THE
IMPERIAL OIL
REVIEW
Research in Petroleum

The following is a part of an interesting paper by A. W. Ambrose, Chief Petroleum Technologist U. S. Bureau of Mines, read at the Second Annual Meeting of the American Petroleum Institute.

It is commonly stated that the petroleum industry started in 1859, when Colonel Drake drilled the first well. The output of refined products, however, grew very slowly at first, and the relative demand for the various products has frequently changed, so that it is only within the last few years that the industry has developed along its present definite lines. Originally refineries were operated to produce as much kerosene as possible for illuminating purposes, and it was not so many years ago that gasoline was a drug on the market and difficult to get rid of. In fact it was mainly thrown away.

Today, more is developed for petroleum products, and today gasoline is one of the most important products. The demand for gasoline was created largely by the development of the internal combustion engine; in fact, perhaps nothing has so revolutionized refining methods and enhanced the value of petroleum as have the demands of the automotive industry. The increased demand for gasoline has made the world appreciate the value of petroleum and the need for its conservation.

All of us present can perhaps remember when the first automobile was driven; it is only during the last few years our Navy has used oil in large quantities, and it was less than ten years ago that the production of cashing gasoline became of importance. So, in fact, the petroleum industry has actually had but a few years in which to standardize its refining methods. Compare this recent development to other important industries in the past, we know that all, of which we have had many years to develop along fairly definite lines.

The inherent qualities of petroleum make its conservation a difficult problem. It is a fluid and needs containers for storage; it cannot be piped or stored in any manner unless tightly enclosed, just as water will be in an open basin and due to its density, if given the chance, it will migrate to barren oil sands where its recovery is difficult.

Many Loose Ends

During the comparatively few years mentioned above, there has been built up a very large industry, totalling investments into the billions of dollars. With such a rapid and large growth of a product whose inherent qualities make it difficult to conserve, obviously there are many loose ends which need to be tied together. So, even though the development of this enormous industry has been actually wonderful, yet this very rapidity of growth has caused much confusion. I believe, left room for many improvements. In many cases these improvements will be indicated by practical research, which has already demonstrated its value in the petroleum industry.

Much research is ultra-scientific and closely associated with theoretical deductions. As a result, some people feel that all research work does not tie up with the business of the industry. This is a mistake, for engineering research and investigation can in many cases be easily translated into large financial returns. Often a piece of work of a few weeks’ duration will give results that can be easily measured in dollars and cents. For example, an oil company in the Mid-Continent oil fields approached the Bureau’s field man at Bartlesville, Oklahoma, on a problem of sour gasoline. In less than one week, tests had been carried on which demonstrated that the gasoline could be made sweet by means of a treatment costing one-tenth of a cent per gallon. The company had a production of gasoline of 250,000 gallons per month, and as a result of this one week’s investigation they sold their gasoline for an additional 2 cents per gallon, increasing their revenue about $7,500 per month. That is what I call practical research.

There is, of course, another type of research that extends over a long period of time, but often this furnishes fundamental data in the basis of further work. It is difficult to show that such work has a money basis, but it is there just the same. The petroleum industry is a practical type of research concerning the immediate problems at hand and that of a more scientific nature which furnishes fundamental data.

Investigations Which Need Immediate Attention

It is not the purpose of this paper to list a number of research problems, but rather to cite a few of the investigations which need immediate attention. Perhaps the most important problem today is a study of the better utilization of the fuel oil fraction of our crude oil. Fifty-five to sixty per cent. of the crude oil produced in the United States is burned directly under boilers to produce steam, and this percentage indicates the importance of the problem. It seems advisable, when we have a limited supply of fuel oil, that it should be utilized as readily as a Diesel engine as by steam turbines or other forms of engines. The reason for the desirability of Diesel power is evident...
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from the following: An ordinary steam engine power plant in which fuel oil is burned directly under boilers continues to deliver all of the heat which the fuel oil supplies from 10 to 12 per cent. If this same fuel oil is used in an internal combustion engine of the Diesel type, the efficiency will perhaps be as high as 30 per cent. This means that a given amount of fuel oil will supply three times as much work as before.

The trend at present, therefore, should be towards the use of Diesel type engines.

Steam boilers, however, for use under steam boilers, and there is room for improvement in the design of burners for handling this new oil. We have often seen atomizing burners and mechanical burners. The possibilities of such investigative work was indicated when boiler inspectors in California, in the service of the U. S. Fuel Administration, demonstrated that fuel oil could be burned in high pressure boilers and that plant inspected could be reduced 5 to 25 per cent, by making simple tests and repair work which involved no new purchases of expensive equipment.

A most important problem today is the better utilization of motor fuels. We have just taken part in a symposium on this topic, and have heard of Government departments, the Society of Automotive Engineers, the American Petroleum Institute, and members of automotive research laboratories who are studying this problem from various angles, but we should appreciate that sooner or later the automobile owner must face the necessity of using motor fuels containing hydrocarbons.

Cracking will probably become more and more general, and the products of oil from oil shale also will undoubtedly be in high unsaturated hydrocarbons. The vast deposits of asphalt, lignite, oil sand, and oil shale, located throughout the different parts of the United States, Canada and the South American countries, furnish indubitably some of our future gasoline.

The possibility of the recovery of lighter oils from cellulosic substances should be investigated, for the supply is almost unlimited. The Bureau of Mines has been working on this problem for a couple of years, and has demonstrated on a laboratory scale that it is possible to recover the oil contents of almost every plant product and to even recover from the heavy asphalt light oil with a gasoline content of perhaps 20 per cent. The results of this work indicate that we can expect such oils to be highly unsaturated. Investigations should be made to know which of the unsaturated oils are useful, whether they can be eliminated, and how can they be distinguished one from another. It would seem good judgment not to put off a study of such a problem until the day arrives when we are forced to use more of the coal and the oil fuels.

Study of Lubrication

Perhaps one of the most neglected branches of investigative work of the petroleum industry is the scientific study of lubrication. Most users have little idea of the proper lubricant for their special purposes. Considerable confusion continues to exist, because of the fact that certain lubricants do not give satisfactory service. Proper lubricants are not available, however, as to the reason why some lubricants work in some cases while they do not work in others.

A most important problem in refining engineering is the production of cylinder oils for steam engines and gasoline engines. Cylinder oil is also used in the Appalachian district. Today a large part of the cylinder stock is obtained from Appalachian crude, and the attempt to treat other crudes is very limited. We have apparently been willing to accept this condition without studying the possibilities of the various fields.

Barreling and Marketing Reports


In 1913 a booklet was issued "Distribution of Expense in connection with the Barreling and Marketing Reports" and other rules in relation to home office accounting as effecting the marketing divisions. This book, generally known as the "Primer," has been the basis for the marketing accounting and for the barreling and marketing reports for the past nineteen or twenty years.

The dates of birth of the "Primer" was held in the early fall of 1913. A new "Primer" has been adopted and in the main the rules as agreed upon will be used in making up our barreling and marketing reports from January 1st, 1922.

The barreling and marketing report really provides for two separate and distinct reports. The object of the barreling report is to arrive at a barrel price for gasoline and steel barrells, and how nearly as possible the actual expense of preparing these two kinds of packages. Briefly, preparation of wood barrells will now cover all expense from the time the empty barrells are received at stations until they are filled.

All expense subsequent to the time that the barrell is filled will now go into general expense. Iron barrell preparation covers all expense from the time that the iron barrells are received at the stations until they are ready for shipment to the trade and would include such operations as painting, filling depreciation, handling and handling while empty, freight on barrells shipped for repairs, worn-out barrells at book value, sundry supplies, etc. This is practically the same as the old rule with the exception that barrell cost on book value of worn-out barrells was charged direct to profit and loss.

The Dufferin Construction Co., who have the contract for the new road on Dunda Street, between Waterdown and Erindale (a distance of 15 miles), are using exclusively Imperial products on all their work. The work on this road is almost stupendous as they have to cut through solid rock a distance of 3½ miles.

The proper lubrication of equipment is absolutely essential. Any hold up in motor equipment, entails considerable expense for obtaining supplies are not of the best.

It was with this in view that our representative, Mr. A. E. House, was able to obtain their business in Imperial products.

At the present time they are operating 16 Mack 5 ton trucks 24 hours daily, each consuming approximately 25 gallons Imperial Premium Gasoline and one half gallon Imperial Polarine Oil per day. Crashers, road rollers, and steam shovels form another branch of equipment which are lubricated with Imperial products such as Imperial Capital Cylinder, Imperial Valve Oil, Imperial Atlantic Red Oil, Imperial Artic Cup Grease and Imperial Mica Axe Grease.

Since starting on the job in June last they have used a considerable amount of Imperial Polarine Oils and Imperial Premium Gasoline and before May 15th, 1922, we will have delivered to them over 100 barrels Imperial Polarine Oils. Their requirements this year have been taken care of from our Hamilton warehouse, and altogether service and oil have been entirely satisfactory. One more victory for Imperial Service.

They endorse our products and our service as follows:

To Imperial Oil Limited,
Hamilton, Ont.

Dear Sirs:
By way of recommendation on your Polarine Oils and Premium Gasoline which we have been using for the past nine months on all our equipment. The necessity of proper lubrication to us, is one of vital importance, our work being the heaviest possible on equipment.

Each one of our trucks is using the proper grade of Imperial Polarine Oil with the best of satisfaction.

The results we have obtained with your products, together with excellent service from your Hamilton branch, all go to make us a satisfied customer.

Yours truly,
THE DUFFERIN CONSTRUCTION CO.,
Perry—Lenard Langham.
Having safely survived the deluge of spoken or written reservations of the most contradictory nature from the world's knowledge of advertising, let us ask why we do not apply written words of wishful solace, encouragement and guidance for the members of the 'Imperial' family.

Were we to follow our own inclinations this article would deal with the explosive nature of 'home-brew', but the Editor has requested that we follow certain specified 'speculative' and with a few pointers on 'Salesmanship'.

Never having, in our hitherto honorable though somewhat unregarded career, sold anything more offensive than a concert ticket (which the contracting party neglected to pay for) we feel eminently suited to drop pearls of wisdom for the enlightenment, more especially, of our Sales Staff, although we do not doubt that all our readers will benefit thereby.

Some writers believe in acquiring a deep knowledge of any subject they embark upon, but we have always found that a too intimate acquaintance with one's subject was a hindrance rather than a help, as the effort to conform to the literary conceptions we had so liberally cursed our natural imagination.

However, 'to our mutters', as our more voluble colleagues, and glibbant afflicts the French, would remark.

_A Sincere_

The word 'Sale' may be found in the dictionary between 'Safarics', meaning cooking sledges, and 'Salamander', which refers to an act of the Salian Franks excluding females from the Royal succession. (The Brutes.) The import of the word 'Sale' is to sell; 'Salamander' the art of the man who sells.

Far be it from us to question the truth of this expression, for 'Sale' is as necessary to the sale of any 'art' is required in selling Imperial products, their excellence to be appreciated by the public.

Business methods have changed and now a 'representative' is usually a slick young man with a line of bull which would turn Aanuus green with envy, and leave long distance talkers like an Edison Bell Record at the post.

Dumpty is likely to do all his travelling (there were no 'coaches' then) was the intimate friend of his clients, knew every detail of their personal history and private life, and never talked business, but he had discussed the more important affairs of state over a glass of iced water or saddle leather. Business methods have changed and now a 'representative' is usually a slick young man with a line of bull which would turn Aanuus green with envy, and leave long distance talkers like an Edison Bell Record at the post.

The scraper will be well advised to change his tune, as the day is past for courting your prospect, grabbing him by the throat, hammering him (verbally or otherwise) into unconsciousness, and yanking an order out of him as you would a diseased molar. 'Can the ginger stuff if you can, and specialize in Peaceful Penetration, it's the winning card in the long run.'

Facts, beside which Napoleon's crossing of the Alps, Beatty's task at Jutland, and the discovery of Panama by Columbus fade into nothingness, are daily being performed (if one believes the writers) by these silver tongued operators who turn the public next to bonds, real estate, sewing machines, automobiles, tomb stones, or anything else which is saleable, and can only thank the providence which prevented us from becoming a purchasing agent, and denied us the influence which would make us worthy of any self-respecting salesman's attention.

Of course we have had our worries, but, with the exception of a little insurance, a few sheds of books and a combination safety-razor, potatopeeler, we have so far escaped scathless. This is partly due to the fact that we always converse effort, the compass, direction and guidance, the level and transit call for careful calculation, and the annual reports upward progress.

Finally the geologist looks for 'faults', the salesman must avoid them, and both must see that they furnish a true report of their doings for their superiors' edification.

Then comes the Driller. He camps on the location, a lesson in perseverance; he gets near the surface, the incentive to thoroughness; he keeps his facts sharp and keen as the salesman must keep his with an incentive to action and a reason to pay.'

As the hierarchies of the Production Department pump the wells to their capacity and see that a never-ending procession of products, so must the salesman secure the limit of business from his territory and send an unceasing succession of orders to the central office.

The Refinery select when they can, and discard the rest, a thought which, if applied by the salesman, would eliminate bad debts, whilst the summing up of the refined products is equally applicable to the kind the salesman is not dealing with. 'By their deeds shall ye know them.'

Were this not in itself sufficient to drive home the great truths of successful salesman, our representa- tion should render their daily aocation, have a ready-made handbook of admonitions and they find the products they deal with, and a hundred per cent efficiency would result were they to spread their samples out and circulate therein. First, don't send them, what they should never be in their approach to, or dealing with a customer. Rather let them be product, and completely without its natural has built them on suitable lines). Their shop talk should be 'illuminating', their argument polished and though 'ghosts' are kept off by a pleasant smile will 'grease' the way for an order. Avoid getting 'nasty', but give him a little 'candle' burning in the night. To sum up, light the lamp of knowledge regarding Imperial products; secondly, by the purchase of your facts; convince the lake-warm with the heat of your honesty conviction; and gain the goodwill of your clientele by your personal and a sympathetic understanding.

Thus shall your youth be fulfilled with promise and your later life will remain with the rewards of honor, influence, happiness and peace.
“By Their Works Ye Shall Know Them”

VI. - Paraffine Distillate—General Oils and Greases.

In the fifth article of this series, the processes used in the manufacture of lubricating oil were explained with some of the reasons why Imperial Polarine excelled as a motor lubricant. Supplementing this, we now take up the "right oil" and "smokestacks," like our automotive oil, the heavier oils are graded to meet certain lubricating requirements.

"Oilingness"

"What constitutes a good oil" is often a matter of the "right oil in the right place," but underlying this is the basic quality of the oil. Professor C. V. Boys in his Presidential address to the Physical Society in 1905 said that "the lubricating qualities of oil depended on something which at present is unknown. It is not viscosity alone. Though the oil trade has known how to make 'slippery' lubricants, no one at present knows what all is and this an important quest of the engine."

The physical properties of a liquid which influences its character as a lubricant are viscosity, density, capillarity or surface tension, compressibility, and tensile strength.

Viscosity is recognized as an important property in oil and it can be regulated to suit certain needs. Density may or may not play its part. Capillarity or surface tension is known to be of great importance. Only a liquid which "wets" or spreads evenly over the surface can constitute a lubricant. In order for the liquid to force itself into narrow spaces of high pressure, it must have a certain action else it would not "wet" or spread over the surface.

Compressibility and tensile strength have not yet been thoroughly investigated, so little is known about it, but that it plays an important part is certain.

An oil must have tensile strength to resist the pressure and to insure a permanent film. The permanent film, according to some scientists, is dependent upon the interfacial tension between the oil and the metal. If the film is broken by the removal of either one of these, it is into an unbroken layer depends upon the tension being low. This may be a "chemical force called cohesion which holds the film together against the active part of the oil molecules and the solid surface of the bearing," stated Langmuir.

Usage the final test

From this it will be seen that even modern science cannot yet determine the exact reasons for an oil being good, by scientific tests or measures, in a laboratory. About the only way one can determine a good oil is by test of actual usage. All the above mentioned properties in oil are, however, worthy of close study and research. It is by the testing and analysis of just what constitutes a good oil that the refiner is guided. The greater and more complete that knowledge, the more satisfactory are the results. New processes are continually formulated to bring out those properties which enhance the lubricating value of an oil.

The Right Oil

But in addition to the basic study of the physical characteristics of oil, there is another very large field for the refiner to study—the lubrication requirements of every type of machine. The speed of shafts, size, quality of material used, pressure and a score of other things enter into this study of lubrication. Various machines require oils of various consistencies, and it is the selection of the right consistency that constitutes one of the large problems of lubrication.

Lubricating Manual

In the manufacture of our many lines of lubricating oils, a selection of the "right" oil plays a leading part. Experts with the assistance of all the facilities and knowledge that modern science can produce, have classified these oils in the form of a Lubricating Manual. In this little book every form of lubricating problem is covered, the grade of oil to use in each case is clearly stated. Thus for steam cylinder lubrication, the various pressures and the pressure per square inch is carefully considered while the steam used (super-heated, saturated or dry) is also considered. The methods used in applying Red Oil, are adapted for slow-speed and high-speed machinery, and for electric motors. For Dynamos and electric motors Imperial Renown Dynamo Oil and Imperial Royal Dynamo Oil are recommended.

Uses of Scientific Research

There are oils and greases especially manufactured for steam turbines, crank-cases, gear engines, stationary engines, kerosene engines, Diesel and Semi-Diesel engines. There are also other oils made for lubricating farm machinery (Imperial Prairie Harvester Oil and Imperial Elrodor Castor machine oils, thrashing machines, mowers, etc.). There are also a miscellaneous group of oils for tempering and cooling purposes, for use in woodworking (cabinet oil) for use on wool in textile industries; antiseptic oils; cutting oils; blanking oils, drills, skids, chains, etc.; oils for the manufacture of soap (soap oil); oils for softening cordage and twine; oils for tanning leather, and a long list of semi-fluid oils, belt dressings and greases—each one specially manufactured to meet a specific purpose.

The science of Correct Lubrication covers a field of considerable magnitude and requires a life-time of concentrated study to master. We have the accumulated knowledge of scientific research carefully stored away in our scientific libraries and laboratories. We have men specially trained to make use of that accumulated knowledge and to concentrate on further research. As science expands new discoveries are made.

"The science of correct lubrication covers a field of considerable magnitude and requires a lifetime of concentrated study to master. We have the accumulated knowledge of scientific research carefully stored away in our scientific libraries and laboratories. We have men specially trained to make use of that accumulated knowledge and to concentrate on further research. As science expands new discoveries are made. Improvements of machinery and inventions of processes continually improve the quality and efficiency of oil as a lubricant, just as improvements are being made in every other product of our industry and thought."

Confidence

Our company is abreast of the times and moves forward shoulder to shoulder with the advance of science and industrial progress. With this, our confidence in the future and in the products of our company grows stronger. We know that our technical staff are continually concentrating on the intricacies of scientific research. We know that the latest and most efficient machinery and equipment are secured. We know that if any possible improvement in the efficiency or better satisfaction for manufacturing oil existed in this world, we would have it, and we would be making that oil. The ingredient that ensures our future success is confidence in our company, in our goods, in ourselves and the future.

"Multitudes of desired items lie buried under one's hand, lost and useless, because the mind that indexed them thought of them under one category and forgot, and the reasons they searches for them under another category."
The Office Workers 8—Credit Department

Someone once said that all business is founded on faith. This is no doubt true, for without faith business would never have grown and expanded to its present greatness. We must have faith in our goods, our country, and our people.

We must have faith in our customers but today they look for more than just faith from us. They want evidence in the form of credit. We cannot have faith in things that are known to be hollow, for faith is necessary to know things or persons before we can have faith in them. We have faith in our products because we know what they are and what they can do. Likewise we have faith in those customers we know are trustworthy.

Credit is another form of faith and the credit department furnishes the knowledge necessary to create that faith. The credit department is to keep a complete record of every customer, his financial standing, his assets and liabilities and the character and condition of his business. It keeps record of all outstanding accounts and it collects the money.

There are several channels furnishing information on a customer's financial status and business conditions. First there are the ratonable customers, those people who pay their bills when due. Bradstreet's next, those who pay their bills but who keep a more or less systematic record of every person and firm in Canada. But owing to the general character of this information, it is not a very reliable one. One needs more detailed information.

Let us assume that "Mr. Y." has a business and builds Buildings $15,000.00. Stock $5,000.00. No liabilities. He is 50 years old.

Outstanding Accounts $15,000.00. Cash $2,000.00, and no liabilities. He would be rated at $20,000.00. Mr. Z., a third man, has a business and buildings $15,000.00. Stock $5,000.00. No liabilities. He is 40 years old.

Outstanding Accounts $20,000.00, and Liabilities $20,000.00. All of these three parties would be rated at $30,000.00 in Bradstreet's excellent guide to the credit man in determining the "limits" of credit to be extended to each customer.

Co-operation through the marketing division, reports of salesmen on the road and agents in the field all furnish further information on the financial status of a customer.

There are many details with which we cannot deal here. Banks who do not know the percentage of tangible assets, questions of annual "turnover" and consideration of individual character are only a few of the many forms of study and work for the credit department. Its success depends upon the concentration and hard work of those responsible for this work as well as the active co-operation of other departments. As to actual details of the routine work of the credit department the reader might be briefly described as a matter of indexing, checking, posting, maintaining reports and handling correspondence.

Index

When a new account is opened up the index clerk prepares a new ledger sheet, which carries the customer's name in full, address, bank, supplying station, credit rating, credit limit and business, also the name of the salesman turning in the order. These accounts of course are first entered in the file, before the entry.

All matters, advising papers, credit invoices, bank drafts, ticket, orders, checks and all correspondence is noted by the index clerk, who is checked by the comptometer, before they are distributed to the various departments to be written up.

Ledgers

The ledger keeper then receives the sheet and carefully checks it in every respect before entry. If an error is found in the folio, this "double" checking is likely to be perceived and rectified before the entry is made.

Often it occurs that accounts are transferred from one division to another. It is therefore essential that fullest particulars are given on the statement accompanying such a transfer. Credit limit and all other important information before they are recognized or pass their accounts for payments.

Statements of customers accounts are made up about the middle of each month, then brought up to date by writing up daily each new entry until the statements are all written up. By writing up of monthly statements early and adding to them daily, they can be mailed out immediately by the credit department, thus bringing in payments without delay.

A very common and, on the whole, satisfactory method of collecting accounts is by drafts. There are times, however, when a customer presents a draft and prefers to pay by cheque. Often drafts are returned unpaid. In the Ledger keepers can avoid this by making notes of the ledger stating the manner of payment with which each customer prefers to meet his account.

Correspondence

Correspondence forms a great part of the work of the credit department. The mass of correspondence regarding statements, collections and adjustments of accounts, consumes a great deal of the credit man's time. This work can be greatly distributed if each ledger keeper handles his own correspondence on matters pertaining to his particular ledger. But unless the ledger keepers are qualified to write tactful and efficient business and collection letters, it is wise to have each letter certified by the credit man before being sent out. Here lies a large saving in time, by instructing his assistants in the matter of handling accounts the credit man can relieve himself of much detail work and at the same time secure greater efficiency in his department.

Credit Limits

Reference has already been made to credit limits and how they are arrived at. Each customer has a credit limit upon which his sales ledger opposite his account. Ledger keepers must, therefore, keep a close watch on credit limits and check outstanding accounts. When such accounts are reaching the limit specified, it rests with the ledger keeper to follow the customers with statements and letters and secure payment before that credit limit is exceeded.

Remembering that a sale is not a sale until the money has been received, the credit man sees why the credit department is so important to the marketing end of business.

Credit and sales are twins, one working for and with the other. Mutual understanding and cooperation between the sales and the credit department are therefore essential to the welfare of both.

Go to South America

Messrs. Roliff and Warren of our Drafting Department, Toronto, and Mr. Waddell, former geologists of the Geological department in the Mackenzie district go to the South American Oil Fields on March 22nd. The former two will take up their work at Medellin, Colombia, and Mr. Waddell goes to Peru. Readers will remember Mr. Waddell as one of the party who flew from Peace River to Fort Norman as chronicled by [insert name] in "Land of the Mammoth or Bust." The Review wishes them every success in their new field.
Oil in Canada

In Canada, exploration for new oil fields has been vigorously carried on at great trouble and expense by the Imperial Oil Company, which deserves the utmost credit for its pioneering work. In the words of the company's president, it has not been encouraging. Drilling is being undertaken on some 18 anticlines scattered throughout the vast western territories, and only one of these prospects is being exhausted, as the drilling fails to reveal any large quantities of oil. Diligent search may, of course, result in the discovery of further anticlines, but geologists are of the opinion that the latter cannot be numerous.

If the Imperial Oil Company, having exhausted all the known locations, should in the course of the next couple of years have to give up its quest of new oil fields, it is probable that no other company in Canada could on any account be carried on in Canada, for many years to come. — Toronto Star.

Imperial Oil Market

As practically all readers are interested in the market price of Imperial Oil stock through their connection with the Cooperative Investment Trust and as many are situated at considerable distance from the public Security Market, we have been requested to give the following information regarding the stock.

Members of our stock department maintain very professional airs by wearing shades and each one looks for all the world like the I.C.S. ad. of a week ago. The usual price of $100 a year draftsman. Being unable to comply with the requirements of the first two of Mr. Ness's three suggestions, we now "write for the Review."
Antifriction— A Correct Invoice

By Sidney P. Tweler, Calgary

Opinion is the foundation of business. If there were not this virtue, nothing would be undone to undertake the great risks of business. When we talk about next season's business, we are making optimistically no matter how pessimistic our actual words might be. While we think of the future, the time to present is the present, while our guidance is the experiences of the past. Therefore now is the time to commence to lay out our plans for handling more goods and doing it in such a way as to make the work more pleasant.

There are two sides to our business—first, the manufacture and delivery of our products to our agents, and second the result of sales forwarded to the Company by the Agents. The connecting link is the invoice covering the sale; this must be right, not correctly, giving the exact information which the Company requires. This small piece of paper is "a solemn bond and covenant." It seems insignificant, but it is the basic evidence of business between the producer and the consumer.

The goods must be as represented on the invoice. We maintain a specified quality for all our goods; if the invoice states "Imperial Polarine Extra Heavy," that is what the goods must be. The invoice is the basis of agreement. If the customer pays cash he must have a receipt; if he has the goods charged to his account, then we must have a receipt. The date and name of the station must appear on the invoice. Then, too, we want the name and initials of the customer indicated clearly and all signatures decipherable, while the price and extensions must be correct. Disposition of barrels must be shown and the Government Sales Tax included.

From this small paper rises up the magnificent super-structure of our organization. "A claim is no stronger than its weakest link," and if the invoice fails, then there is trouble all along the line — from customer, through the agent, to the division, and finally in the head office. The different transactions are reported to the agent's main office, and to ensure the efficient working of the whole of the organization, these reports must be correct. We have to employ large staffs to examine all reports and collect the data for the head office contained in reports under different headings. An exact account can in this way be had of every item of the Company's business.

The next most important step after satisfactory negotiations with the customer is to make a financial report of the transaction to the main office and this is done by the Cash Report. It is important that this be absolutely correct and clear and made out as the Company requires. If every cash report were made out in the same way and the same lines on the report used, it would mean a saving of many hours in a week.

A mistake in figuring an invoice seems in itself a little thing, but if it a hundred sub stations in one division make mistakes each in a month on cash sale invoices alone, this would involve six hundred entries in one ledger, to say nothing of the loss of time of checkers, stenographers, mail clerks, and loss of quantities of stationery. We have had as many as eight mistakes on one cash report from errors on cash sale invoices alone. This means an hour of one clerk's time, a hundred of stationery, an annoyed agent, and, worst of all, it might mean eight antagonized customers.

This Company has adopted the slogan of "customer service," though the word may be overworked, business cannot survive without it. Service is what we all personally want and it is the return. While things are quiet let us all look up the book, "Investment in Agents" and make up our minds to send all reports to the head office exactly as requested. We can rest assured there is a reason. Let us not forget that on the humble invoice and the equally humble barrel ticket hinges the prosperity of the Company.

Enthusiastic Sales Meetings

Meetings at Vancouver on Feb. 12th and 14th, concluded a series of Imperial Oil Sales conventions which were not surpassed by any held in the history of the Company.

Every Division was visited by the party of officials from the General Sales Department. Mr. J. J. Polan, Assist. General Sales Mgr., opened the meetings with a discussion of general sales policy and the plans for the coming year. Mr. G. W. Mills, of the Automotive Department, outlined the work which will be undertaken by his department to increase sales of Imperial Polarine Motor Oils in 1922.

Mr. Frank Jack, Mgr. of the Asphalt and Road Oils Department, delivered the message of good roads to the conventions and coached the salesmen on methods of selling and handling of asphalts and Road Oils. Mr. N. H. Glover, Canada Mgr. of the Fibertex & Barker Co., spoke in the same interest. The products, and Mr. S. D. Malan, of the H. K. McCann Co., Ltd., reported on the previous year's advertising and presented plans for the coming year.

The Vacuum Oil Co. was well represented, Mr. F. W. Sullivan, in charge of the General Sales Dept., assisted by Mr. A. H. Pritchard, Chief Plant Engineer in the Chicago territory, and Mr. I. F. Richardson, Automotive Engineer for the New England territory and member of the Vacuum Board of Automotive Engineers, took up a profitable half day session for the interesting Gargoyle Method story. Illustrated with lantern slides and other material their discussions were unusually concrete and instructive.

Convention days were so crowded with hard work that there was little chance for the visitors to really become acquainted. This had been provided for, however, all along the line and from Halifax to Vancouver a get-together-meet, with band arranged at every stop—a dance, a banquet or a theatre party at which the Imperial Oils songs were sung and entertainment provided by local talent in each division and by members of the visiting salesmen.

No more drab recital of what took place at these meetings could properly convey the spirit which pervaded them. Everywhere the enthusiastic reception was accorded the visitors.

Interest was keyed to the highest pitch and every new plan and policy was intelligently discussed. Numerous ideas were brought out at the meetings which will help sell larger quantities of our products.

Optimism was the keynote of every convention. "If the business is not there," was the ringing assurance from every side. "Forget 1921 and make 1922 even better than 1921," was the slogan of the conventions, and judging by the calibre of the men and the spirit behind the slogan, 1922 will suffer a sales eclipse when the final figures for 1922 are chalked up.

Correction

Co-operative Investment Trust depositors who took the trouble to peruse the account which appeared in the February number of the "Review" undoubtedly noticed the error of $11.00 in the amount of total balance for April 30th, 1922, and the amount of the balance brought down as of May 1st.

While this error was of, course, not intentional, it certainly served some good purpose. The many letters which were received from the Co-operative Trust calling attention to the discrepancy indicated very clearly that a large proportion of the depositors were critical of the index form to study the case.

This error of $11.00 was not sufficient to alter the number of shares which the depositor's account would purchase up to the final entry, nor would it have any material effect; the illustration was intended to convey the manifest interest in the welfare of the depositors but the error was not intentionally made, and the depositor's depositors must be gratifying to the Directors who conceived the plan, and to the Trustees who are administering it.
ITEMS OF INTEREST

For South American Field During the past year Sarnia Office has been called on for a large quota of efficient and capable men for the South American Field.

The men shown in the above photos have been with the Company upwards of ten years each. Their progressiveness, efficiency and training have fitted them for the new responsibilities they are now called on to assume.

Four of these are ex-service men. Howard and Harvey enlisted in 1914 and served in France during the entire conflict. Aba and Bohanan enlisted with the Royal Canadian Air Force and saw upwards of three years’ service in that capacity.

The Refining and Mechanical Departments have also sent a large force of Carpenters, Blacksmiths, Machinists and Pipe Fitters to the same district, so that Sarnia is pretty well represented in South America. They are located in Talara, Peru, Cartagena, and inland points in Colombia.

Border Boss On the staff of the Walkerville branch sprung a surprise on “Billy” Wilmot and his bride whom he had just brought from Montreal a few days previous. At eight o’clock the staff and their families met in the office and played cards until ten. The first prizes were won by Mrs. Wilmot and Mr. C. Brown. The Bookie prizes going to Mrs. Camp- bell and Mr. E. Myers. Much fun was had by the opening of the latter.

Mr. McClaire, on behalf of the staff, welcomed Mr. Wilmot to Walkerville, and to the big Imperial family, and presented Mr. and Mrs. Wilmot with an electric grill. He congratulated “Billy” on the step he had taken and especially on his choice, remarking that there are three rings a man must buy, first the engagement ring, second the wedding ring, and third the baby ring.

The girls of the staff served lunch, and the remainder of the evening was spent in dancing.

So successful was the party that Mr. McClaire promises that there shall be one each month for the remainder of the winter.

Imperial Service: We have just received the reports of a “day’s work” by one of our tank wagon salesmen that constitutes a record of perseverance.

On Sept. 7th, Mr. C. E. Sparrow, tank-wagon salesman at Assiniboia, Sask., arose at one-thirty, left the warehouse at two A.M., and continued to deliver oil until one A.M. the next day.

It was during the “try-out” of the threshing season and “Charlie” Sparrow happens to be one of those men who recognizes his obligations to his customers. In fact he has their interests at heart to the extent that he is willing to work night and day to see they receive the supplies they need, when they need them the most. We reproduce below a facsimile of Mr. Sparrow’s report:

DAILY REPORT on AUTO March 1922

<table>
<thead>
<tr>
<th>Date</th>
<th>Miles Driven</th>
<th>Gallons Pumped</th>
<th>Total Hours</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>180</td>
<td>900</td>
<td>6</td>
<td>Perfect service.</td>
</tr>
<tr>
<td>3</td>
<td>150</td>
<td>750</td>
<td>5</td>
<td>Smooth delivery.</td>
</tr>
<tr>
<td>4</td>
<td>200</td>
<td>1000</td>
<td>8</td>
<td>Occasionally late.</td>
</tr>
<tr>
<td>5</td>
<td>185</td>
<td>925</td>
<td>7</td>
<td>Very good performance.</td>
</tr>
<tr>
<td>6</td>
<td>220</td>
<td>1100</td>
<td>10</td>
<td>Delivered in time.</td>
</tr>
<tr>
<td>7</td>
<td>195</td>
<td>975</td>
<td>7</td>
<td>Excellent service.</td>
</tr>
</tbody>
</table>

Edmonton Echoes

Mr. Draper of the Production Department very kindly accepted an invitation to address the staff of the Production and Marketing Departments. His subject, “Spending In,” was very instructive; judging by the speed the new Rotary Drill is drilling we hope to hear him again on “Producing.”

1922 Salesmen’s Convention is now a thing of the past. This is where the “Boys” had to face their record for 1921. We understand they have sworn to trim all Red figures into Black. To show them we believe in the Sarnia Club and in a jol- lification.

The Imperial Oil hockey team have so far met all comers in the Mercurile League in hard and clean battles. Our team is strictly limited, as per arrangement, to employ only, which makes it first class sport for us; some of our opponents are not par- ticular. However, we have our own—“Sans peur et Sans reproche.”—By J. B. Byrom.

Brandon Notes Our usual monthly dance was set back in order that we might also suitably entertain and furnish remuneration for our visitors from the east and a considerable number of our field men and agents.

Our visitors included: Mr. J. J. Dulan, agent; Mr. Geo. Mills, who is in charge of the automotive lubricating business, both of the executive offices of the Company in Toronto; Mr. C. B. Mahan, of the H. K. McCann Com- pany, Toronto; Mr. H. N. Glover of the G & B.

Manufacturing Company, Toronto; Messrs. Sullivan, Pritchard, and Richardson, of the Vacuum Oil Company of New York; Mr. A. F. Hagan, as-plut specialist, and Mr. A. E. Halverson, new general sales manager, supervising the western field.

On the afternoon of the dance, these gentle- men had completed a two-day session of educa- tional and sales promotion talks out of which our field force should derive much benefit.

Including the previously mentioned visitors, there was an attendance of approximately two hundred persons. The dance was a success—good music, a crew that mixed well, and lots of fun. In passing, we may state that our visitors possessed considerable talent for entertainment and they find it not only themselves, but us, with consider- able amusement.

At the supper interval, a male choir was organized, Mr. Sullivan voluntarily acted as master and the number a

LONG LIVE THE QUEEN

Nita Lou Cantlie believes in the power of advertising. At a recent Carnival held at Campbellton, New Brunswick, she appeared in the costume shown in the photo and out of competition for the first prize for the best ladies’ costume and another prize for the most original costume. Mrs. Cantlie is the daughter of H. W. Cantlie, our representative in Northern New Brunswick, and the "Queen" that rules the young men at Campbellton.

songs which, from now on, will be familiar among the Company’s employees throughout the west. Mr. Richardson’s reputation as an enter- tainer had preceded him, and he was prevailed upon to give us an imitation of the patter of one of the early models of "one-liners."

The management of the Brandon Division constituted themselves entertainers-in-chief, and they were posted at strategic points, with a view to heading off members of the public, a staff, who had an idea that they could sneak out for a drink or a smoke—it may be that you will misunderstand this “drinkstuff,” but the beverage which we make reference to is water.

- By D. S. Patterson, Manager, Brandon.
Imperial
Boy Scouts

The Imperial Boy Scouts have been distinguishing themselves as entertainers. They recently put on a "half-circle" minstrel show that won the plaudits of everyone who saw it and which was featured in the leading newspapers in Halifax. They have also been giving entertainments for the benefit of various organizations, among which the Nova Scotia Hospital expresses appreciation as follows:

Gentlemen,

Permit me on behalf of the staff and patients of the Nova Scotia Hospital to extend our very sincere appreciation to you for your efforts in providing us with entertainments delivered by the First Imperial Troop of Boy Scouts at the Nova Scotia Hospital for our staff and patients. The entertainment was exceptionally good, and was well enjoyed by those who were fortunate enough to be able to attend. I feel that the efforts of the Scoutmaster and others are worthy of consideration in bringing together as scouts such a nice lot of merry boys, and I appreciate very much having them come to the hospital and give the entertainment. I would request that when the opportunity arises that you will express to them our hearty appreciation for their efforts to entertain.

Yours very sincerely,

P. E. Lawlor

The photo shows the Boy Scouts' Shield and the Boy Cubs' Shield recently presented by the Boy Scout Headquarters, London, England. Mr. G. W. Mayer, former Vice-President Imperial Oil Limited, donated the money for the shields while on a visit to Halifax. The shields will be known as the "G. W. Mayer Shields" and will be competed for by the different squadrons at Imperial, quarterly. They should be helpful in inspiring proficiency in our troops.

G. W. MAYR SHIELDS

Barreling and Marketing Reports

(Continued from Page 5)

for the period under subdivisions, which we feel will be of assistance to the managers in analyzing them. To illustrate: Motor Vehicle Expense:

This expense will be shown under the following captions, and in full detail will show comparative, this year with last year figures:

- Chauffeurs' wages
- Helpers' wages
- Gasoline value
- Repairs
- Road expense
- Depreciation
- Garage rental
- License expenses
- Loss and gain on equipment.

A similar analysis will be shown for horse-drawn vehicles.

With stable expense the comparative figures will cover the value of the expense of feed, showing depreciation on live stock and horses, harness, repairs, extra animal hire and loss or gain on equipment.

The managers will also be interested in the comparisons of salesmen's expense and salaries.

As to general expense, this will show a comparison as to:

- Postage
- Telephone and telegraph
- Water, fuel and light
- Managers' and assistant managers' travelling expenses
- General labor
- Repairs to buildings and tanks.

To those who are directly interested, the above is no doubt altogether too brief, but we are glad to advise that we anticipate to be able to mail to each head office of the marketing division a copy of the revised Primer in type-written form, some time in the near future.

In accordance with previous custom, we will continue to mail to the managers a copy of the B & M, effecting their division, as well as a copy of the analysis of expenses which we predict will contain valuable information and details which the managers have often required but never have found available.

TWO BEAUTIES

The above photo shows Mrs. W. J. Keith, wife of W. J. Keith, agent at Sydney, Nova. In the background is Mr. Keith at the wheel of his truck. Mr. Keith tells us there are two president functions. One is First, he says, the other drives him.

A few impressions from the recent election of Industrial Councils gathered by the Imperial Oil Review Cartoonist.
TIME

"Ordinary people think merely how they will spend their time; a man of intellect tries to use it."