answer is this: a tax evader uses part of the tax money which he steals to cut his price. For instance, in a state where the tax is six cents, he may cut the price two cents. The result is that a number of motorists, naturally anxious to buy at the best price, patronize him and he is in the position of making four cents more on each gallon he sells than does the legitimate dealer whose price is two cents higher. But the legitimate outlet must meet this price competition, so the United States refiner is confronted with a demand for a reduction in price. The refiner must then return outlets for his products or else close down. Accordingly, he grants the reduction which probably results in his doing business at a loss. But as soon as he cuts a new and lower wholesale price the tax evader can cut again. The evader is still making, over and above a normal retail spread, the four cents of stolen tax which he is retaining for himself. No matter how low the price of gasoline may be depressed, the evader can make substantial profits. That is why one prominent United States refiner recently said, "Not only the gasoline tax revenues and the good will of the public, but also the stability of the American petroleum industry is threatened by tax evaders. One bootlegger can destroy a normal market."

The evasion of gasoline taxes is possible in the United States. It is very difficult for any state to keep an exact record of the amount of gasoline sold within its territory. Interstate commerce laws permit the free transport of commodities from one state to another. State officials may know what amount of gasoline is being refined in their own particular state but to ascertain how much gasoline may be coming in from other states and conversely, how much gasoline may be moved from their state into other states is under existing conditions almost impossible. Not knowing how much gasoline is delivered to dealers within their territory, the State is confronted with a very difficult problem in trying to collect taxes on gasoline sold within its territory.

The fact that during the past year or so the extent of the tax evaders' depredations have come to be realized and his methods of operation discovered is, of course, praiseworthy. The utter ultimate he will be checked. Law enforcement agents and officials of the petroleum industry who have been carefully watching him have observed the following principal methods of defrauding state treasuries:

1. Susceptible transport of gasoline across state lines. This may be done either to avoid payment of any tax, or gasoline may be removed from a territory where the tax is low to a territory where the tax is high.

2. Setting up a dummy grant company to help the gasoline tax free exporter for marketing purposes. The gasoline is then sold for resale consumption.

3. Neglect to report receipts of gasoline or lubrication of such reports.

4. Disingenuous attorneys for gasoline, naphtha, kerosene and fuel oils where such are tax free and selling them as motor fuels.

5. Raising insurance on documents recording sales on which there is tax exemption (e.g. sales of gasoline to farmers for use in farm machinery, etc.)

6. Juggling shipments—diverting shipments to some government company or which sells the gasoline and reduces the amount the tax authorities can check up.

7. Corrupting public officials.


9. Comparing with unsuspicious refiners to receive deliveries which have been improperly or incorrectly reported to the authorities.

To meet these conditions, state officers and officials of the petroleum industry have declared open war on the tax evader and have adopted the following six principles of attack to which they are adhering with beneficial results:

1. Co-operation and co-operation on the part of every legitimate and honest marketer in the oil industry.
2. Investigation of all cases of evasion.
3. Presentation of all available evidence relating to evasion to the proper state authorities.
4. Pressure on state collectors and attorneys-general to collect from delinquents and to prosecute all who defraud.
5. Asking state departments to obtain enough investigators and auditors to check shipments of gasoline in co-operation with railways and other transport companies.
6. The careful study of gasoline tax laws to determine whether they are adequate to control the situation.

These efforts are bearing fruit. Among the several welcome evidences of their fruitfulness is the case of Pennsylvania State which is collecting millions of dollars more in gasoline tax revenues than it did in 1930. A number of offenders have recently been sent to jail in Illinois, Kansas, Pennsylvania, Colorado and Wyoming. Operating permits of gasoline distributors have been cancelled in several states. In other cases operating permits have been suspended. Anti-bootlegging clubs have been formed by consumers and oil operators in several states. In Oklahoma, state deputies are halting tank trucks on the highways and examining their contents. Along the Virginia border there is a 24-hour patrol to prevent bootlegging of gasoline from the District of Columbia where the tax is two cents, into the State of Virginia where the tax is five cents.

Officers are patrolling the Missouri highways and stopping all gasoline tank trucks. Railroads in South Dakota are cooperation in reporting all rail movements of gasoline. In California an oil company has offered rewards of $20,000 for information leading to the arrest and conviction of tax evaders. So, all along the front, the offensive is being conducted by the allied forces of the state, the public and the petroleum industry. Each has much to gain. The state will gain larger revenues. The public will be protected against dilution of gasoline with fuel oil, naphtha and other tax-free petroleum products. The industry will be saved from the disaster which would be inevitable if tax evasion were not abolished.

The Taxes on Gasoline

The United States Revenue Act, recently passed, imposes a federal tax of one cent a gallon on gasoline, which prompts the New York Times to remark that the goose that lays that particular golden egg has taken on an added burden. The Times continues to say that every state now has a gasoline tax, ranging from two cents a gallon in Connecticut to seven cents in Florida. Furthermore, many of the states, finding the pickings easy in this respect, have increased their tax rates, or contemplate doing so. This is a sorry prospect for the owners of motor cars, who now have to pay a tax on every gallon of gasoline they use to both the state they reside in and to the United States Government as well.

The situation in Canada with respect to the gasoline taxes resembles that in the United States to the extent that all the provinces tax the article. As yet there is no Dominion tax, although this has been suggested. The Canadian rates are generally from five to seven cents a gallon, but there has been talk on occasion of gradually raising the tax in some provinces to ten cents a gallon. This would mean that the tax would be fifty per cent. or more of the price per gallon.

The Welland Ship Canal

Champlain, La Salle and their adventurous compatriots were the first white men to penetrate the lands west of the Great Lakes. They found only one entirely navigable stretch in the great chain of waters extending from the straits of Belle Isle in the Gulf of St. Lawrence through the Great Lakes to Duluth at the western end of Lake Superior. The mighty waterfalls of Niagara was like an impregnable fortress set to bar progress by a “short water passage” to the Orient.

For centuries the Indian in his westward travels landed at the point where Lewiston now stands, and with his canoe and his goods on his back climbed the escarpment. At the top he followed the forest trail to a point above the rapids where he could safely resume his journey in the calmer waters of the Upper Niagara. The early white settlers improved on the Indian method to the extent of making an ox trail on the “grand portage of Niagara”. The white men grew more numerous. Sailing craft began to replace the bark canoes. Traffic increased and locks became heavier and the construction of a canal became imperative for the development of the country.

No one can say definitely who first proposed the building of such a canal. The first practical step was taken in 1816 when Colonel Robert Nichol succeeded in introducing to the Parliament of Upper Canada a bill providing funds for a survey of the different water routes between Lake Erie and Lake Ontario, also between Lake Ontario and what was then called Lower Canada. The measure never became law and the inhabitants of the Niagara district, inspired and headed by the Honorable Hamilton William Merritt, founded the Welland Canal Company and built the first Welland Canal with private funds.

Eight years ago, in November 1924, a caim was unveiled at Allanburg, Ontario, marking the spot where, one hundred years before, the first sod of the
Welland Canal was turned by Mr. George Keeler, president of the Welland Canal Company.

The canal ran from Port Dalhousie on Lake Ontario to Port Robinson on the Chippewa Creek from which point vessels navigated down the creek to the Niagara River and thence to Lake Erie. It had 29 wooden locks, each 110 feet long, 22 feet wide and with 8 feet of water on the sills. There were no steam shovels in those days, all digging was done by manual labor. This canal was completed in 1829, when two schooners, the Anne and Jane, Upper Canada (Toronto) and the R. H. Boughton, of Youngstown, Ohio were taken through. A barge entering the canal at Port Dalhousie was dragged up the river by horse or man power from a tow-path, lifted over the escarpment by the locks, towed through the canal and locked into the Welland River at Port Robinson. From there it was pulled to the mouth of the river at Chippewa whence it proceeded unhindered on its way.

By 1833 an extension from Port Robinson to Port Colborne on Lake Erie was completed. This route was 27½ miles from lake to lake.

In 1837 the Government of Upper Canada, which had loaned considerable money toward the building of the canal, converted its loan into stock and in 1841 purchased the entire canal.

The Government decided to enlarge it and by increasing the lift reduced the number of locks to 27. The new locks were cut stone and were each 150 feet long, 26½ feet wide, with 9 feet of water on the sills. This work took three years and the new canal was opened in 1845. The section of the canal between Welland and Port Colborne was then enlarged for 9 foot navigation and opened in 1846.

This canal between Thorold and Port Dalhousie remained in operation after the third canal was completed, but since 1915 has been used only for power purposes.

In 1873 it was decided to further enlarge the Welland Canal to a depth of 14 feet but even before the work was completed it was found to be inadequate for the vessels being built on the upper lakes.

The tremendous growth of shipping called attention to the need for further improvements in canal facilities to accommodate the vessels that would use these channels and in 1913 the Dominion of Canada began construction of the Fourth Welland Canal. It is capable of taking the largest of the great lake freighters as well as large ocean freight carriers.

The route of the Ship Canal does not follow that of the previous canals, to any great extent. It leaves Lake Ontario at a point about four miles east of Port Dalhousie, follows due south along the valley of the Ten Mile Creek to the foot of the Niagara Escarpment at Thorold.

One of the Imperial Oil tankers, S. S. SIMOULITE, downward, passing through W. Lock 4, looking south.

The new canal is 24 miles from lake shore to lake shore, with a total lift of 326½ feet—the difference between the levels of Lake Ontario and Lake Erie. There are eight locks, each 85 feet long, 90 feet wide, with 30 feet of water on the sills. Each holds 20,000,000 gallons of water and can be filled or emptied in 8 minutes. At the escarpment, proper, there is a rise of 186
feet in less than a mile which is surmounted by three twin locks and one single lock. The twin locks enable boats travelling in opposite directions to proceed without unnecessary delay.

One of the many engineering feats in connection with building the Ship Canal was the digging of a new channel for the Welland River from Welland to Port Robinson and using the old river bed for the new canal. This meant diverting the Welland River, which is below canal level at the city of Welland, under the Canal by means of an inverted siphon culvert. This was accomplished without any interruption of marine traffic.

Owing to the fact that the Canal parallels the Niagara River and is only ten miles from it, there are many railroads and highways converging on this frontier. This necessitated the construction of 21 bridges all of which will have a clearance, when fully raised, of 120 feet above water level.

To provide power, heat, and to light the canal from end to end, a power plant has been installed, at the foot of the flight locks where a 186 foot head of water drawn from the Canal creates the necessary power for operation. A complete self-contained automatic telephone system has been installed, connecting all bridges, locks, power houses and executive buildings.

Elaborate precautions have been taken to guard against accidents due, among other causes, to vessels getting out of control in the locks. The gates are especially well protected and all equipment operating the valves, gates, fenders and signals at a lock is so electrically interlocked that the operator can only conduct the location of a vessel in a definite order of operations.

In one respect the construction of the fourth Welland Ship Canal differed markedly from the first three. It was realized that this enlarged waterway would require a greater measure of protection against natural erosion, and to this end an extensive reforestation programme was carried on during construction. The roots of the trees will bind together the earth embankments and the leaves and branches will form a windbreak to shelter passing vessels from cross winds.

The Welland Ship Canal is a link, in the 2,339 mile chain of inland waters through which, on completion of the Saint Lawrence Waterway plan, every port in the Great Lakes will become an Atlantic seaport, open to the shipping of the world.

In the gigantic task of constructing the Welland Ship Canal, Imperial Oil products did their share, providing necessary fuel and lubricants for the equipment used on the job.

(named in honour of a vice-president of Imperial Oil, Limited, the S.S. Victor Rees was recently launched at Vincennes for the Baltic-American Petroleum Import Company, a subsidiary of Standard Oil (N.J.). This ship is 545 feet long, 39 feet, 9 inches in depth and has a cargo capacity of 4,000,000 Imperial gallons. Her speed is 12 knots. She will be used in international commerce.

The launching was made the occasion of a public fete at Vincennes and there were more than 300 persons in the official party which included many state officials and high officers of European and American petroleum corporations. Mrs. Victor Rees, who carries the name, was sponsor and was accompanied by her son, Mr. Victor Rees, who stands at her left. Others in the group are Mr. Heinrich von Roedern, Mr. E. A. Clark, Mr. Orville Hohenzollern, Director of Standard Oil (N.J.), Mr. and Mrs. Ben Stein, of London, England, Mr. and Mrs. H. Schneider, of European Standard companies, and Mr. W. S. N. Board of International Petroleum Company, Limited."

An idea of the size of the vessel is afforded by comparison with the figure of a six feet man in the upper right hand picture. The festive nature of the event is indicated by the centre picture showing the official platform and a small part of the crowd below. On the day of the launching, Mr. Rees received a wire from Mr. W. E. Triple, expressing the hope that the Victor Rees would "act as well as the original."
The Responsible Motorist

The days of our years are three score and ten. Medical science has made astonishing progress in the last decade and bids fair to make this allotment attainable by all of us. Since 1923 most of the great scourges of mankind have been winning a losing battle against the brains and ingenuity of men in the world. Tuberculosis shows a decrease of 13%, pneumonia 25%, influenza 48%, diphtheria 51%, typhoid fever 99%. It is true that the mortality rate of cancer has increased 37%, and that of diseases of the heart and arteries 38%, but this is probably because more people are now living to the age at which they become susceptible to organic disease. Although cancer and heart disease are making great strides, another minuscule of the grim widdler of the scythe is rapidly overtaking them, for the automobile, which in 1923 took only one life for every eleven accounted for by cancer, now takes one for every six destroyed by its closest rival. In other words, deaths arising from motor accidents have increased 142% since 1921.

The situation is alarming and unless measures are taken to check the ever-mounting toll of life taken in our streets and highways, the automobile may come to be regarded as an enemy rather than as a friend of man. The insidious thing about the problem is that most people dismiss statistics of this sort with a wave of the hand and refuse to believe that anything can be done about it. The Ontario Department of Highways, fortunately, takes a different view of the matter, and for that reason preventing this state of affairs—chiefly, it is waging an aggressive campaign for highway safety. By means of radio, motion pictures, posters, brochures, pamphlets and other literature for use in the schools the public is being made "safety conscious", with the result that up to the end of August this year, five months have shown a decrease in the number of fatalities from the 1923 totals—the greatest reduction ever in loss of life from motor accidents that has yet been attained.

One of the most potent weapons in the war against automobile injuries is the systematic recording and analysis of accident statistics. Realizing this, the Ontario government has diligently gathering figures of all sorts, and publishes a complete Summary of Motor Vehicle Accidents. In this it is possible to find everything from the number of pedestrians who were injured while crossing against a red light to the number of cars which ran away by themselves, in the absence of their drivers.

Incidentally, there were 22 cars in 1931 which were seized with the wanderlust while their drivers were away and rammed off, all alone to see the wide, wide world. The classic example of this is the truck loaded with dynamite which was parked on a slope and when the back door was turned started coasting down the hill towards a bridge! The driver, faithful soul, gave spirited chase and succeeded in catching up with his wayward machine just as it came gently to rest against a telephone pole.

Statistics are sometimes boring in large installments, but a survey of the Ontario Motor Vehicles Accident Chart is very interesting. Ontario had 9241 accidents in 1931, of which 255 were fatal. Of those accidents with pedestrians, the largest percentage (29.6) involved children playing in the street. Next in order comes those which took place at intersections. Walking on highways accounted for only 4.8% of pedestrian accidents but 15.1% of pedestrian fatalities! The great difference between these percentages is convincing proof of the danger which lingers on the King's highways for the card-crazy walker.

Always walk towards traffic and be particularly careful at night.

In city traffic more productive of accidents than the open road! Statistics show that it is, for 77.8% of all automobile accidents happen on urban streets. However, while only 22.8% of automobile mishaps take place on country roads, 33.2% of all motor fatalities happen there.

The motorist as well as the pedestrian should be particularly careful on highways.

The most dangerous place of all on the highway is the railroad crossing. He who likes to race trains to the crossing would do well to consider the following figures. Victims of railroad crossing accidents comprise 10.9% of those killed in automobile accidents but only 1.8% of those injured.

The driver who contends with the locomotive for the right of way seldom wins.

Interesting in formation is given as to the time at which most accidents occur. It has been found that the period between five and six p.m. has the dubious honour of first position. Only little more than half as many mishaps take place during the hours from eight to ten a.m. although the traffic at this time is just as heavy. What is the explanation? Perhaps the haste of drivers to reach their homes and their more or less fatigued condition enter as accident factors and result in decreased vigilance.

Next time you are tempted to "step on it" in order to get home from work a couple of minutes earlier, remember that your chances of accident are greater than at any other time of the day.

The chart also reveals that there is a sharp rise in the number of accidents at the end of the week, and that the most dangerous period on Saturday and Sunday has moved on to the hour between six and seven p.m. Can this mean that church-goers are reckless drivers?

Another interesting fact is that while most mishaps occur when the motorist is going straight ahead, left-hand turns come next in order, followed by skidding accidents. It is significant that left-hand turns account for three times as many collisions as right-hand turns.

Ner outer cutters when making a turn to the left. Remember, too, that the driver behind you is not a mind reader—just cut your hand.

Women drivers will find information in the government chart which they can use to overhaul the next male expert who dares to question their driving capabilities. In Ontario last year 94.7% of the drivers involved in accidents were men, and 5.3% women, but only 85.6% of the drivers in Ontario are men, and 14.4% women. So the next time you see a woman driver bearing down upon you, be thankful. She's much less likely than a man to ram you amidships.

The chart also gives the ages of drivers involved in accidents. Young people will have difficulty, perhaps, in believing this, but it is a fact that while only 23.5% of the licensed drivers in Ontario are between the ages of 16 and 25 they were implicated in 29.15% of the accidents. These statistics will be useful for fathers whose sons like to give their elders lessons in the art of driving.

Why did 9,241 accidents take place in Ontario last year? Should they be blamed on the physical condition of the driver, the mechanical condition of the car or on the condition of the road? The chart says that 38.5% of all drivers implicated were under normal physical condition, 86% of the cars involved were apparently in good shape, and road conditions were good in 48.5% of the cases reported. The inevitable conclusion is that automobile drivers are so far the result of the mental condition of the driver, that they are nearly always preventable and that the responsibility rests squarely upon the man at the wheel.

The greatest single cause of motor tragedies is admittedly excessive speed. There is not a car on the market today which is not capable of a mile a minute or better, and there are very few people who have not travelled at high speeds and fancied themselves in perfect security. Yet it has been proved beyond doubt that greater speed means greater danger and a
greater number of automobile fatalities. Of course, there are occasions when twenty miles an hour is as dangerous as sixty. The average driver’s mind cannot function quickly enough for him to apply the brakes until one second after he sights the danger ahead. In this second even if he is travelling at only twenty miles an hour his car would cover twenty-nine feet! What chance would this give a child darting from behind a row of parked cars into the path of the motorist? Unfortunately, many people seem to think that because their cars are equipped with four-wheel brakes they can drive in the most hair-brained manner without disastrous consequences. Four-wheel brakes have been helpful, doubtless, in averting many collisions but they cannot compensate for the increased speed of automobiles. Accidents have continued to increase since their adoption.

Perhaps the speed marines would think twice before ‘stepping on it’ if he were to realize that the energy of a moving object increases as the square of its speed. In other words: a car going 40 miles an hour is four times as powerful as a car going 10 miles with the same mass. If two cars, each weighing one hundred pounds, are racing towards each other, the one going forty miles an hour can stop in half the space as the other. In other words: a car hitting a concrete wall at 40 miles an hour would smash up just about as badly as if it were dropped from the roof of a five-story building. And when he runs along at 80 miles an hour he might not be quite so confident if he were to realize that he is taking the same chance as he would when walking along the edge of the roof of a twenty story skyscraper, and that the slightest slip or false movement would have the same disastrous result as a drop to the pavement from that height.

Speed is always dangerous.

There are many good citizens who for some unknown reason will break traffic laws although in all other respects they are strictly law-abiding. An effective check on this heedless mental attitude is the strict enforcement of a sensible traffic code.

Obey traffic laws at all times.

In addition, automobile owners must be educated to keep their cars in first-class mechanical condition. Although only 15% of accidents were due to faults in mechanism, the majority of these were the result of faulty brakes. The police departments of our municipalities are now emphasizing the necessity of keeping brakes in good working order, and their campaign, without a doubt, has made drivers on Canadian roads more careful in this respect.

Keep your car in first-class mechanical condition.

The danger of excessive speed, the necessity for obedience to traffic laws and the need for a well-kept automobile mechanism have all to be remembered.

Two things in particular must the motorist public learn if he is to be any improvement in the accident situation, and that is ordinary good manners. The quickest and surest way to see the worst side of a man’s character is to place him behind the wheel of a car. The most insolent, quiet spoken, polite sort of person may suddenly become a blistering road hog, indifferent to the rights of others. After all, the real, underlying cause of most motor mishaps is lack of consideration. When drivers learn that courtesy and good humour are just as desirable in a motor car as in a drawing-room, streets and highways will become safe and the likelihood of ‘the days of our years’ reaching three score and ten’ will be appreciably greater.

Ford Sedan equipped with Atlas super-balloon tires.

How Atlas Tires are Made

TWO members of the Imperial Oil staff were returning to Toronto from a trip to Western Ontario one evening recently. They were so engrossed in discussion of the business transacted that they suddenly found themselves in the city, half way across an intersection, against the lights. The man who was driving applied the brakes, remarking: ‘Good thing there wasn’t a traffic officer at this corner’, when foot-sore-thing of blue uniform was seen majestically toward them.

The driver prepared to plead innocent, but the officer spoke first. He said: ‘Say, do you mind telling me where you got those tires?’

The tires that diverted the attention of the law and averted a reprimand were a set of super-balloon Atlas tires which, although not yet ready for general distribution, were being tested on the car driven by these officials of the company. While the super-balloon Atlas is still in the experimental stage, it is an indication that its makers keep abreast of the trend of tire requirements. The other Atlas tires, however, are well established in quality and in public preference, and we thought perhaps our readers would like a little description of their manufacture. So we set out for the factory, duly obtained a pass and proceeded to find out as much as we could by a flying trip through the plant.

On our way to the rubber storage, which is the beginning of the actual manufacture, our courteous and well-informed mentor gave us a brief sketch of the romantic history of rubber which begins its commercial life in tropical forests and plantations as a mild-like fluid and reaches the consumer in an infinite variety of forms.

This milky juice, or latex as it is called, is a liquid poured forth by the inner bark of the rubber tree to heal wounds made in the tree. The trees are tapped in the early morning hours as the latex flows during this time only. The business of tapping the trees and collecting the latex is very similar to the Canadian farmer’s way of tapping the maple and collecting the sap.

Then the particles of rubber are separated from the liquid. This is done in different ways in different parts of the world. In Brazil the rubber collectors dip a wooden paddle in the latex and smoke it over a fire of leaves and roots. The heat evaporates most of the liquid while the smoke coagulates the rubber. This operation is repeated until there is on the paddle a large
ball of rubber weighing from 10 to 150 pounds. The smoke also acts as a preservative and rubber thus treated will remain in good condition indefinitely.

On some plantations the latex is poured into flat pans and a small amount of acetic acid added. This causes the rubber particles to rise to the surface and coagulate in a thick sheet. The sheet is then run through a roller to remove excess liquid, after which it is smoked for several days.

Another method recently developed is to place the latex in a tank, above what is called a spraying room. The liquid trickles down a rapidly revolving disk set in the ceiling of the room. This disk throws off the latex in a fine spray, the heat of the room evaporates the liquid and the rubber particles fall to the floor. By this method every particle of rubber is extracted and as the spraying room is kept scrupulously clean the rubber is free from impurities. The fact is that in the last few years it has been found possible to ship latex to the factory in liquid form, by the addition of ammonia. All the kinds of rubber produced by the above process were to be seen—and smelled—in the cool, dry storage vault of the factory where Atlas tires are made.

Most of the crude rubber was in sheets rolled into bales and looked like dirty cloth. Crude stock is important countries in the Rubber Belt: Brazil, Peru, Venezuela, the Belgian Congo, Ceylon and the East Indies. Many manufactured articles are blends of different kinds of rubber, sometimes with other substances added.

The first step is to cut the bales of crude stock into pieces. This is neatly done by a hydraulic ram. The bales are placed on the platform of the ram which at a touch of the switch quickly and more or less simultaneously raises and forces them through the blades of a six-sided knife. We shivered; it reminded us of a horrid story by Edgar Allan Poe. Next in line is the room where the compounding is done. Against the wall is a long line of bins containing sulphur, lamp black, soapstone, and a number of other substances used in the different compounds. Above them hang files of recipes. In front of the bins are conveyors whereon the crude stock moves. Each box holds a "batch" which is made up from ingredients specified in the recipe. Every ingredient in the batch is carefully weighed and each batch weighs approximately 100 pounds. The conveyor takes the batches to the mixer which heats and amalgamates the component parts. The cooked or finished batch must weigh exactly as much as the raw material. Otherwise, a slight error has been omitted and the batch has to be discarded.

The finished batches are then milled, that is, introduced between steel rollers of differing speeds, which causes friction and thus heats the rubber to a workable temperature. These rollers are delicately adjusted and are capable of turning out a strip of rubber nearly a thousand having an inch thin. These strips or sheets are then dusted with soapstone to prevent the folding adhering to each other, folded neatly and placed on shelves to "rest" for a certain period. After watching a batch undergo this strenuous senium in a mill we could understand that it must have been thoroughly exhausted for it struggled like a live creature in the grip of the rollers. After this rest it goes through another series of mills, increasing gradually in temperature, plasticity, evenness and texture. If it does not come through smooth and glossy, back it goes.

Then we went over to see the tread stock being made. The batches for this come up on another belt conveyor and one at a time are thrown into the "nut-cracker." This is a small, very powerful, mill and its function is to reduce the cold stubborn batch to a kilogramm workable mass. This is milled until it has the appearance and sinuosity of an egg and then it goes onto the tread rolls to acquire the necessary width and proper thickness to receive the distinctive design which identifies the Atlas tire. It is cut into lengths and put into boxes—neat piles interleaved with cotton sheeting—ready for the tire builder.

At the far end of the airy, sunlighted room they were preparing the breaker strip which is an important unit in the make-up of a modern tire. It is made of specially woven cotton, impregnated with a rubber mixture, and wound on to great rollers with protective sheeting between layers.

In another room we watched the preparation of the head wire for reinforcing the edge of the tire. A machine somewhat resembling a sausage-stuffer absorbs miles of loosely woven copper wire and great quantities of soft rubber. The wire comes out flattened, every crevice filled with rubber. It is made into loops of the exact thickness and size required, wrapped first in a square wrapper, coated top and bottom with more rubber, and wrapped again.

One of the special features of the Atlas tire is the fabric of the carcass, in the manufacture of which the beautiful milky latex is used. A marvelous sight is the spinning machinery which turns out this cloth. From a forest of spools, well over a thousand, come snorly cords drawing closer together till they form a sheet about five feet wide. Down this moving sheet pours the latex, thoroughly saturating the cords and binding them together. A worker stands on a platform before it, and with the aid of special lighting scrutinizes the fabric as it passes him and stops the machinery if he finds any flaws. These seldom occur and the sheet runs rapidly on, over rollers, through a heat chamber which dries it, over, under and around more rollers, until it is dry and cool enough to dispense with the continuous sheet which up until this time kept it from sticking. Now it is ready for the bias cutter, where cleverly contrived knives cut it in bias strips of the required width. It also is laid in books ready for the tire builder.

A master tire builder in action is like one of the craftsmen of old, every movement so deft, so expert. Before him is a collapsible, revolving metal drum. At one side is the revolving rack with treads, piles of fabric, breakers, stripper bands, chuting strips, and at the other side is his tool bench. His feet, hands, eyes—his whole body—co-ordinate with perfect efficiency. It is difficult for the observer to determine when one operation ceases and another begins. A turn of the rack, a length of fabric is laid on the drum, it turns slowly, the next edge joins, the piles are laid until the necessary thickness is reached. The drum whirls, a tool compresses the outer edges. The sturdy beaded wire is set on. Chuting strips cover any rawness—no rough edges to cause friction and wear in these tires—the breaker strip, and the carcass is ready for the tread.

It first lies tacked, and the joiner wields as solidly as the rest of the tread. Uncured rubber is rather sticky, especially when warm, and this causes the layers to adhere to each other and makes for less internal friction, giving the customer more mileage for his money. The outer edge is turned in, as nearly as a Paris dressmaker turns a hem. A touch, the drum collapses and the tire is slung onto the arm of the overhead conveyor and goes on to the shaping room.

When it is placed in the shaper a vacuum is applied and in less time than it takes to tell it, is drawn into its proper form. A steam bag is inserted and remains in the tire until air is admitted and the exact shape is given. After curing, presents a fine, smooth surface, further reducing the possibility of friction between the tire and the inner tube.

The tire now begins to look like the finished article except that it lacks the Atlas non-skid tread. Again the overhead conveyor "sends an arm" and takes it to the curing and moulding oven. There are individuals, one for each tire, complete with thermometer and timing. The length of time required for curing varies with the type of tire. When it comes out, after being subjected to intense heat and great pressure, it has the tread pattern firmly and closely pressed into it.
VOL. II. No. 10.
September 1931.

THE POUR

This is the last number of the
imperial oil review. The time is
now past when the first number
was published. Time flies, and
the next edition of this paper
will appear in the spring of 1932.

A British firm has been
appointed to manufacture and
sell a new type of automobile
which is expected to revolutionize
the automobile industry.

The new model, called the
"Eclipse," is designed for
passenger cars and is
constructed on a new
system of suspension.

The "Eclipse" will be
unveiled in London in March
and will be available for
purchase in the United States
in May.

A new system of road
signs has been introduced in
England, which is intended to
reduce accidents on the roads.

The system consists of
large, brightly colored signs
which are visible from a distance
of one mile.

The signs are made of
reflective material and are
mounted on poles which can
be easily replaced in case of
breakage.

This system has been
tested in several areas and has
proved to be very effective.

The introduction of the
new system is expected to
result in a significant decrease
in accidents on the roads.

A new type of airplane
has been developed in
America, which is capable of
flying at a higher altitude than
any other airplane.

The airplane, called the
"Aurora," is equipped with
electrically driven engines
which enable it to reach
altitudes of over 20,000 feet.

The "Aurora" has been
tested extensively and has
been found to be highly
successful.

The airplane is expected
to be used for scientific
research and for long
distance flights.

A new type of fuel has
been developed in
Germany, which is expected
to revolutionize the
aviation industry.

The fuel, called "AeroLite,"
is made from coal tar
and is highly flammable.

The "AeroLite" fuel is
expected to be used in
electrically driven
engine airplanes.

The introduction of the
new fuel is expected to
result in a significant
increase in the efficiency
of airplanes.

A new type of airplane
has been developed in
France, which is capable of
flying at a higher altitude than
any other airplane.

The airplane, called the
"Balcus," is equipped with
electrically driven engines
which enable it to reach
altitudes of over 20,000 feet.

The "Balcus" has been
tested extensively and has
been found to be highly
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The airplane is expected
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CREEPING SHADOWS

The solar eclipse viewed from the air

by JUDITH M. ROBINSON

CHICORY bloomed in the flying field; chicory, Queen Anne's lace and a fine second crop of butter-and-eggs. There was time to admire them all as CF-10L trundled deliberately southward, traced a large and leisurely arc on the rough grassland and came around to meet the wind.

Then the little plane shook herself and remembered she had wings, and botany lost its appeal. Chicory, Queen Anne's lace and butter-and-eggs ran together in ribbons of blue, white and yellow and were lost in green. Red fled backward in humpy streaks, faster, faster—

Suddenly the green was no longer flowing in streaks and CF-10L no longer leaping forward. She was holding her wings and poised against a rushing air that hummed about her, while flying field, hangar, trees, roads, fences and farms dropped away from under her balancing wings.

The time was 1:06 in the afternoon of August 31, 1932. The place was that part of the sky that stands over the De Havilland flying field, York County. The plane was the Imperial Oil Puss Moth, CF-10L, away to look at the solar eclipse of the decade with T. M. Reid, aviator manager, at the controls.

As celestial phenomena, eclipses are very well in their way. But set against a first voyage in an aeroplane, and that aeroplane the famous little leader of the 1931 Trans-Canada flight, what is an eclipse? Only a celestial phenomenon.

Tangled in memory with the long-heralded 1932 eclipse (totality at Toronto, 91 per cent.) are blue skies and bluer waters, shining clouds and misted shores, a large indifferent green and gold countryside spreading backward from a grey little, stiff little town of a city and CF-10L soaring high above an unimportant planet.

Riding the warm wind like a gull the plane turned south toward Lake Ontario. Beneath her wings spread a relief map (small scale and rapidly growing smaller) of a city. Toronto, beyond question, but landmarks were not easy to identify at first gingerly look overside. A second look lighted on a long patch of bright green set irregularly with roses of darker green and patterned with fine grey markings.

"What's that?" At the question, shouted above the engine's roar, T. M. Reid turned looked overside, grinned a broad grin, and shouted back, "Cemetery," he said. CF-10L left it at that and went on looking for the eclipse.

She found the clouds first. Circling above Toronto Bay she watched them touch with lovely shadows the face of a not-too-lovely city. All down the sky as far as the shining white of Scarborough Bluffs she played at hide and seek with them and, turning back, climbed to ride even with the topmost of the fantastic and dazzling pinacles they piled in the southern sky. And she noted into the middle of little ones nearer home for the fun of the bumps they gave her. Then she settled to business. She was up to look at the eclipse and eclipses start on time.

At 1:16 precisely the sun viewed through CF-10L's tall skylight, a pair of smoked glasses and a length of spoiled negative, showed a flatness, right upper curve. At 2:21 the flatness was distinctly flatter. At 2:25—

At 2:25 and as four thousand feet the shining top side of a cloud took CF-10L's tiny still-winged shadow and encircled it with a ring of rainbow, unbelievably beautiful. The eclipse went unregarded for a time.

Old Days Recalled

From the recent decision of the Directors of Imperial Oil, Limited, to consider the work of all employees on a commission basis for regular employees, many of these men are receiving the covered service benefit for long terms of work with the Company.

Several of them have written to the Head Office expressing their thanks for this consideration and among them Mr. C. H. Burns of Kelowna, B.C., who recapitulates his experiences with the Company. We quote from his letter:

"I was located at the village of Robinson, Man., and in the hardware business, with coal at a side line. I had a warehouse on the track and Mr. Morden persuaded me to rent it to the company at $4.00 a month for the first year. A few years passed and the company put me in charge of the company's affairs for Imperial Oil Company, which I did, and signed an agreement to be their agent on a commission basis. Mr. Morden ordered the first stock which I remember well consisted of coal oil, machine oil, axle grease, candles and Capotol cylinder oil. All the oils were in wood barrels and it was used by my small-run job and I will not go into that because it was not a large business.

"It was in 1917. I sold my hardware business and then decided to work the oil business and devote all my time to it. First I asked Winnipeg office for a salesman to assist me and in a few days Mr. D. S. L. Patterson, who was then special lubricating oil sales-
man, came up to Roblin with his old Ford runabout, which looked more like a farmer's old buckboard, and we started out to get the business of that district, which seemed to have no boundary lines.

"My next improved service was to get a Ford truck and the Company supplied me with a demountable tank that held 260 gallons, and with this equipment, which was I believe the first to be operated by a commission agent any where west of Winnipeg, I was able to deliver to the tractors to within four miles of two other Imperial Oil stations.

"I held this business until April, 1924, when I was asked to come to Kelowna and take over the agency here on a salary basis, which position I still have.

"And now, I wish to thank the Board for granting me the extra service which has made it possible for me to receive a Ten Year Service Button which I shall be very proud to wear, and hope that I may continue to give such service that I may some day, not too distant, exchange this for a 20 year one."

Another employee, Mr. D. A. Robertson of Indian Head, Sask., whose service goes back for many years, recently retired under the provisions of the Annuities and Benefits Plan. His retirement was the subject of an article in the Indian Head News which describes the progress of the oil industry from the time of Mr. Robertson's first association with the Company twenty-five years ago.

At that time Indian Head had two automobiles and the local Imperial Oil plant was a barrel station. Four years later the barrel plant became a bulk station with storage tanks. Mr. Robertson conducted the business without help for fifteen years, covering territory extending to Grenfell, McLean, Odessa and Fort Qu'Appelle. He was at first on a commission basis but later placed on salary. His headquarters was Winnipeg and, latterly, Regina. Looking back, Mr. Robertson states that in those early years an oil salesman had to cover territory with less efficient and slower means of transportation. As trade increased with the advent of the motor car, competition in the oil business also increased, with the result that the sales force increased and the work became more intensive. The man in charge of the Indian Head station now operates only in a twelve mile radius.

**GOOD WORK COMMENDED**

The other letter is from Mr. A. J. Larochele of Ottawa. His appreciation is voiced thus:

While driving recently on the road between Labelle and La Minerve, in the Laurentians, I had the misfortune due to rainy weather and carelessness on my part to leave the road and get in axle deep in the mud.

I am afraid I would have been in this isolated spot for a long time were it not for the kindness of one of the drivers of trucks, who gave me every assistance possible and finally succeeded in getting me out of this difficulty.

I offered to pay him for his trouble in this connection but he refused, simply saying, "I appreciate your difficulty".

On my arrival at Labelle, I learned that this man's name was Mr. Pillet from L'Annonciation, and thought that the least I would be able to do for him would be to drop you a line in order to show my appreciation.

I have always been a user of Imperial Oil products and will continue in this respect for some time to come on account of the service that this man rendered me.

**MORE ROADS FOR LESS MONEY**

IN THESE days when everyone is trying to make the dollar go as far as possible, highway construction costs receive particular attention. Consequently asphalt is playing an increasingly important role in the extension of good all-weather road systems. Remarkable results have been secured from development work carried out by provincial and county road engineers in collaboration with Imperial Oil engineers. Only a few of these results need be cited. In Haliburton County, Ontario, a stretch of dusty, rough road, its surface ever adrift (if a nautical term may be applied to a road), was converted into a smooth, dustless highway at a cost of only $40 a mile. This was very little more than the average yearly cost of maintaining the road in its former unsatisfactory condition.

In Selkirk East an eight-mile stretch of road was improved at a remarkably low cost. Originally it was a traffic-bound road, terribly dusty and impossible to maintain, with pot-holes and washboarding developing. Each year crushed stone was put on this road and each year traffic ground the stone to dust and it disappeared. This year the road was scarified and levelled and new material was added where needed. It was then treated with Imperial Priming Asphalt at the rate of one gallon for every square yard, and stone chips were spread on top. The cost of this work was about $452 a mile. The result was the complete elimination of dust for 12 months, the elimination of all pot-holes and washboarding, the establishment of not only a smooth, bituminous surface but of a good base on which to carry on stage construction.

In one of the Ontario counties it had been the practice for some time past to spend approximately $125,000 a year for road maintenance. This expenditure served merely to put a certain amount of road mileage into a temporarily satisfactory condition. This year the same county spent $90,000 and as a result has 50 miles of improved road which is a permanent asset to the community.

The cost of a highway system over a period of years is the construction cost plus maintenance charges. In Canada today the populous districts are served by an elaborate system of permanent trunk highways but it is economically imperative that the good roads system be extended to serve those people who are not located in the most populous areas and nearly all of whom are
engaged in the basic industry of agriculture. The farmer is demanding and is entitled to good roads. By the use of asphalt such roads can be built quickly and at a cost little if any more than the cost of maintaining an untreated road in good condition for a period of 12 months. As the weight of traffic increases, maintenance operation may be so conducted that they will continuously improve the road and over a period of years it can be developed into a first class highway of permanent character. In other words, the farmer need not rely on the mud to town and market at one end and the same time, paradoxic as it may seem, the rural constituencies can be enjoying their good roads and building them. This has been demonstrated in Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia as well as in many parts of the United States. Only a little while ago when we thought of road construction etc. thought of detour signs, of enormous machines belching smoke, of fleets of trucks carrying great quantities of materials and hundreds of men trundling barrows, and of very heavy costs. Today in the rural districts we speed smoothly over highways in the making—roads that are in process of construction under a plan that spreads the work over a period of years (though it gives immediately and at all times a splendid surface). This plan entails costs comparable to mere maintenance charges for roads of very inferior character. Here and there we see a gang of men at work, a grader in operation and a specially equipped truck spraying asphalt on the surface—and that is all there is to it. All the work is cumulative. As local conditions demand and as finances will permit, a first class highway is evolved. All the money spent in maintenance becomes an investment of permanent value instead of being dissipated each year.

A mile a day. This $13,000 investment in truck, tractor and grader can build a mile of improved highway in a day at a cost little higher than the average yearly maintenance charges for roads of inferior quality.

DEVELOPING DRILLERS IN SOUTH AMERICA

IT HAS been the endeavour of the International Petroleum and Tropical Oil Companies operating in Peru and Colombia respectively, to instruct the Nationals of those countries in the technique applicable to drilling, production and other field activities. This work has been particularly successful although the workman is handicapped in several ways. One of the most serious drawbacks is his lack of experience and of the mechanical background which develops, mechanics in other countries. Another is the lack of technical vocabulary in his language as well as of the Spanish literature available to English speaking oil workers. Also, it has been necessary for him to receive instruction from foreigners whose knowledge of Spanish is limited. In spite of all this, results indicate a high degree of efficiency on the part of the workers.

To illustrate the efficiency of these workmen in Colombia a few months ago a rigging up crew, under Captian Sam Palacio, fitted all drilling equipment at Well 188 in three days. This was considered a fast job. A move was made from Well 89 to Well 85, a distance of 135 kilometres, over hilly roads. The work of moving began at 6 a.m. on one day and rigging up was completed at 1:30 p.m. three days later.

The equipment handled by these crews is heavy; the rotary table weighs 6,000 pounds, the draw works, which raises or lowers the swabbing, 15,000, the engine 6,500, the travelling block and hook 4,500, the Kelley and swivel (part of the rotary drill) 2,500 and the pump 6,100.

The crew travels from one location to the next, working in eight hour shifts. When a site is reached the rigging up crew erects the 120 foot steel derrick. Before the derrick goes up it is necessary to build concrete pillars on which it can rest, as wooden foundations would be completely destroyed by termites, or white ants, within a short time. The drillers then come on the scene, also working in eight hour shifts. Each driller has his crew of helpers. It takes from 30 to 60 days to strike oil, depending on the nature of the structure.

When oil sands are reached the well is tubed, the drilling rig is dismantled and the pumper, a light derrick about 80 feet high, is erected, and the production department takes charge.

The living conditions of these men are comparable to those in any North American industrial community, and in many respects superior to those prevailing in some oil fields. Their achievements in rigging up and drilling show that they are equally as capable workmen as are foreigners and much credit is due to the companies who undertake to train them and look after their welfare, thus furthering the interests of the countries in which they operate.
Metallurgical Industry at Trail, B.C.

The spectacular development of the Consolidated Mining and Smelting Company's plant and activities at Trail, B.C., is somewhat reminiscent of a certain far farm prospectus which stated that "the cats ate the rats and the rats ate the cats" to prove that there was practically no overhead and therefore a considerable profit. In this case, new products have necessitated new plants, and new plants bring into being still more new products—an ever lengthening chain. From a pioneer mining and smelting concern is evolving what kids fair to become Canada's largest chemical industry. This chemical company has utilized such insignificant by-products as the sulphur dioxide in its fumes to produce a wet process phosphoric acid plant and a new synthetic ammonia plant was built. The mountain streams provided an abundance of cheap power and to take advantage of this, electrolyte cells were selected as a source of hydrogen.

The smelter plant covers 160 acres and employs approximately 2,000 men. It requires 90,000 h.p. of electrical energy. Its daily capacity is:

- Lead—425 tons, zinc—400 tons, copper—60 tons, silver—20,000 ounces, in addition to 2,500 ounces of gold and 90 tons of cadmium a month.

The fertilizer plant, which converts the waste fumes from the smelter into valuable and marketable commodities, covers 60 acres. It employs 400 men and uses 34,000 h.p. of electrical energy. It has a plant capacity for sulphuric acid of 375 tons daily and from 800 to 400 tons of fertilizer products. While the expansion programme was built around the recovery of as large a proportion as possible of the sulphur dioxide escaping from the smelter stacks, another primary raw material, phosphate rock, is available on the company property at Crow's Nest, B.C. About 450 tons of rock is required for one day's operations.

The Consolidated Mining and Smelting Company, Limited, also maintains a dairy farm, one of the best equipped in the Dominion. There are 240 cows in their herd and the average daily output of milk is 350 gallons. The cattle are Ayrshires and about 60% are registered.

The whole expansion programme was carried to completion in less than two years. It has required not only large physical and financial resources but also great technical skill and unusual business ability. It is said to be the beginning of a tremendous chemical development in western Canada.

Cheap power has been a factor in establishing the electrolytic zinc factory at Trail. At two points on the Kootenay River the company has power plants, the one at Bonnington Falls with a total generator capacity of 82,000 k.v.a., and hydro turbines developing 98,000 h.p. At the other point, South Slocan, the generating capacity is 52,000 k.v.a. while the turbines provide 75,000 h.p. When the development at Crow's Nest is completed, it will bring the total installed horsepower to 224,000. Waste heat boilers at the slag treatment plant of the lead smelter supply all of the process steam requirements of the chemical and fertilizer operations.

The Consolidated Mining and Smelting Company co-operates with the Dominion and provincial departments of agriculture, the colleges and universities, the Canadian Pacific and other bodies vitally interested in the progress of Canadian agriculture. It publishes comprehensive, well-written pamphlets on the subject of fertilizers, for the guidance of Canadian farmers.

So large a concern must be constantly prospecting for new mineral areas and to aid in the search they have installed their own fleet of planes. During the spring on the prairies, however, the planes were occupied in the transport of the company's service men who answered the call for assistance from the prairie farmers.

Such a concern consumes enormous quantities of petroleum products, including gasoline, kerosene, aeroplane fuel, asphalt and lubricating oils, and most of its requirements are supplied by Imperial Oil, Limited.
FRIENDS IN THE NORTH COUNTRY

INSPIRED by a newspaper item, one of the Hudson's Bay Company officials penned a letter to Harvey L. Weber, Imperial Oil agent at The Pas, Manitoba. It reads, in part, as follows:

Fort St. James, B.C.

Dear Harvey,

I have arrived here from a long journey inland and have been traveling since the early hours of morning. The days have been cold and raw, with high winds and icy rain at intervals; in fact, one of those days that makes water travel in a small open boat a miserable and much over-rated pastime.

I have had my dinner... and before a large open fireplace I stretch my legs in front of the blazing logs as I sit deep in an easy chair, surrounded by cushions. Comfortable! Yes, very! I gaze through half-closed eyes at a small white kerosene lamp, which, like myself, is enjoying the pleasant warmth of the fire. I savor and pick up a paper that lies on the floor beside me.

It is the Nakina Chronicle, a small weekly sheet for the community in and around Vanderhoof, B.C. I gaze idly, and without much interest, at the pages. But wait! Here is something about a seaplane base at The Pas and, as I once had a nodding acquaintance with that frontier town, I might as well read what it all about, and so I read. My mind rotsates at about the speed of an airplane propeller and I murmur to myself: "The Pas, Imperial Oil, Harvey Weber."... I think of other places and individuals, but come back again to Harvey Weber of The Pas... until it seems that the two are inextricable and I am reminded of the very pleasant personal association connected with the name of Harvey Weber and Imperial Oil, an association which I flatter myself, was one of mutual good-fellowship, apart altogether from business contacts, and it is that good-fellowship that prompts this letter and speeds it on its way.

I presume you are aware that as from June 1st last I became district manager of British Columbia District so that I think I can safely say that I have seen this great Dominion from the Labrador to the Pacific. Since the month of May, I have, with the exception of about two weeks in Vancouver, been continuously on the move. I have been to Alaska and The Yukon, besides seeing a good deal of the interior of B.C. I have gazed on mountains whose snow-capped tops were hidden in the clouds. I have literally "shot" through canyons that have made my hair stand on end. I have seen men panning for gold that reminded me of some of R. W. Service's poems. I have seen men and gold nuggets. I have seen totem poles and pot-latches, and many other things that were strange to me, and when I return to my home in Vancouver, I can go to the finest natural harbor in the world, bar one... and there watch ships come and go from the distant ports in this world in which we live. It is all so fascinating, so different from life on the prairies, and I would suggest that if you have not yet visited Vancouver, that you do so this winter, when I hope to be at home to welcome you.

And now I feel I have written enough for the present. The kerosene lamp is now in a better position. The Pas, until it seems that the two are inseparable and I am reminded of the very pleasant personal association connected with the name of Harvey Weber and Imperial Oil, an association which I flatter myself, was one of mutual good-fellowship, apart altogether from business contacts, and it is that good-fellowship that prompts this letter and speeds it on its way.

DUMPING DUTIES REMOVED

ANNOUNCEMENT on October 28th last that the Government had removed the dumping duties on gasoline gave rise to the question: "What will this have on gasoline prices in Canada?"

Inasmuch as the dumping duty has never affected the price of gasoline in Canada it follows that its removal will not affect the Canadian price structure.

Page Twenty-Six

CHURCHILL IS GOING MODERN

by A. J. Dalrymple

DEVELOPMENT in the sub-Arctic has been so rapid within the last few years that only those in actual touch with it can appreciate what has been accomplished and among the men who hit the trails in the far places a loosely-bound fraternity has formed. It is called the "I Remember Club". A man automatically becomes a member when, during the conversation, he suddenly exclaims: "I remember when..." and goes on to tell his campfire or bunkhouse story.

The membership of this club was augmented by a number of motive-power men when Imperial Oil, in the van of industry, constructed a warehouse on the terminal trackage of Churchill. This was the first warehouse of any kind to be built in the new deep sea port, and furnished much conversation material. Men sat on the Government pier, they gathered in Tom Riddoch's trading post, and in the tents of trappers along the Churchill River. The conversation went something like this:

"Gas is down to 16½ cents. I remember when it was $1.60 a gallon, when they brought it in from the south by dog train in 1926."

"Yes, I remember. I used to pay as high as $3, a pound for flour, but that was before the outboards cut the price of freighting and before the Hudson's Bay line steamed in here."

Since the coming of oil in 1929, a 2,500,000 bushel grain elevator has been completed at Churchill. It was filled for the first time this spring. Outgoing and incoming cargoes are assured. A townsite has been laid out, and the building of the Imperial Oil warehouse is looked upon as auguring well for the town's industrial future. The warehouse was begun in June of this year and is situated just south-east of the storage bins of the elevator. Flanking the warehouse are two tanks with a capacity of approximately 15,000 gallons each. Supplies of gasoline, kerosene, and other petroleum products are stocked.

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Speaking of grease, it is not so long since the only kind used in far north transportation was elbow grease; the strong arms of the voyageurs handled the sweeps of the York boats and the paddles of the freight canoes. Then came that little pioneer known as the outboard—handy, compact, powerful—and transportation in the wilderness was transformed. Captain Harvey L. Weber, of The Pas, Manitoba, is credited by many people with having brought the first outboard into the Pasquia country.

Nowadays motor boats are lumbering along the lakes and rivers, even along the shores of the inland sea of Hudson’s Bay. They convey prospectors and priests, traders and trappers, to destinations in the barren lands. Motor ships ply the lakes and larger rivers, employed in the coastwise trade or carrying expeditions both scientific and religious. The first ship to leave port in the spring of 1932 was the Lady Logan, gasoline powered, bound for the Chesterfield Inlet region with a party of Government geologists. The Hudson’s Bay motor ship Fort Severn carries oil and grease to the company’s posts along the shores of Hudson’s Bay. When the Lt. Rev. Arsenio Turqueti, better known as “the Bishop of the Arctic”, left Churchill aboard the motor ship Thera with supplies for the mission at Cape Disko, he carried a deck cargo of gasoline.

There are no seadogs or Robinsons in Churchill. The only “car” is a truck used by the Roman Catholic mission to transfer supplies. But there are caterpillar tractors, Lynn machines, gasoline locomotives, gasoline shovels in the gravel pits, gasoline tenders used in connection with harbour dredging, and the ever-present outboard. Speeders on the railway pound the rails to the tune of rapid-firing gasoline, as they carry officials, doctors, forest raters, rangers and police into and out of Churchill.

Aeroplanes, also, draw on the Imperial Oil storage on their way to and from the distant outposts. A Junkers low-wing monoplane, operated by Canadian Airways, added to the story of northern achievement when its pilot W. J. (Buck) Buchanan took off from Churchill for Windy Lake with three tons of supplies, including gasoline for a cache.

The picturesque days of voyageur and sail are gone, tractors are replacing dog teams on the winter trails. The North is showing a kinder face to those who have passed the test of courage and endurance. With the establishment of industry, and the consequent lowering of prices, the development of these outposts will move forward rapidly, and the members of the “I Remember Club” will shake their heads sadly over the changing ways, sighing for more Norths to conquer.

Gasoline module being used in terminal work on the sub-Arctic railway yards.

Reginald Sinden

EARLY in the biography of many a great business man this sentence occurs, “He began his career as office boy with . . . .” The next significant statement is, “After serving a short time in this capacity he was promoted to . . . .”

And so on, all the way up the ladder. There are so many young men waiting on the threshold of business that unusual qualifications are necessary to pass over it; the one selected to fill a vacant post must stand out from the rest by his aggressiveness, his diligence and his initiative—must have desirable characteristics. He is entering the hard school of business where the tests are severe and there are few chances of “taking the year over.” The office boy who is content to remain in that capacity is a poor office boy and seldom worth hiring in the axon that rules the employment office of modern industry.

In the Imperial Oil organization there are many opportunities for young men and the company’s history contains numberless paragraphs describing the upward climb of lad whose energy and loyalty made them worth watching and helping.

Representative of the type of boy who makes the man who builds the Company is Reginald Sinden. He was born in Toronto, on Dominion Day, 1912. After completing public school he attended North Toronto Collegiate. Even as a school boy his bent for business asserted itself as he utilized his vacations to accumulate a varied experience. One year he was employed on a golf links, another at a service station, another in a butcher shop, so that when he matriculated and set about looking for a permanent position he was better equipped than the average boy.

His apprenticeship at the service station initiated him with a desire to work for an oil company with the result that Imperial Oil was the first objective in his search for steady employment. Although he was told then that there were no openings and probably would not be for some time he filed his application and went steadily on looking for a job. At the end of August 1930, however, a call came and he started to work in the Order Department of the Toronto Sales Division of Imperial Oil Limited.

In common with those of most office boys his duties are many and varied. He takes home to every department of the Company’s building at 56 Church Street, to the Princess Street warehouse, to many places in the city and occasionally to points outside. Then he comes into contact with the men engaged in all the company’s activities and also with many in other lines of business. An enterprising boy finds this stimulating and uses it to broaden his knowledge of business in general. One of Reginald’s chief duties is to officiate at the information desk. In order to obtain the necessary knowledge to answer satisfactorily the thousand and one questions asked at the counter he has to find out a great deal more than at first seems necessary, this gives him an insight into the working of the firm. The information desk trains him in tact, courtesy and self-control, valuable assets to a business man. It is here he realizes that the public judges the company by him its representative. Sometimes he is called upon to write out orders and file copies of them. This accustoms him to routine and having to search the files for copies of orders teaches him the necessity for this same routine. He can, in his going to and fro, size up the work done by each branch and while he is young and keen make his decision and shape his course toward success in any one of them. He has access to every office and if he shows willingness and aptitude, the leaders, always on the alert for capable successors, will do all in their power to assist in his training.
SARNIA IMPERIALS

A new threat in the race for the Dominion Championship appears on the rugby horizon. At the time of writing, the Sarnia Imperials have captured first place in the Senior O.R.U. for the third time in the last four years and are conceded to be powerful contenders for premiership honors in the fall season. They have literally out-classed the opposition in their own league, rolling up the impressive total of 123 scoring points as against 55 for their closest rivals.

Much of the credit for the Imperials’ success must go to their efficient coach, “Pat” Ouellette, who has perfected a new style of play for Canadian football. Although the line is big and heavy, its members do not carry the ball as much as is usual in our games but confine their efforts more to checking and providing interference. Two complete backfields, in which each individual is a star, look after the ball-carrying duties, and their end-runs and passing plays are a treat to watch.

Hugh Stirling, the captain, is regarded by experts as one of the three greatest centers in Canadian rugby. One of the team’s most important executives is Ace Van Alyt, business manager of the club. He has been connected with Sarnia teams for many years and is largely responsible for the healthy condition of Sarnia rugby at the present time.

The Imperials will face much stronger opposition in the play-offs than they have encountered in their own league. The hardest part of the battle is still ahead of them.

Most of the team are Imperial employees, some of them with many years service to their credit. Their fellow employees from the Imperial oil company come to Imperial Oil to carry their exploits with enthusiasm even though they cannot be present at the games to show encouragement.

CALGARY

Dr. Theodore A. Link, Geologist in Western Canada for Imperial Oil, Limited, has been granted leave of absence for six months from his duties with the company. He is going to take charge of the designing and construction of models and exhibits in geology, under the auspices of the American Petroleum Institute, for the International Exposition at Chicago in 1913. He will leave for Chicago on November 1st, 1912. Readers of the Review will recollect the various interesting articles on geology contributed by Dr. Link from time to time.

MONTREAL

T. D. Lloyd Retires by G. R. K.

Life is not the greatest gift, but the things we put into life are what make it worth living, and in looking backward thirty years...

H. T. Palmer, one of the senior salesmen of Montreal Division, recently won the best gross, 18 holes in the Knights of Columbus golf tournament at Marlborough Golf and Country Club, to beat Clark Foran, famous coach of the M.A.A.A. Football Team.

Bert is known to scores of friends in Montreal, the Province of Quebec, and many other parts of the Dominion which he covered from coast to coast in his early days as a drummer before he joined the Imperial organization nearly 20 years ago. He is a firm and practic-ing believer that if you would get all the good out of life, you must take all the degrees in true friendship and in making friends for himself Mr. Palmer has also made friends for the Company. He claims that goodwill never goes out of style, never changes in face value, and cannot be bought nor bartered.

The Review congratulates Mr. Palmer on his victory by which he won the trophy donated by Dave Mulligan, former manager of the Windsor Hotel, Montreal.

Glancing through an English oil publication recently, our attention was caught by a certain item. It told of a ship injured in a collision and hidden from the rescuing vessel by a dense fog. The officer in charge of the lifeboat decided to follow a trail of oil on the water and by this means succeeded in finding the ship and taking off her passengers. As far as we know this has never been chronicled among the many uses of petroleum products.
EDMONTON

OF THE retirement of Mr. Porter from the presidency of the Ed-\nmonton Chamber of Commerce, Mr. R. F. Turley, has been \nelected president at the annual meeting. Turley has served for many years on the council of the Alberta Motor \nAssociation. In addition to acting as a director of the \nAlberta Motor Association, he is an active member of the \nRotary Club, the Edmonton Club and the High-\nlands Golf Club. One of the Edmonton papers in editorial \ncomment on this appointment says: \n
"The new president, Mr. Turley, has served a lengthy apprenticeship with the Chamber and is well acquainted with its work. The \nqualities that he has brought to his own business responsibilities will stand him in excellent stead during the term of office which he is entering. Complete confidence in \nthe manner in which he will discharge his duties was felt by all \nwho have come in touch with him through his activities in connection with the chamber or otherwise. Under his leadership this old-time organisation, which has its credit nearly half a century's record \nof fruitful effort, may look forward for a year of steadily increasing usefulness."

Mr. Turley has been manager of Edmonton Sales Division of our Company since 1919.

SASKATOON

A NEW relief board has been created by city by-law in the City of 
Saskatoon. It consists of eight members, including the may- \nor, Mr. W. J. Morgan, Mr. D. S. L. Patterson, divisional sales \nmanager at Saskatoon for Imperial Oil, has been appointed as 
chairman of this relief board which will have direct control of \nall unemployment relief in Saskatoon.

TORONTO-HAMILTON

PICNIC in \nSaskatoon

SOMEONE had blundered! was the thought uppermost in the minds of the two thousand or more Imperial employees and families who had intended being at Hartland's Point on July 7th, for the joint jamboree of the Toronto and Hamilton staffs. Old Man Prose quoted me a tag saying that "a good baseball team and stormy showers and thunder storms" and for once he seemed to have guessed right, except for the "mostly fair". The quaintness picniciers added umbrellas and slickers to their paraphernalia and travelled on schedule, the slackness took one look at the programme and rolled over in bed hoping that their absence from the picnic would be noticed by their co-workers as an indication of their presence at the office and vice versa.

At Hartland's Point the perenniaль emilie of Charlie McNair, president of the 56 Church Street Club, did much to dispel the gathering gloom, and even when the skies wept, his assistance was unceasing, his smile by noon was taken for gospel. But at twelve noon it was pouring harder than ever.

Mr. McNair announced that he was on standard time, not daylight saving time. Eventually it trans-\npired that his calculation was based on mountain time, now lost, for lunch had been disposed of before there was a rill in the clouds and the water supply was turned off.

By the time the Baby Show started the crowd had increased to around fifteen hundred, including a particularly strong contingent from Hamilton. As usual, the judges in the baby parade had a hard task in selecting one before another for special mention, and deliberated long and earnestly before awarding the palm.

The sports programme was car-\npried through with a great variety of split and novelty races for young and not so young. There was keen competition in all events.

A new departure in the sports column was a tennis tournament which battled bravely with the weather. As a result of the occurrence of this relief board which will have direct control of all unemployment relief in Saskatoon.

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Page Thirty-Three
orchestra which dispensed snappy music as the evening shades were falling fast. Tripping lightly in the Paul Jones, or undulating in a dreamy waltz, the weather had no terrors, and the master of the storm without was drowned out by the merriment within.

What was a little nist in competition with 1,000 packages of popcorn, 150 gallons of tea and coffee, 100 pints of milk, unlimited quantities of ice-cream, pop, and hotdogs, the whip, the merry-go-round, the clowns, the sports, the dance and the moonlight on the bay.

TORONTO

by John Noss

A mongst the plethora of golf tournaments there are three principal ones. The British Open, the American Open and the G.H. Smith Trophy, the first two are international affairs but the latter is distinctly "Imperial".

This year's annual competition for this trophy, emblematic of the championship of the 56 Church Street Club, started out on an ideal day in the leafy month of June, when approximately 80 golfers, or perhaps we should say, 88 approximate golfers, teed off at the Royal York course in a preliminary round. The best 12 scorers qualifying for further participation in match play.

Although no one broke the course record, many creditable scores were turned in, the best performance being by Norm Ford of the Service Stations, who had the low gross score of the round. There were few surprises amongst the qualifiers, the cream of the club to the top, but it was noticeable that some of those who were amongst the "also-rans" last year, had been practicing assiduously and gained places in the charmed circle.

The match play provided the proverbial upset. Jimmy Pope, who had won the trophy twice and only required another success to place it permanently amongst his family trophies, hit the class. "Bobby," he said was the 1930 winner and had been a keen exponent of the game, and it was apparent that a new name would appear on the trophy. There were many close games and much good golf before the finalists emerged in the persons of James Walker, Toronto Division and C.S. Wilcox, Tropical standard-bearer.

On the first tee at the Royal York Golf Course

Both of these gentlemen had disposed of redboundable opposition before reaching the ultimate stage and the final was a fitting climax. Played over the Lambeau course it consisted of 36 holes of match play, and Jimmy Walker emerged as the winner after a nip-and-tuck contest.

The full prize list is as follows:

- Qualifying Round
  - Low Gross, A Flight - N. Ford, Service Stations
  - Low Gross, B Flight - N. Allen, Toronto Division
  - Low Net, A Flight - G. Allen, Toronto Division

- Match Play
  - G.H. Smith Trophy and miniature - J. Walker, Toronto Division
  - Runner-up - C. S. Wilcox, Tropical

Fired by the example of the men, the ladies' golfing section staged an afternoon tournament at the Toronto Ladies' Course during September. The weather was glorious and the entry was small, but select.

The ladies have no trophy to compete for as yet, but Mr. C. McNair, President of the Club, donated handsome prizes and was accompanied by his secretary, Miss Jessie Turoc, to see the ladies tee off. There was a suggestion that he should drive the first ball, but this was vetoed as Mr. McNair did not want to discourage the tyros.

The only untoward incident in the preliminaries was when one lady lifted the easter-tough off the cake house with a hefty practice swing but eventually they all safely negotiated themental hazard of the first tee and departed into the eye of the western sun, some on a bee line and some tacking against the wind.

There is no truth in the allegation that the Toronto ladies took in the sign reading "Replace the turf" and substituted one reading "Returrf the Place", neither is it the case that one of the fair contempitants phoned the office for an adding-machine; it perhaps wasn't championship golf all the way through, but it had its moments, and incidentally discovered a player of no mean ability in the person of Miss E. Cummings, International Pro, who won first prize.

Judging by the score she turned in, our male golfers would have a hard time keeping Miss Cummings away from the G.H. Smith Trophy if she cared to enter and we wouldn't like to match her with Jimmy Walker for an exhibition game. Miss Cummings comes by her golf honestly as it is a family asset, her father being one of the best-known pros in our neighborhood.

Second place was taken by Miss Peggy Robinson, General Sales, who made a good recovery after a shaky start. Miss Athol Mitchell, Purchasing Dept., won third prize for the best score on a "sealed" hole. The winning score almost indicated a "concealed" hole which took some finding, but that is golf all over.

A consolation prize donated by Col. E. A. Oliver for the highest score of the day was bluntingly claimed by Miss Jessie Turoc, Purchasing Dept. But she had no walk-over as some of the others were close on her heels.

56 CHURCH STREET CLUB

The annual meeting of the 56 Church St. Club was held on Monday, March 18, 1930. Mr. C. McNair, president, was in the chair and about 5% of the membership
brief illness caused by blood poisoning due to getting a small piece of steel in his arm.

The late Mr. Garnett, who was in his thirtieth year, had been a member of the Sarnia sales force for nearly two years and had in this short time proved that his future with the Company would have been one of progress. He is deeply mourned by his many friends and associates.

Edgar Garnett was deservedly popular with everyone and his cheery smile and constant eagerness to be of service are sadly missed by those who knew him.

He resided with Mr. and Mrs. R. J. Duggan, 198 Bright St., Sarnia, Ont., where a service was held on June 16th, after which the remains were taken to the family residence at 2 Samuelson St., Colt, service being held there on June 16th, internment taking place in Mount View Cemetery, Colt.

A further distinction was conferred upon F. J. Wolfe, Chairman of the Board of the Anglo-American Oil Company, Limited, and former Vice-President in charge of Marketing of Imperial Oil, Limited, when one of the new tankers recently built for the Standard Oil Company (N. Y.) was named in his honor. Mrs. Wolfe was sponsor at the christening which took place at Veere, Holland. The F. J. Wolfe is 442 feet long, has a deadweight tonnage of 7,300 tons, and attains a speed of 15 knots.

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**Obituary**

**SARNIA**

The death of Edgar S. Garnett, a tank wagon salesman at Sarnia, occurred on June 15th, 1932 in the Sarnia General Hospital after a

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**CALGARY**

CLIPPED from the Calgary Herald, October 4th, 1932.

Donation of 1,800 gallons of fuel oil, worth between $2,700 and $3,000 has been made by A. H. McQueen, vice-president of the Imperial Oil Company to the Anglican mission at Alkaidjik toward the cost of operating a powerful X-ray machine in the new hospital according to an announcement made Monday by Ronald MacKinnon of the Calgary headquarters of Imperial.

Mr. MacKinnon has just returned from Fort Norman where the Imperial No. 2 well has been placed on producing in view of the activity at the Great Bear Lake mineral fields. He states that 2,000 barrels of oil were produced at this well during the past season. The refining resulted in 10,000 gallons of gasoline being made available for marketing. About 25,000 gallons of fuel oil were produced in addition.
Take your choice of sunsets! Above is the wild, rugged beauty of the Mackenzie River district in contrast to the alluring loveliness of tropical Colombia, pictured below. The oil seekers have paused in their tireless search to record these gorgeous bits of scenery.