

TEXACO STAR



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LUBRICATING DIVISION
OF SALES DEPARTMENT
SOUTHERN TERRITORY
NUMBER

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OF
Sales Department Southern Territory

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THINK

SUCCESS comes to every one in the same way. Exceptions are so rare that they are negligible.

The envious, the growlers, the disturbers, who are perpetually denouncing the prosperous, and clamoring to break down business because it is too big, have not a foot to stand upon. They overlook the fundamentals of success.

You can't stifle a man's initiative. You can't put all men on the same level. Men are not born that way. It was not the design of the Creator. Diversity is the rule in all forms of life, from the lowest to the highest. If everything were the same, it would be an unlivable world, with no premium on ambition, aspiration, or hope . . . It would prove an utter failure.

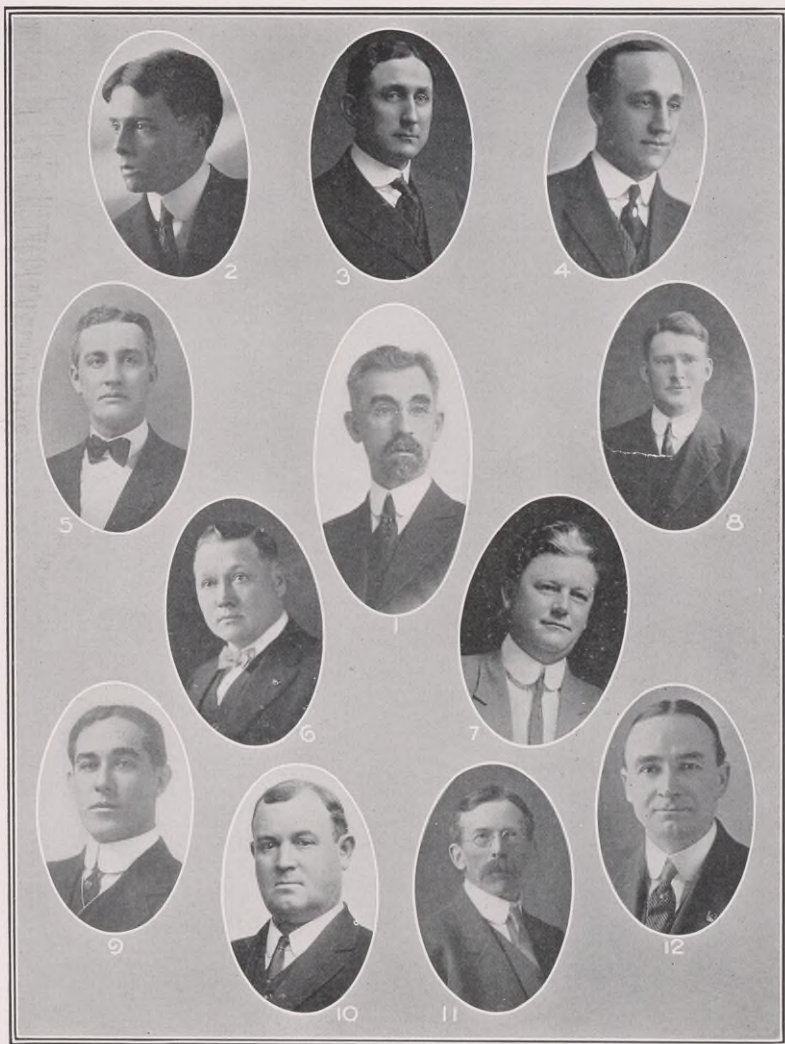
There is scarcely a captain of industry who did not start in the ranks of poverty, who did not earn his bread by the sweat of his brow, and who did not achieve success by diligence, industry, and integrity.

In no other way can one establish his credit, and without credit no man ever became a captain of industry. Without a good reputation the humblest business man must meet failure . . . His shrift would be short.

Does any one think that the road to prosperity lies along a highway of iniquity? How many business men ever prosper by wrongdoing? How many achieve success without a reputation for fairness and honesty? Men filled with visionary theories vie with cheap and mouthy agitators in teaching the young that success in business has come chiefly from crooked work. And so young men who should be fighting the battle of life by faithful service and unremitting toil, are vainly seeking a primrose path to preferment.

—John A. Sleicher

LUBRICATING DIVISION OF SALES DEPARTMENT
SOUTHERN TERRITORY STAFF



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TEXACO STAR

VOL. II

MARCH 1915

No. 5

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THE TEXAS COMPANY

"ALL FOR EACH—EACH FOR ALL"

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ADDRESS: TEXACO STAR, 1101 CARTER BUILDING, HOUSTON, TEXAS

THE belief expressed in our January issue that the Legislature of the State of Texas would do that which was right and fair in respect to the charter powers of oil manufacturing and marketing companies incorporated under the laws of Texas has now been justified in large part, and will soon, we trust, be completely fulfilled. Senate Bill No. 78 finally passed the House of Representatives at Austin on March 4 and was signed by the Governor on March 8. It reads as follows:

Corporations heretofore or hereafter organized under the provisions of Chapter XXIV of Title 25 of the Revised Civil Statutes of 1911, and which shall file with the Secretary of State a duly authorized acceptance of the provisions of this Act, are hereby declared to have, in addition to the powers enumerated in said chapter, the power to carry on the business therein authorized outside of as well as within this State; to own and operate refineries, casing and treating plants, sales offices, warehouses, docks, ships, tank cars and vehicles, necessary in the conduct of their business; and to cause the formation of corporations outside of this State, not exceeding one in any State, Territory or foreign country, whose purposes and powers exercised shall be only those conferred by law upon the forming or holding corporation as incorporated under the laws of Texas, and own and hold the stock of such corporations, when the effect of such formation or stock holding is not substantially to lessen competition or otherwise to violate laws prohibiting trusts and monopolies and conspiracies in restraint of trade.

This embodies the substance of all that was requested by The Texas Company except that it does not settle the question of the right of the Company to prospect for and produce oil. A provision covering this latter feature of the business and expressly conceding that right to pipe line companies is now pending in both the Senate and the House on favorable reports from the com-

mittees to which it had been referred. The pending bill undertakes to regulate all pipe line companies declaring them to be common carriers. It is understood that sentiment in the Legislature is decidedly favorable to this measure and that it will probably be enacted into law if it can be reached on the calendars before the end of the legislative term. A great many independent producers of the State have actively supported the measure, believing that it would encourage the building of pipe lines and the development of new fields, and The Texas Company has not opposed regulation. It seems to have been generally conceded that pipe lines will not be built if they are to be operated as common carriers only and without affiliation with the other branch of the business; and likewise that normal development at new fields is not probable save where those interested are free to build pipe lines and operate them in connection with production.

The relief obtained under the law already enacted will be of great help to our Company. It will simplify marketing operations, and make for economy, and will place it beyond the power of arbitrary officials to use as a club the fact that the company had no actual charter power to transact business outside of Texas.

★ ★

When President Wilson pressed the button to open the Panama-Pacific Exposition the electric impulse that was flashed across the continent started a great Busch-Sulzer Diesel Engine in the Palace of Machinery. The engine is ordinarily started with compressed air, but on this occasion arrangement was made to

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start it with an electric motor. It is the first 500 horse-power engine of the Sulzer type that the Busch-Sulzer Diesel Engine Company of St. Louis has made, and Texaco Ursa Oil is the only lubricant that has ever been used on the splendid machine.

An exact duplicate of the Exposition's giant prime mover, the second 500 h-p Busch-Sulzer Diesel Engine that has been built, is now on its way to Yoakum, Texas, where it is going to "pull" everything in the town including the San Antonio and Aransas Pass Railway Shops.

As a prime mover the Diesel Engine is of commanding interest and importance the world over. In the United States of America immense developments await the time when the efficiency and the astonishing practical economies for many uses offered in this great invention, shall become generally understood and appreciated. For example, in the State of Texas regions are accessible to water for irrigation, whose development has been prohibited by the cost of operating steam-driven pumps. The thermal efficiency of the Diesel engine is a notable advance beyond the steam engine; but that point of exact comparison in the science of pure mechanics would convey little meaning to the general reader, and it is in fact of minor practical importance. The thermal efficiency of a prime mover is only one of many factors in the cost of getting useful work out of heat. For some conditions the cost of the labor required to fire the furnaces under the boilers of a steam engine exceeds the total fuel cost of a Diesel engine doing the same work. Such is often the case in the particular matter we have mentioned,—the usual conditions for pumping water to irrigate land. The cost of pumping water at the irrigating steam plants now in use varies so widely that it would be impossible to give an exact

figure except for a particular plant. It is probably safe to say that the ordinary steam plant fuel cost of pumping 30,000 gallons of water per minute against a 20-ft. head varies from 5 to 25 cents per minute. On the other hand, we have the exact knowledge that a 250 horse-power Diesel engine is guaranteed to pump 30,000 gallons of water per minute against a 20 ft. head consuming only $\frac{1}{4}$ gallon of fuel oil per minute, which, with fuel oil at 2 cents a gallon is a fuel cost of $\frac{1}{2}$ cent per minute, or with fuel oil at 3 cents a gallon is a fuel cost of $\frac{3}{4}$ of a cent per minute. Think what this practical comparison signifies. What will happen when enterprising men generally come to understand it.

Within the last twenty years a number of cotton factories have been built in Texas, operated for some time, and then abandoned on account of the high cost of fuel. May it not be expected that the Diesel engine and fuel oil will conjointly cause those abandoned cotton factories to run again and many new ones to be added to them? Various manufacturing industries will henceforth be located most profitably in the regions where their main raw material is produced.

★ ★

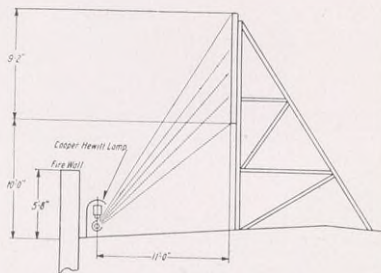
A distinctive electrically illuminated sign, and one that cannot fail to attract the favorable attention of the passer-by, day or night, has recently been erected by The Texas Company on one of its buildings at Port Arthur, Tex.

The wording of the sign is *The Texas Company*. The sign consists of fifteen 9-ft. letters painted white, forming an attractive sign by day, while at night it is made more attractive by the unusual illumination. This is of a pea-green color and is obtained from mercury-vapor lamps placed behind a reflector located in front of the sign. The color makes the sign distinctive and leaves a pleasing impression on the passer-by whose attention it never fails to get.

In addition, the trade-mark of The Texas Company is a red Star and green T, the T being in the



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center of the star, and all of the packages of oil, in addition to carrying this trade-mark, have a body color of pale green, which is closely approximated by the color of the illumination, therefore making it particularly appropriate.

The sign is 155 ft. 10 in. long, has a height of 9 ft. 2 in. and is supported by a substantial iron framework. The height above the top of the building is over 9 ft., thus making it easily visible over the surrounding country.

The light is furnished by sixteen Cooper Hewitt lamps mounted in iron boxes placed 11 ft. in front of the sign. These boxes are of particular interest, being made of corrugated iron top and sides with a glass face just large enough to accommodate the lamp. A special reflector placed just beneath the tube of the lamp throws the light directly against the face of the sign.

The lamps are operated four in series on a 240-volt direct-current circuit, supplied by the company's own plant and taking 3.5 amp. in each circuit, or 192.5 watts per lamp. The total power consumption for the installation is approximately 3 kw, the sign being very economical as well as attractive.—*Electrical World*.

★ ★

In the March issue of *Jeffrey Service R. B. Renner*, of the Chain Engineering Department of The Jeffrey Manufacturing Company, Columbus, O., writes about a "Big Order Secured at Modern Texas Oil Plant," being a contract with The Texas Company for seven conveyors to carry cases from the box factory to new warehouses at our Port Arthur Terminal. These conveyors were described and pictured in the April 1914 issue of the *Texaco Star*. Mr. Renner describes enthusiastically our Case and Package plant. He also found very interesting two minor items of his observations:

The ends of the wooden cases in which the cans of oil are shipped are run through printing machines with labels in the language of the country to which the case is going. This is usually in black, but on the ends of the case a picture in red is printed. If the case is going to Spain, for instance, a picture of a Bull and Toredor is printed, the idea being that most of the natives will be unable to read their own

language but they can read the picture and will naturally handle the case with the right side up. This picture idea is carried out for all countries to which cases are shipped.

The Case and Package Division of The Texas Company is located on an island [which was] only about one foot above high tide. The Texas Company has filled it in so that it is now several feet above the water. When vessels... are unable to secure a load of freight they load up with ballast of any character obtainable. This ballast has been brought from returning steamers to fill in the island. In walking along with the manager of the plant various materials were noticed, and on asking what they were, he answered: "This is sand from the River Thames; this grayish sand, partly black and other parts white, came from the Bay of Naples, the black part being ground lava from Mt. Vesuvius." A chemical debris... was from Havre, France. Broken bricks were noticed, from Liverpool; dark earth from Germany; rock from the Falkland Islands; and sand from Pernambuco, Brazil.

★ ★

The Texas Company has contracted with the Fore River Shipbuilding Co., Quincy, Mass., for two tank steamers to be completed within ten months at an approximate cost of \$750,000 for each. They are to be larger than the *Texas* and *Illinois*, at present the largest tankers in our fleet. The cargo capacity of each will be about 8,000 tons; speed 11½ knots. Dimensions: length between Lloyd's perpendiculars, 415 ft.; moulded beam, 56 ft.; moulded depth of upper deck, 32 ft. 9 in.; moulded depth of second deck, 25 ft.; sheer forward, 8 ft. 3 in.; sheer aft, 4 ft. 3 in. Names have not yet been chosen for these ships.

★ ★

"As you look over your sixteen years on the road what qualities strike you as being most vital for success in selling?" He dreamed for half a minute. "I don't know as you would call them qualities," he said; "but a thorough knowledge of the stuff a fellow is trying to sell is one thing, and I don't know any other thing more essential than the ability to get the better of a prospect who is trying to turn you down without a hearing."—*Business*.

★ ★

It is not enough to collect today's profits. Your competitor is collecting tomorrow's good will.

Sell satisfaction. Success in selling does not mean simply goods sold. It means customers satisfied.

A salesman must not only have confidence in himself, his employer, and the stock he is selling, but the confidence of the customer; otherwise, he will not make good.

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Plastering has been completed. Marble is nearly all set, except in Elevator Lobby on 1st floor. Window sash all hung and painted one coat. Wood work is complete on 4th, 5th, and 6th floors, and some wood work has been done on all floors except the 12th. One elevator is running and the other two are being wired. The boilers and heating system are being tested.

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EFFICIENT AND ECONOMICAL LUBRICATION

W. M. DAVIS

Efficiency Engineer

SUITABLE LUBRICANTS

Lubrication, as we understand it in mechanics, is the application or introduction of some substance that will cling to or flow between the surfaces of bearings and journals of engines and machinery and keep the metal surfaces from coming in direct contact, thus preventing excessive friction and consequent heating.

Lubricants may be divided into three general kinds, or classes: fluids, plastics, and solids. To the first belong the various oils; to the second, the greases; and to the third, such substances as graphite, talc or soapstone, mica, etc.

Where the speed is high and the pressure great, oils are, in nearly all cases, the most satisfactory lubricants. They cling to the contact surfaces, forming an elastic coating to the metal which keeps the surfaces apart, and they absorb the frictional heat and carry it away. Petroleum oils can be had in almost any desired grade or density, from the thin spindle oils to the heavy cylinder stocks; and, as they contain no acid, they do not become rancid or gummy. In the early days the oils used were all of animal or vegetable origin, such as lard oil, whale and sperm oil, rape seed or colza oil, olive oil, etc. These oils, while of good lubricating value, have disadvantages. In the first place, they are expensive, and, being of organic origin, they have a tendency to become rancid and gummy on exposure to air. In more recent years those oils have been almost entirely displaced by the petroleum or mineral oils. These are cheaper, and are in all respects better lubricants. They do not change on exposure to air or when in use.

The greases are more suitable for use on slow moving machinery and where the pressure is not great. In some kinds of machinery, although the speed be quite high, if the pressure is not great, a grease of proper grade or consistency will often give excellent results. As a usual thing, however, if grease be used indiscriminately on high speed machinery, such as textile machinery, there will be a noticeable increase in the friction load. But on slow speed machinery and mining and cement mill machinery it will lubricate as well as

oil and there will be no perceptible increase in friction load. Where the machinery is exposed to much dust, grease, if of the proper grade, will prove more efficient than oil, as it will act as a seal at the ends of the bearings and other openings to keep the dust out.

Greases may be divided into two classes: The lime and potash soap, or high melting point greases; and the tallow base, or low melting point greases. The first are made by combining a small quantity of fatty oil into a soap and mixing it with petroleum products to bring it to the desired consistency. Such greases may be made in any degree of density, and will usually have a melting point of 120 to 200 degrees Fahrenheit. The tallow base greases are composed of a large percentage of tallow combined with an alkali, and are brought to the desired density by means of vaseline, petrolatum, or petroleum oils. Such greases, owing to their large content of tallow, are of low melting point, usually about 116 to 120 degrees Fahrenheit. The high melting point greases usually require to be forced down between the journal surfaces by means of compression grease cups. The low melting point greases can often be packed in the journal boxes, or directly on the bearings (as in top rolls of spinning and twisting frames or on large open bearings of paper mill and other machinery), for a low frictional heat will cause it to melt and change to an oil and lubricate the bearings.

The solid lubricants, such as graphite, soapstone, etc., have but a limited field of use, such as a filler or lubricant for fibrous piston rod packings, etc.

All the above is preliminary to a discussion of the subject of this paper.

Until recent years this subject has been given little thought and attention by those in charge of the operation of machinery, the prevailing idea being that the cost of lubricants was such a small matter as compared with other items, such as fuel, labor, etc., that many went on the theory that "oil is cheaper than babbitt" and used plenty of it. But in these days of keen competition

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and close attention to operating costs it has been found that it is possible to lubricate machinery efficiently and, at the same time, economically.

There are two essentials to be looked after in obtaining economical lubricating costs. First: select lubricants that will give good service for cool bearings, low friction loss, *etc.* Second: see that they are used economically.

The selection of proper lubricants depends, of course, upon the class of machinery on which they are to be used. On light running and high speed machinery, such as the spinning, twisting, and other departments of textile mills, the light bodied or more fluid oils will give best results. For slow speed machinery, the heavier bodied or more viscid oils will be better. For slow speed engines where the oil is fed from cups, a heavy bodied oil should be used. For high speed work and engines where continuous oiling systems are in use, a light bodied free flowing oil should be used.

Cylinder oils have for their base what is known as cylinder stock, of which there are two classes, the light colored or filtered stock, and the dark or steam refined stock, the latter being almost universally used. Cylinder stock is high in flash test and viscosity, but of itself would not make a good steam cylinder lubricant under ordinary saturated steam conditions. Being a petroleum product, it has no affinity for moisture and will not stick to the wet cylinder and valve surfaces; so it is customary to compound this petroleum stock with a certain amount of saponifiable or fatty oil in order that it will emulsify with the steam and cling to the surfaces. Where the steam is fairly dry, three to six per cent of fatty oil is usually sufficient, but where the steam carries more moisture, as in the case of engines having no separator, or at considerable distance from the boilers, or with uncovered steam pipes, it is sometimes necessary that the cylinder oil be quite heavily compounded to give good lubrication.

The mechanical world owes much to the careful experiments into the theory of friction by such men as General Morin, the late Prof. Robert H. Thurston, and others, and the information derived from their experiments has been of great value to engineers. The machines on which their tests were made, however, are not always available.

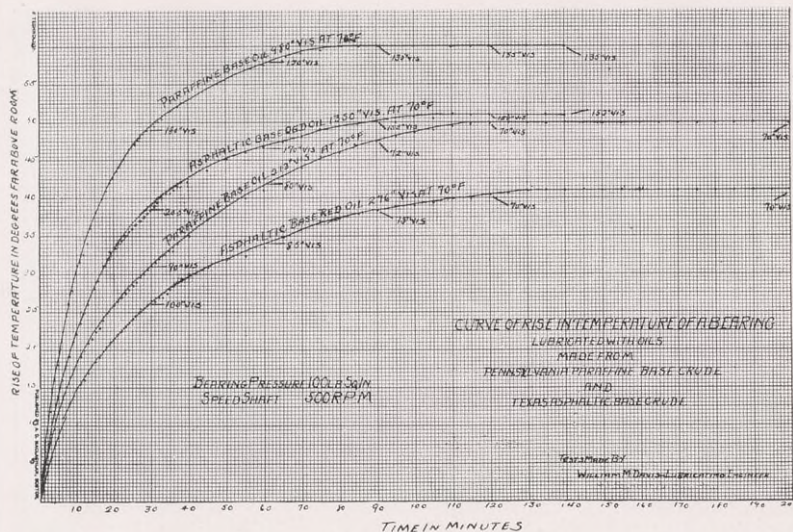
If it is desired to make a series of service tests we advise the following procedure:

Take a bearing that is running under constant load and speed, such as the main bearing of a high speed engine. Place a thermometer in the bearing so that the bulb rests on the shaft, and maintain a constant feed of oil. Have another thermometer placed somewhere in the room near the bearing and out of drafts, so as to show the temperature of the room. Commence the test when the engine is started; note the rise of temperature at frequent intervals; also that of the room; continue the test until the temperature of the bearing ceases to rise. Every bearing will in the course of a few hours reach a point where the heat is radiated as fast as it is generated. Deducting the temperature of the room from that of the bearing will give the temperature due to friction. If the engine runs in the daytime only, the bearing will cool off during the night. The next day repeat the test with another oil. This data may be plotted on diagram paper to show in a graphical manner the difference in rise of temperature for the various lubricants.

The curves on the accompanying diagram show the results of tests made by the writer to determine the relative lubricating value between light gravity paraffine base and heavy gravity asphaltic base oils. The conditions under which these tests were made were identical as to speed, pressure, room temperature, *etc.*, each test being carried out until the temperature became constant, that is, until the heat was radiated as fast as it was generated. The first test was made with two low viscosity oils, one a paraffine and the other an asphaltic base oil; the other test was made with two heavy oils, one paraffine base and the other an asphaltic base oil. It will be noted that in both tests the asphaltic base oils, while greater in viscosity, gave the lowest temperature and were therefore the better lubricants.

While it is no doubt true that in experimental work it has been found that the co-efficient of friction often decreases with rise of temperature, yet in everyday practice it is safe to assume that, of two oils, the one that keeps the bearings the coolest is the best lubricant; so in tests of this kind the oil showing the least rise of temperature would be the best lubricant. Such tests can also be made in ring oiled

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bearings of motors, dynamos, or shafting. When making such tests it would be well, after finishing one test and before commencing another, to wash out the bearing with gasoline.

If it is desired to ascertain the lubricating value of a cylinder oil, first feed it at a given rate for a few days, then remove the cylinder head and wipe over the surface with a piece of soft white paper. If a good stain of oil is found and the valves work smooth and quiet, it is evidence of good lubrication. If there is no stain of oil and a liberal amount has been used, and the valves groan or work hard, it indicates either that the steam is very wet, or that not enough fatty oil has been used in compounding the lubricant.

The same tests can be used to determine the least amount necessary to maintain good lubrication. By gradually reducing the oil feed and examining the surfaces from time to time, the proper amount necessary to maintain good lubrication can be determined. Of course, where tests of this kind are to be made some means must be provided for easy removal of the cylinder heads.

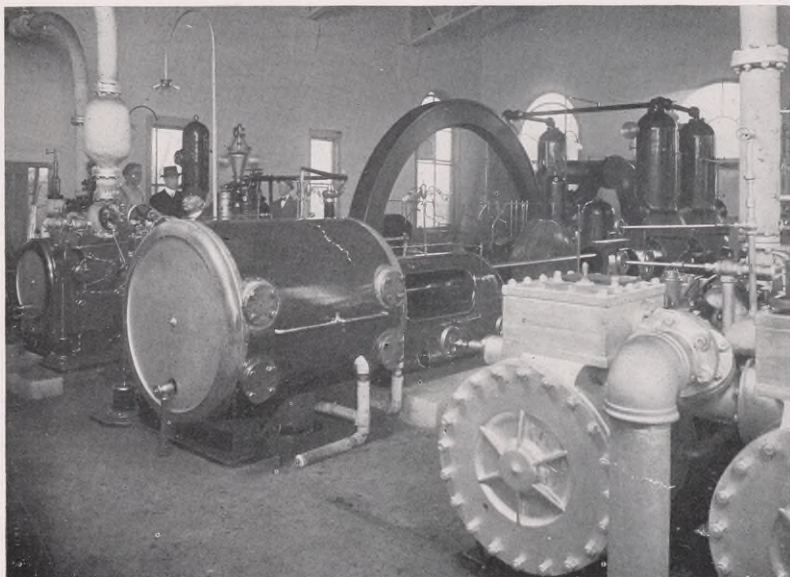
In many cases, by substituting one lubricant for another, or by choosing a

more suitable grade which will do the work just as effectively, a decided reduction in cost can be made. For instance, I have found cases where a high priced cylinder oil was being used to lubricate general mill shafting and machinery, when a good grade of machine oil would have answered better and at half the cost.

Next to the question of selection, efficient and economical lubrication hinges on the methods of handling and applying the lubricant. Reliable appliances for feeding lubricants save money. There are many ways by which every manufacturer can decrease his oil bill by right methods of handling and using the lubricants.

It is simply a waste of money to fit engines with a continuous oiling system unless all necessary precautions are taken to recover the oil used. As an example: several years ago I was engaged to report on lubricating conditions at the mills of a corporation operating several large plants. At one mill, where three large compound engines are in one engine room, 800 to 1,000 gallons of engine oil were used per month. Not a drop was saved; what didn't go down the sewer was lost in wiping up. I advised that they be equipped with a continuous oiling system; but at the

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Water Works, Meridian, Miss. Operating Platt-Corliss Compound Engine and High Duty Pump.
Lubricated by The Texas Oil Company.

same time I urged very strongly in my report the importance of fitting the engines with pans and shields so as to prevent the loss of oil. Instead of giving the contract to some responsible firm and holding them responsible for the result, they decided to have their own men do the work. The chief engineer, whose previous experience had been mostly on steam shovels and who was but little used to modern steam plant refinements, undertook the work. He applied all his skill as a pipe-fitter in putting up the piping, filters, *etc.*, but he made such a bad job of fitting the engines with pans and shields that the loss of oil was as great as before.

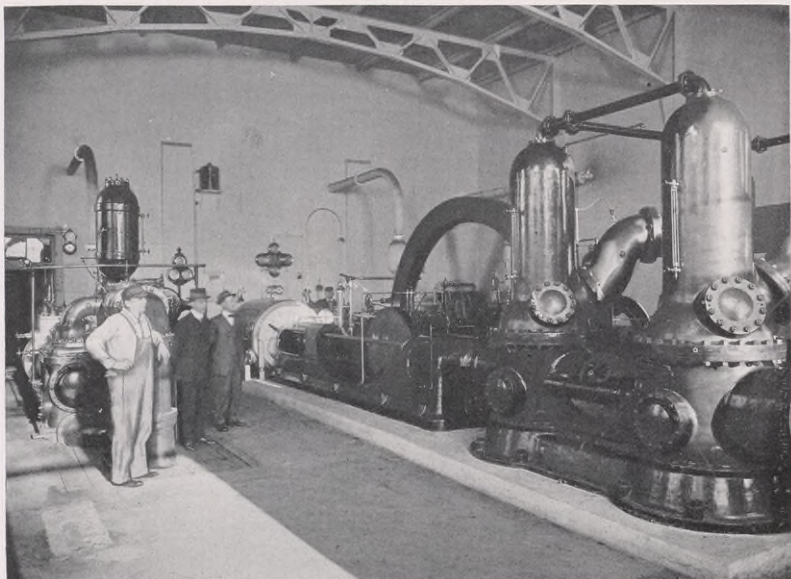
On the other hand, it is surprising, when an engine has been properly equipped, how little new oil is needed to make up the loss. As an instance: at a certain plant in one of the suburbs of Boston there are two vertical compound engines of several hundred horse power each, running at 125 revolutions per minute and about eleven hours per day. The oil

flows in streams over the bearings, yet so well protected are they that a barrel of 50 gallons of oil lasts several months.

At another plant, with two single cylinder horizontal engines, about 24x48, running 100 revolutions per minute, before being equipped with an oiling system the loss amounted to about 200 gallons of oil per month; after being equipped, and means provided to prevent loss by leakage, *etc.*, the monthly consumption was reduced to less than 10 gallons.

A rather mysterious loss of engine oil was traced to a peculiar cause. While making an inspection of the plant of a client in Illinois, I found by the records that from 300 to 400 gallons of engine oil were required per month to make up the loss on two compound engines. The engines were fitted with a continuous oiling system with excellent facilities for preventing loss, the cranks, eccentrics, and cross heads being cased in to prevent the oil being thrown out. The oil was used freely on the cross head pins and guides. Under the piston and stuffing boxes, between the cylinder heads and the end of the bottom guide, there was a large cavity or depression in the casting. From the bottom of this was a drip pipe; but the engineer kept it closed, allowing the cavity to fill with oil, which, when the cross head went out, flowed along the bottom guide. The cross head shoe, on the return stroke, splashed the oil up against the hot cylinder head.

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Water Works, Meridian, Miss. In foreground, right to left: Asst. Engineer Tom Gathright; Salesman R. W. McLaurin; Agent Rene Trahan. At far end, with hand on pipe, is Chief Engineer G. A. Gathright.

As they were using superheated steam in the high pressure cylinders at 150 pounds per square inch, there was sufficient heat to burn or vaporize the oil, which was indicated by the cloud of smoke continually coming out of the cross head barrel. At my suggestion the engineer allowed this oil to drain into a tank with the result that this cause of loss was stopped. Besides what was lost from this cause it was found that the oil soaked waste used in wiping up was sent to the boiler room to be burned. The installation of an oil and waste saving machine stopped that loss.

It has been found by experiment that a pound of dry waste after being used to wipe up around engines, when squeezed out by hand weighs two pounds. If the oily waste goes to the boiler room to be burned, there is a loss of one gallon of oil for every ten pounds of dry waste used. In most large plants it will pay to install an oil and waste saving machine, by means of which the oil can be extracted and filtered, and the waste washed, dried, and used over again. To give an idea of what this loss sometimes amounts to, the writer, while inspecting lubricating conditions at the mills of a client, found, on inquiry,

that they were using waste at the rate of 28,000 pounds a year. Most of it was used for wiping up around the engines and machinery on which a great deal of oil was used. All of it was sent to the boiler room to be burned. As the waste was heavy with oil, it is safe to say that at the very least 2,000 gallons of oil, together with the waste, were lost per annum.

To show what can be done in the way of recovering waste oil, I mention the following instances:

While engaged in reorganizing the lubricating practice at the mills of a large textile corporation, the writer found that the oils were received in barrels, a car load at a time, and kept stored in a shed where they were subjected to considerable heat so that the barrels soon began to leak, and that sawdust was spread over the floor to absorb the leakage. When the sawdust got saturated with oil it was shoveled into a wheel barrow and taken to the boiler room to be burned. Of course the writer urged that tanks be provided to store the oil in; but as the management did not seem inclined to incur the necessary expense, it was decided to see what could be done to recover this oil. Some time previously we had installed a centrifugal oil and waste cleaning machine for extracting the oil from the wiping rags

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and waste used in the engine rooms, and we decided to see if we could recover the oil from the sawdust. At first we shoveled the oil-soaked sawdust into the perforated basket in the machine, but it soon clogged up the moving parts. We then made bags of burlap and filled them with the oil-soaked sawdust and packed the bags in the basket. This was a success. A few minutes operation of the machine threw out all the oil leaving the sawdust perfectly dry. We made a recovery of twelve gallons of oil from one large wheelbarrow full of oil-soaked sawdust, at very little expense for labor. This oil, after being filtered, was used over again. By being careful to gather up the oil-soaked sawdust at frequent intervals and extracting the oil, we were able to recover from \$50.00 to \$60.00 worth of oil per month that had previously been burned up at the boiler room.

Another unusual case of oil recovery occurred at a large cement mill. At this mill they had two large Gates gyratory crushers, used in crushing the cement rock. We noted, in looking over the plant, that in oiling the step bearings the oilers pumped in so much oil that it overflowed and dripped out through the holes in the base plate onto the ground beneath the crusher. This oil, mixed with small pieces of broken rock which also accumulated under the crusher, formed a thick gummy mass of oil and stone two or three feet deep beneath the machine. When the accumulation got too deep it was shoveled into wheelbarrows and thrown out on the dump. As I was conducting some tests in another department of the mill and had plenty of time on my hands, I decided to see what could be done in the way of recovering this oil. I worked out the following scheme: I procured two empty grease barrels and stood them in the room beneath the crusher. I ran a 1/2-inch steam pipe into one of the barrels to within a few inches of the bottom and filled the barrel about half full of water. On the top of the other barrel I fitted a strainer, using a wooden box about one foot square and about 6 inches deep with fine wire netting on the bottom, filled with closely packed excelsior. Having made these arrangements, I turned on the steam until the water in the first mentioned barrel was boiling. Then I had a laborer shovel into it the oil-soaked broken stone. As soon as it touched the hot water the oil separated and came to the surface, while the rock and other matter went to the bottom. By gradually shoveling in the oil and dirt we soon had the accumulation of oil up to the top of the barrel. We then turned off the steam, leaving just enough on to keep the oil hot so that fine particles of dirt could separate from this oil and settle to the bottom. Then we dipped the oil out and poured it through the excelsior into the empty barrel. In this way in a short time we recovered, at very little cost for labor, three or four barrels of oil that was perfectly clean and fit to use again. Of course, the heated barrel had to be emptied occasionally of its accumulation of broken stone and dirt, which when dried proved to be absolutely free from oil.

STORAGE AND DISTRIBUTION OF LUBRICANTS Receiving, storing, and distributing lubricants are other important factors in economical lubrication. If the plant is a large one where several thousand gallons of oil are used per year, it will pay to provide storage capacity so that all the

oils can be bought in tank car lots. In this way there will be a reduction in the price and also a saving in the labor required to handle the oil. If it be a small plant, where only a few barrels of each kind of oil are used per month, the oil should be kept in tanks so arranged that the barrels can be emptied into them by gravity. Care should be taken to see that the barrels drain out thoroughly. As the empty barrels are each worth seventy-five cents to a dollar or more, they are worth saving and should be kept in a cool place to prevent shrinking, until enough have accumulated to make a carload. When sold, the amount received should be credited to the lubricating account.

It is customary in a large plant to have someone in charge of the oil house, to receive and store the lubricants, and to issue or deliver them to the various engine rooms and departments, keeping a record of the amounts issued in a book or on a blank form. This is just as important in a small plant, and can be done without great effort or expense.

In one plant the various departments are provided with cans or small tanks of size sufficient to hold a few days' supply. The name of the rooms or departments to which the cans belong are stamped on strips of sheet brass soldered upon the cans. Leaky cans or cans with broken spouts tend to wastefulness. The repair man should periodically gather up all such cans, and repair damages or fit new spouts before returning the cans.

No oil should be issued except on a requisition signed by the chief engineer, master mechanic, or department foreman. In one small plant where the amount used does not warrant keeping a man especially to look after the lubricants, the oil house is placed in charge of the general storekeeper and opened only at certain times—half an hour or so in the morning and the same in the afternoon. The men come or send for their supply of oil at these times. At other times the oil house is kept locked.

At the end of the month the amounts of lubricants issued should be totalled up and entered on a blank, such as is here shown. The totals when multiplied by price per gallon or pound will show the cost of each kind of lubricant used in each engine room and department. The report should go to the manager, superintendent, or other official, who can see at a glance just how

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much each department has used and its cost. By comparison with report of the previous month it can be noted if the cost has increased or decreased and just where it has taken place. By dividing the total cost by some unit of product or output, such as tons, pounds, yards, kilowatt hours, or whatever it may be, the cost of

output may be determined and entered on the report sheet. There should also be a place to enter the amounts of oil purchased during the month, the number of empty barrels sold and the amount received for them. Thus a complete record of the lubricant cost can be kept on one sheet.

	Cylinder Oil Gals.	Engine Oil Gals.	Black Oil Gals.	Cup Grease Lbs.	Cost
Crusher Engine and Machinery	25	50	200	20	\$34.61
Washing Engines and Machinery	25	15	50	25	14.08
Electric Light Plant	40	40	..	..	14.32
Hoisting Engines	20	8	..	10	5.94
Fan Engines	20	25	..	..	7.90
Mine Cars	..	..	831	..	86.42
	130	138	1500	55	\$206.85
Total cost, \$206.85. Tons of product, 10,342.					Cost per ton, 2 cents.

But the main thing in regard to economical use of lubricants is to train all helpers to be careful in their use of the oil. This is a matter which requires constant attention on the part of the management, and where there are several plants it will often pay to have a good man take charge of this work. The economical use of lubricants depends to a very great degree upon the personal equation of "the man behind the oil can." The amount of loss due to careless handling of the lubricants by the average mill oiler is often enormous, and great care should be taken to see that they are not wasted. Some large corporations that operate a number of plants

whose costs for lubricants run into the thousands of dollars per year, have special men who give their whole time to seeing that the lubricants are properly and economically used; but for every corporation that can afford to keep a man for this purpose, there are hundreds of large consumers of lubricants whose costs would not admit of this. So it is the object of the Efficiency department of our Lubricating Division to show customers how to obtain the best and most efficient service from the lubricants they use, at the lowest cost per unit of product consistent with safety and good practice. *They Who Serve Best Profit Most.*

KEEPING IN TOUCH WITH THE PROSPECT

F. C. KERNS

Chief Clerk Lubricating Division

Wilkins was very undecided. He consulted his watch and hesitated. Would he or would he not swing around by the ice and light company's plant on his way back to the depot for the five-thirty train? It would doubtless mean meeting again the chilling rebuff that was slowly 'getting' his nerve, and the present warm satisfaction over a successful day's work was very gratifying. Not once during fifteen months of regular calls had the crusty old engineer and buyer treated him decently. The competitor's oil and service was satisfactory,—that was enough; there the argument ended. It was a 'strike-out' for Wilkins every time. At first he refused to be waved away without a chance to explain, and used his best powers of persuasion. But the social nature of a true Irishman requires at least one for a hearer, and so no progress was made. Even less success met his search for an indirect road to his prospect's interest, by which a constructive service might be rendered and good-will earned. The same solid wall of prejudice, indifference, and personal friendship for the competitor's salesman had loomed up cold and gray each call. Now at the close of his usual thorough canvass of all the trade

and with but a few minutes until train time, Wilkins debated whether the game was worth the candle. Finally, he pocketed his watch and decided to call once more. Ten minutes later found a grinning old engineer listening attentively to an enthusiastic talk on Texaco Quality. Train time found Wilkins racing to the depot with a signed order for one barrel each of steam cylinder and engine oil, and a lesson he never forgot.

The competitor's salesman who had worked the territory for years, had suddenly quit and gone into business for himself. The engineer didn't like the new man, and he told Wilkins that from now on, providing Texaco lubricants were satisfactory, all of his lubricating orders would be given to him, as out of five oil salesmen visiting the town he alone kept coming steadily after the second or third call. In relating the incident today (one he is especially fond of), Wilkins usually bangs his fist on his big golden oak table, and ends: "Yes, sir, that burned into me as nothing else could the value of tactful persistence in selling high grade oil. Men and conditions continually change, but to profit by the changes one must be wide awake and on the job. The game must be played all the time. A town should never be left behind until every customer or prospect has been seen. You'll plant new ideas, help the growth of those already planted, beget

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respect and consideration for your Company, and earn something each call. And sure as fate that 'hard-shell' merchant will loosen up some day, and say: 'Well, Jones, you've been coming 'round here mighty regular; I guess you really want my business. S'pose you send us a gross of that Graphite Axle Grease you're telling all these yarns about, and a half barrel of Harvester Oil. Send along some good advertising placards, and we'll see how the stuff moves.' Or the engineer or superintendent will put his name on the 'dotted line' for a barrel of Cylinder or Engine Oil, or a case of Metal Polish, as a starter."

Then there was Butler. Butler was telling one day about harness oil competition in a part of his territory. Apparently the trade was glued to a certain competitive brand, didn't know and didn't care to know anything better. Under these conditions dealers refused to stock unknown brands. When asked regarding measures taken to introduce our product, it developed that upon taking the territory his first move was to endeavor to secure a trial order from a transfer and cab company who monopolized the town's transportation business. An endorsement from these people, he felt, would go a long way. At last an order was promised, to be given when a new supply was needed. Upon his next visit to the town the order was waiting, but this time he neglected to look them up. Knowing he had been in the city and receiving no call or explanation, they inferred he didn't care for their business after all, and so ordered a full supply of the competitive brand. Since then they have refused to re-open the question with him; and lacking an active demand from the consumers and without local endorsements, he has been unable to interest a single dealer. Butler has no golden oak table to pound his fist on.

These experiences illustrate the importance of keeping in close touch with the prospective customer. Methods, of course, vary. The salesman and agent does it mostly by personal calls, and in other less direct ways. The office tabulates reported results, and when considered necessary offers suggestions and issues reminders calculated to help the man on the job to secure a good prospect's business. Many large contracts are secured in this way. This morning's mail brings copies of two: one carrying a minimum quantity of over 1,000 barrels lubricants; the other a minimum of 140 barrels. The salesmen were fully posted regarding their predecessors' experiences. There was no lost motion, no groping in the dark, no re-developing the whole proposition. The time and place to strike was known in advance, and they struck effectively.

Reports on results of calls are also taken as a basis for timely distribution of advertising matter, as well as personal letters to the trade, in support of the salesman's efforts, thus knitting the trade closer to the Company and making the salesman's work easier and more effective. It is therefore necessary that salesman's reports on solicitation be complete, correct, and promptly rendered to do the greatest good.

These reports are, also, the home office's barometer of general business conditions. Among other things, they clearly demonstrate that the lubricating consumers of the South are awake to the new economic possibilities of Texaco Lubricants. The credit for this awakening is due largely to our loyal field representatives' constant and vigorous "Quality

Talks" and demonstration of results measuring up to representations. This and many similar achievements, which in the few years since the Beaumont Gusher days have placed The Texas Company among the world leaders in the petroleum industry, bring to us the great duty of preservation and advancement. Whatever our share of this duty, let us heartily accept and vigorously discharge it. Our most responsible duty is advancement. It must be discharged with credit to ourselves, to those that shall follow, and to the mighty builders who have laid the foundations for a world business deep and strong.

SELLING QUALITY LUBRICANTS

P. H. BURGER

Lubricating Assistant, Houston District

The writer's motto has always been "Quality First," and applied to the sale of lubricants the result has been satisfied customers. The right lubricant in the right place sometimes means higher first cost, but with intelligent use the efficiency of a plant's machinery will be increased to such an extent that the decreased cost of operation will more than offset the difference in cost of a high grade lubricant. I always endeavor to impress on the engineers of the plants visited the fact that our highest grade lubricants will reduce the wear on working parts to a minimum and that the life of the machinery will therefore be greatly prolonged. Also, with reduced frictional heat of the bearings the consumption of fuel, necessary to generate excess power to overcome unnecessary friction, will be decreased. Another important reason, it seems to me, for recommending high grade and correspondingly high priced lubricants is the fact that their use will eliminate almost entirely the probability of complaints; for a high grade lubricant will not only be more efficient, but the engineer will be more careful in using it.

An obstacle to be overcome in selling high grade engine oils is the mistaken practice of mixing oils, a high priced cylinder oil being used to increase the body of a cheap machine oil. This, we all know, is more expensive than using a straight run lubricant. The first cost is always higher, and the mixture is a less efficient lubricant than a heavy bodied straight run engine oil. The writer had occasion to visit a plant not long ago in which the engineer was mixing a cylinder oil costing 50 cents a gallon with an engine oil costing 16 cents a gallon. When the manager was shown what this mixture was actually costing and that he was not securing justifiable results, I was able to sell him one of our highest grade engine oils, the net saving in first cost alone being about 3 cents a gallon. In addition, this engine oil could be filtered over and over again.

After a management has been convinced that more efficient lubrication at a saving in cost can be secured by using our high grade lubricants, I consider it of first importance to be familiar enough with the conditions of the particular plant to offer intelligent suggestions regarding the proper quantity of lubricant necessary for the perfect lubrication of the various bearings and working parts. The lubricating engineer's mechanical knowledge and experience in the use of oils is depended upon at this point.

It seems to me that the superior quality of our high priced lubricants, the wonderful efficiency secured wherever they have been used, and their

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varied adaptability to the most exacting conditions should enable us to introduce them into every steam and power plant where the matter of efficient lubrication is, or should be, a serious consideration.

ICE AND REFRIGERATION PLANT LUBRICATION

B. E. CONLEY

Lubricating Engineer, Houston District

As illustrating the problems a Lubricating Engineer is called on to handle, it may be interesting to mention an experience last summer with the engineer of a local ice plant.

Texaco Cylinder Oil had long been successfully used, but for some unknown reason a barrel of competitive cylinder oil was purchased. It proved unsatisfactory and the unused balance was finally returned by the engineer and Texaco re-installed. Our salesman, calling to solicit an order, learned of the occurrence and reproached the engineer for changing to a competitive oil when Texaco had been giving good results. Naturally this was resented and when the writer called a few days later he found an indignant engineer. After a few minutes conversation, however, he became more affable, and upon inquiry regarding the lubrication of his ammonia compressors he said that a competitive Ammonia Oil was being used because Texaco had frozen up. I explained that there must be a mistake, as Texaco Ammonia Oil has a cold test well under zero, and asked to be shown where this oil "froze up." I was taken to the compressor and the engineer pointed out a quarter check valve on the oil line leading from oil pump to the middle of the compressor and said: "This check valve froze up." I explained the impossibility of it unless there was a mechanical defect, such as his pump not working, check valve hung up, or oil line stopped up. I pointed out that if he had considered the temperatures of saturated ammonia, it would have been plain that the trouble was not with the oil. Glancing at his low or suction gauge pressure, I saw it recorded twenty pounds. At this pressure Ammonia has a temperature of 6 degrees above zero. In traveling through the ice tank coil it absorbs approximately ten heat units, making the temperature about 16 F. Compression then begins, and for every inch of piston travel in compressing more heat is generated and transmitted through all of the cylinder. At the end of a stroke of about one hundred and eight pounds condensing pressure the temperature would be 100 F. or over, depending on the way his frost was coming back. This cylinder is equipped with a jacket for circulation of water and seldom undergoes extremes of heat or cold. By placing my hand on the pipe leading from the compressor, and having him do likewise, the temperature seemed to be fully 50 to 60 F. Attention was then again directed to our better-than-zero cold test Ammonia Oil. I also gave him ammonia tables showing conditions under which he was working. The result was that he was convinced the trouble had been due to a mechanical defect and not to the oil. In fact I proved to him that this oil could not freeze up in the compressor system as long as it was kept out of the ice tank. He was left feeling very friendly towards The Texas Company.

The Ammonia table may be of interest to some readers:

Back Pressure.

30 lbs.
25 lbs.
20 lbs.
15 lbs.
10 lbs.
5 lbs.
0 lbs.

Temperature.

17° F
12° F
6° F
0° F
-8° F
-17° F
-31° F

In actual practice zero back pressure is never reached, and rarely is ten pounds exceeded.

The idea prevails among some of our Salesmen that a straight Mineral Cylinder Oil should always be sold to ice plants. This is a mistake, as it depends on mechanical operating conditions whether a pure mineral or a compounded cylinder oil will give the best service.

In plants working entirely condensing, that is, where only the exhaust steam from the cylinders is condensed and used for making ice and the re-boiler is working under a vacuum and without skimmers, a straight mineral cylinder oil should be used. In this case lubricating efficiency is sacrificed to insure the ice being free from oil. A pure mineral cylinder oil will separate, or come to the top of the condensed steam, almost immediately and is easily removed before the condensation passes to the freezing tanks.

A plant condensing with oil separators on the exhaust steam line and equipped with a re-boiler, skimmer, and filters can use a compounded oil. A compounded oil always gives better lubrication than a pure mineral oil because the animal oil mixes with the moist steam and clings to the damp cylinder walls, which a pure mineral oil will not do.

Thorough extraction of the oil from the condensation is necessary; otherwise the finished product may be marred by a scum—usually found in the center at the top of the cake. The burden of accomplishing this rests on the engineer, who should watch details, keeping down the oil feed to the minimum and seeing that the filter and other separating agencies are kept clean. With adequate and properly maintained separating facilities and as long as the engineer will not feed the oil faster than necessary to keep the cylinders well lubricated, almost any cylinder oil not compounded with Raw DeGras can be successfully used. A plant thoroughly well equipped with modern separating appliances, such as steam traps, filters, settling tanks, and re-boilers, and kept clean, could use even an oil so compounded; but many engineers cannot or will not give the proper attention. The mineral cylinder oils protect the finished product against carelessness on the part of the engineer, or against inadequate facilities for securing separation.

Where a compounded oil is used and there is little or no attention given to the question of separation, or the separating agencies are permitted to become filthy, and oil is carried over into the freezing tank, its presence will be detected in the finished product by a scum at the top center of the cake. In the case of a very undesirable compound such as Raw DeGras, there would be a tendency to a yellow tinge in the ice and a slight odor and taste of animal fat. None of our compounded cylinder oils especially recommended for use on ice making equipment are compounded with any objectionable animal oils, those used being of such nature that even with faulty separation there would be little if any possibility of injuring the ice by a stain or flavor. In the writer's opinion Vanguard Cylinder Oil is a

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most desirable cylinder lubricant for use in condensing ice engines. It is a clear, bright, filtered stock, lightly compounded with a fine grade of animal oil, and has given excellent results in every case within his observation. Where a pure mineral cylinder oil is necessary, Vanguard Mineral meets every requirement.

To make pure ice it is necessary that everything connected with the process be kept clean. As the cause of faulty ice is often wrongly attributed to the cylinder oil, it may be well to mention a few of the many causes, aside from oil, affecting the quality of the ice, as outlined by a large ice machine manufacturer. It is of importance, however, that the oil be fed with the utmost economy, as the less there is introduced into the steam before it enters the cylinder the less there will be to extract from the exhaust steam.

Distilled Water System: Red core in the ice may be caused by

1. Unsteady level of water in boiler.
2. Pulling the water too low in storage tank and thus exposing the coils to the action of air,—forming rust.
3. Alternately submerged and exposed coils in storage tank.
4. Cooling the water too much in steam condenser.
5. Rust in generating coils.
6. Coloring matter in the water carried over in the steam.
7. Loosely packed sponge filters.

8. New excelsior in feed water heater. New excelsior should be thoroughly boiled before placing in heater, to get rid of taste and coloring matter.

In starting an ice plant the engineer should be careful to prevent air or rust from getting into the distilled water. The drain at the bottom of the steam pipe or generator should be opened and condensation from the coils should be blown out until whatever rust that may have accumulated in the coil during the shut down is entirely removed. Then the condensation may be turned into the distilling system. The air cock on top of sponge filters should always be open when starting to allow air to escape and not force it over into cans. Always have a good vapor blowing off from reboilers, or, in plants where no reboiler is used, from top of distilled water cooler. It is very necessary to see that this vapor is constantly escaping in order to expel air and gases mixed with the distilled water; if not, you will not make, clear, odorless ice.

Air in ice may be caused by

1. Float in skimmer or regulating tank becoming stuck, allowing reboiler to be drained, allowing air to get in the distilled water system.
2. Leak in the distilled water coolers, allowing raw water to mix with the distilled water.
3. Hole in the hose.

The best way to prevent air getting in the system is to have all the distilled water piping always full of water. In distilling systems using exhaust steam, a float in distilled water storage tank is so arranged that when water rises in said tank the "handy" valve on the inlet pipe is closed, thus causing the distilled water to overflow at the skimmer, in which case the engineer may regulate the live steam supply in generator or steam condenser, or fill a few additional cans so as to save this water which would be otherwise wasted. A small weight is also provided to run up and down in front of a sight board and connect with a float in the skimmer, by which

the level in reboiler can be seen at a glance. The reboiler should never be emptied enough to expose the outlet pipe. In distilling systems where a skimmer is not used the float is placed in the small tank located along side of the reboiler and connected therewith.

To make pure ice it is absolutely necessary to keep everything clean. One of the sponge filters should be cleaned every day. The blow-off valve on reboiler should be opened and all sediment blown off at least twice a day. The reboiler should be cleaned out at least once a month, oftener if water is bad. In machines where charcoal filters are used arrangement should be made to change the charcoal in the filters as soon as it becomes filled with impurities, as it is impossible to get pure ice if the water passes through charcoal filled with impurities. The charcoal can be washed and used over again several times if desired.

Bad taste in the ice, which is usually attributed to "ammonia" in the water, is caused by the presence of uncondensed gases in the water due to insufficient reboiling. The remedy is to see that the water is thoroughly reboiled after it has been condensed. The agitation thus produced causes the gases to be driven off.

The proper amount of cooling water to use on the steam condenser is just enough to condense the steam but not enough to cool the distilled water for filling the cans, as the hotter the distilled water leaves the condenser the less steam will be required in the reboiler coil. The cooling water for the distilled water cooler should be the coldest available, and sufficient in quantity to reduce the distilled water to as low temperature as possible; for the cooler the distilled water can be made by the means of the cooling water, the less heat will be required to be abstracted in the freezing tank.

When the machine is not run regularly (for instance in winter, when the machine is often run only a few hours in a day to hold temperatures) the engineer should note carefully all stuffing boxes and joints, as it is at rush time that leaks are apt to occur more frequently than when running steady. When shutting down for any length of time, all water pipes and tanks containing water should be carefully drained; especially in cold weather this must be carefully attended to, otherwise the water may freeze and burst pipes. The ammonia pipes need not be drained as the ammonia will not freeze at ordinary winter temperatures. Any dirt or scale that may have formed in the water pipes, or double pipe condensers, weak liquor coolers, dehydrators, etc. should be carefully cleaned out, and the distilling system overhauled.

The successful operating of an ice machine and the quantity and quality of ice produced depend largely on the care and watchfulness of the Engineer.

A FEW SUGGESTIONS TO SALESMEN AND AGENTS IN SOLICITING LUBRICATING SALES

T. E. TAYLOR

Lubricating Assistant, Dallas District

Each salesman and agent should carefully read every line in our descriptive price list book, No. 4-A. Read over and over again the special suggestions for various uses of our oils; read the descriptive recommendation offered on each kind of oil, their uses, and what competition these brands are to be used against.

Salemen should co-operate with agents. Talk

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over local sales conditions frequently with them, also with warehouse men and drivers, as to the best ways of reaching the trade. Take them into your confidence and tell them how certain oils are used for different purposes, and that we have a lubricating product for every mechanical device requiring a lubricant. When a sale of refined oil is made from our wagon or station an effort should be made to interest purchaser in the use of our lubricants and greases. Possibly this gasoline sale is for an oil engine requiring a gas engine lubricant. Learn as nearly as possible the competitor's oils and greases; note the uses they cover; get an idea of prices, so that you can show our products in comparison.

In calling on the large users of cylinder and engine oil meet the manager, engineer, assistant engineer, fireman, and oiler. Tell them the quality of Texaco products; recall some of your satisfied customers in their town or nearby towns; tell of some of the large plants throughout the country that are using our products to advantage, especially in the way of saving on lubrication cost. Take advantage of the advertising literature furnished you by the Company from time to time. Put them on the mailing list for our magazine *Lubrication*. If you do not fully understand the mechanical conditions to be dealt with, write your Superintendent and he will give you the desired information and assist in every way.

Talk *quality* from the time you go into a man's office, or engine room, until you leave. Show your samples; let him compare them with anything he may be using (but don't knock the other fellow's oils), and he will see that your oils compare favorably with any others on the market. Find out who does the buying, or who influences the buying. In the event the manager buys independently of the engineer, or *vice versa*, treat them both with all courtesy, using tact or judgment as to the proper consideration you should give all parties concerned. You certainly want the good will of both user and buyer, if you expect to make good in this plant.

In calling on new trade for steam plant lubrication, where they are not familiar with our oils or appear skeptical about changing oils, it is well to ask their consideration of a trial order to demonstrate your quality talk. If you are not sure yourself what oils to put in, write your Superintendent at once, giving competitive brands used, size and make of engines, steam conditions, etc. The lubricating assistant will co-operate with you in every way, even giving your customer the service of our engineering department free of cost in making any practical test in the plant.

EVERY OIL FOR A CERTAIN PLACE— EVERY PLACE FOR A CERTAIN OIL

J. N. PREWITT

Lubricating Engineer, Dallas District

In the sale and use of lubricating oil we find problems daily that require thought and careful handling to produce the desired results.

Our Urso Oil has made a customer in every case in which I have put it in a place where an oil of the characteristics of Urso would be required. The high viscosity of Urso Oil makes it adaptable to the hardest use.

For continuous circulating systems, I have found our Cetus Oil to be a really great oil. In a big power plant in Texas we won out with Cetus Oil against the engineer and Superintendent. The engineer and his entire force were of the opinion no oil would work in this plant but the oil then in

use—a competitive brand. The water in this plant is bad and the oil they were using had given satisfaction, but after calling on the engineer repeatedly, while our Dallas Office worked with the officials of the company, we obtained permission to put Texaco Cetus in two 1,000 K. W. Curtis Turbines. I had the privilege of installing this oil. The filter in this plant holds 700 gallons; the oil is circulated by a duplex pump at 280 lbs. pressure, at the rate of 20 gallons per minute, temperature 167 F. Seven hundred gallons at the rate of 20 per minute would be circulated every 35 minutes. Returning to the filter it goes through water to wash and cool it, then through a filter cloth to clean it. The filter is in four compartments. It is easy to see that the oil does not get much rest in the filter—about 9 minutes. In this short time the oil must be filtered, cooled, and separated from the water it has to pass through which is from two to three feet. The water varies with the amount of oil in the filter—the more oil the less water, as a certain level must be maintained to allow the oil to circulate. Texaco Cetus Oil does the work in this plant very satisfactorily and the Chief Engineer is well pleased with the service it is giving.

I have put our D. G. Engine Oil on Buseh-Sulzer Diesel Gas Engines with very satisfactory results. The Diesel Engine is comparatively a new power but is in no way an experiment, as I can personally state that the engine is absolutely reliable and has a very bright future. These engines are lubricated with oil and water in the crank case, fed by splash of the moving parts in the crank case. There is a force-feed lubricator, mechanically operated to lubricate the cylinders and pistons. The oil and water in the crank case must be kept at a certain level to insure proper lubrication. The oil in the crank case will run about 80 days before it is necessary to change. The amount of oil fed to the crank case varies with the size of the engine. The amount of water fed to the crank case will be regulated by the service and load as well as the outside temperature. This can be determined by keeping close watch on the engine for a few days when in operation. The water used in the crank case should be clean and as free from grit and foreign matter as possible, as the water and oil in the crank case come in contact with the bearings of the engine.

In the use of lubricating oils there are proper and improper ways of applying them and ninety-nine times out of a hundred a complaint is registered the oil is not at fault. A short time ago at a place in West Texas where our 650 T Cylinder Oil was used, the service was satisfactory but a great deal too much oil was used. I cut the feed down, but the minute I left the lubricator, the oiler would open it up again. I made a complete survey of the plant. I traced the drain pipe from the lowest point of the exhaust pipe between the engine cylinders and the heater, and found oil in a big pool at the end of the drain. Keeping a close watch on this drain, I found the oil coming out in large drops, which would indicate that it was not atomized properly, which in this case was true as the steam was not hot enough to break the oil. The steam pressure was at 115 lbs. and very wet. This kind of oil was not giving as good results as some of our lower priced oils would. I recommended a change and the results are very satisfactory.

In making a change of oil the characteristics of the plant should be taken into consideration;

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water conditions; dry or wet steam; high, medium, or low steam pressure. All of these affect the lubricating conditions of a steam cylinder and should be borne in mind in selecting an oil.

In all of my connection with engineers I have met only one man that did not want to do the fair thing by his employers. I had formed a favorable opinion of this man and was mystified when he approached me. The following afternoon I had a long talk with him in his own interest, and told him what the future might have for him as an honest straight-forward man and the methods of The Texas Company in doing business. He took it good naturedly and it went to his heart. He is now using our oils.

I am interested in the oil business and want the co-operation of the entire force. I need it. I believe in the products The Texas Company offers and also believe that there is no such thing as an oil "falling down." It is a matter of being misused: Every oil for a certain place and every place for a certain oil.

LUBRICATING SALES

T. L. MORRIS

Lubricating Assistant, New Orleans District

When a representative is bidding on competitive business, he should make a thorough inspection of the plant, taking into consideration the manner of handling oil supplies and noting possibilities or rather probabilities of waste under their present system. While making this inspection he should obtain the size, speed, and style of machinery to be lubricated, steam pressure, etc. He should then decide on the Texaco products best adapted to the conditions, submit contract covering the oils selected, and strongly recommend that they be used as outlined regardless of price.

It is true that all business cannot be secured on a quality basis, for a number of concerns purchase strictly on a price basis. Where necessity compels the submitting of low priced products, every effort should be exerted by representative and mechanical engineer to bring the business as soon as possible to the point where it can be controlled on a quality basis, ever bearing in mind that business controlled on *quality* is the only business that is mutually beneficial. Experience has taught that business controlled strictly on price is always the most difficult to hold and never proves satisfactory.

FUNCTIONS OF A LUBRICATING ENGINEER

J. T. DOWNS

Lubricating Engineer, New Orleans District

The Mechanical Engineer is looked to for the proper performance of products selected for certain result. He must know what the oils will do and have faith in them. As a rule, he is a trouble adjuster, and is confronted with complaints from concerns and questions from discontented employes, all of which must be met readily and courteously.

The mechanical engineer is often confronted with instances where oils have been sold by agents or salesmen that are not exactly suited to the conditions. On arrival at the plant he is told that his oils "fell down." I want to say that the agent or salesman or engineer who thinks that Texaco oils will "fall down" is a badly mistaken man. It will invariably be found where Texaco Oils are not giving satisfaction, that the wrong oil is being used and when the oil suited to the conditions is put on,

perfect lubrication is obtained. No one can expect the left shoe to fit the right foot; therefore, the right oils must be selected. When the right oil is used and complaint arises, then it is up to the engineer to demonstrate to the engineer in charge of the machinery that it is his lubricator or other machinery that is out of adjustment. A mechanical engineer should never waste time wondering why the oil is not giving satisfaction when he knows it is suited to the purpose for which it is used, but should go right to work on the lubricator or other parts of machinery until the trouble is located and remedied.

One important feature which should not be overlooked is to make friends of all employees at the plant. Keeping on good terms with the men is often more productive of results than going to the management of the concern.

SOME REQUIREMENTS OF A SUCCESSFUL LUBRICATING SALESMAN

C. S. CAMPBELL

Lubricating Assistant, Birmingham District

Practical information on selling may be had from two sources—the technical press and the experiences, often unwritten of masters of the art. Each and every one of our oils being of the highest quality, there remains only the question of application. This can best be compared to a doctor diagnosing a case and applying the right medicines to effect a cure. If the mechanical conditions are properly diagnosed, our salesman, by reference to his price-book, can apply the Texaco prescription which means a permanent cure for lubricating ills.

It matters not whether our connection with the Company be as an official, a salesman, agent, or tank wagon driver, we all serve, and it is well to keep in mind that the acceptance of any of these duties carries with it an obligation and responsibility to make good. Each of us is one of the component parts of a business enterprise on whom the heads of that enterprise depend for loyal service. By half-hearted performance of duty worth is discounted, regardless of ability. Our worth is measured by what we contribute to the business of which we are a part. It is not enough for an employee to manifest willingness to work, but with it should come a realization of what is due the employer and goes with the position. This can best be accomplished by maintaining a personal interest in the performance of duties, keeping in touch with the job at all times, day in and day out, as its friend. There arise in every business times when the employer is in need of prompt and unusual assistance. The call is for men of unquestioned loyalty who know how; and when these are found, promotion surely follows.

In our great and wonderful Company let us all carry out our motto: "All for each—each for all."

TURBINE LUBRICATION

L. J. HANNERS

Lubricating Engineer, Birmingham District

This type of prime mover, embracing, as it does, the highest speed machinery combined with heavy moving parts, calls for the highest class of lubrication. The subject is a broad one, but I shall discuss only one small phase which will, I hope, be of value to some readers, as it refers to a common cause for complaints in which in nine cases out of ten the oil is blamed. Knowledge of this particular

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condition will always place you in a position to correct the trouble.

The particular type of turbine to which I refer is the style equipped with an oiling system in the bed plate, as follows:—The reservoir in the bed plate of the machine, is, of course, heated by the radiation from the steam turbine. The oil is distributed to the different bearings and governor under pressure by a geared oil pump driven by a shaft by means of a worm gear. After passing through the bearings the oil is returned to the reservoir in the bed plate. It passes through gauze wire screens and is then taken up by the pump and forced through the cooler on its way back to the bearings. The cooler consists of a series of U shaped seamless brass tubes expanded into a plate which is so arranged that the oil must pass through each set of tubes on its return through the system. I will relate a recent experience of trouble with this type of machine. The trouble, as usual, at first was blamed on the oil.

We had been successful in obtaining an order for the first oil to be placed in one of these new machines. The reservoir holds 450 gallons and our Cetus Turbine Oil was placed in the system. Shortly after starting the machine the temperature on the bearings showed about 132 degrees F. They continued to operate at practically the same temperature for about three weeks, when the temperature began to rise gradually until at the end of the fifth week it was showing an average of 170 degrees F. This naturally brought about a serious complaint against the oil from the engineers in charge. On investigation, we found that the brass tubes in the cooling system were heavily coated with foreign matter picked up from the cooling water in which the tubes were submerged. We cleaned the tubes thoroughly, and on again starting the engine the bearings returned to normal temperature. This machine has been in continuous operation for the last eight months and is still using Texaco Cetus Turbine Oil and has given no further trouble, except that the coils in the cooling system must be cleaned every four to six weeks.

THE "HOW" OF SELLING QUALITY LUBRICANTS WM. REYNOLDS

Lubricating Assistant, Atlanta District

It is as essential to lubricate the buyer as the engine, not by recourse to obsolete methods of entertaining at dinners, theaters, etc., but by the proper approach, plus such thorough familiarity with our products and their comparative values as will at once command a respect for your knowledge and their worth. A novice creates in the mind of his listener, amusement or annoyance or contempt, very seldom sympathy, and if so, rarely enough to induce patronage.

In order to equip ourselves, we should study our price book and its recommendations religiously, as well as seeking all other information possible. The closer the research the more respect and confidence we will have for Texaco products, none of which will be found wanting when their comparative values are actually known. To be interesting to your customer, know your line.

Oils should never be recommended until conditions are known; then stick to the brand which applies to the specific condition. Lose the business for the time being rather than substitute or take to

price cutting. This action creates at once a confidence in your recommendation and a respect for the brand which will be remembered and begot later consideration.

Texaco Motor Oil is the very finest oil ever produced. No conditions are too extremely exacting; no work too severe. With it flint or hard carbon is an impossibility,—due, first, to the selection of the proper crude material, and next, but not least, to the exacting methods employed in its refining. The latter reason truly applies to all other brands made by The Texas Company; hence their dependability.

A representative might suggest that it was hard to sell high grade oils in his territory because the trade had become accustomed to low priced products; but I insist that a low-priced field offers the very best opportunity, because where high grades are already established and have given satisfactory service, it is hard to persuade the customer that you are able to improve the grade, and particularly so, if you suggest doing it at a lower price; he then becomes suspicious. While, had he been using low priced oils, with occasional trouble or at the expense of an excessive gallonage, you can show him a decrease in gallonage, increased efficiency, with resultant saving in the per diem, longer service, lower cost for the maintenance of machinery and engines, and a smaller consumption of coal.

The Quality Man is usually associated with Quality Products and is usually sufficiently resourceful to maintain his price, increasing the customer's confidence in him and his product and ultimately impressing him with the idea that he has done him a favor in selling him Texaco products, which in ninety-nine percent of cases he actually has.

LUBRICATING CONDITIONS AND MECHANICAL PROBLEMS MET WITH IN ACTUAL PRACTICE

WM. G. HARVEY

Lubricating Engineer, Atlanta District

Some two years ago, the writer worked up a lubricating proposition with the General Manager of the — Lumber Co., of —, S. C. Finally this manager told me to go down and see his engineer. The engineer said: "Well, sir, if you have an oil that will keep this engine (24x60 Corliss) reasonably cool, you can win a home right here. Look at her; main bearing, crank pin, cross head pin, guides, all stinking hot, ready to smoke all the time. Bring in your good oil and show me what you can do."

A good grade of oil from a large competitor was being used, but it seemed to be the nature of the beast to run hot. I talked with this engineer for some time and got the history of the case, as the doctors say. I put in three or four hours with this engineer, and during the course of the afternoon he tried to induce me to phone in a rush order for some of that good oil I was going to try out on his engine. Finally I said, "My good man, it is not a matter of trying out an oil on this engine, or any other. When I put an oil on this engine it is going to go, and it will be entirely satisfactory to you; but I am not going to put one drop of oil on your engine unless I am first allowed to indicate this engine, and correct the mechanical troubles; that is, correct the valve setting or any other trouble that I may develop." The engineer informed me that the valves were set absolutely correct. He had been

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over the settings only a few weeks since and he knew they were right. I again said, "My friend, if you are open to conviction, and are interested in having your engine run smoothly and reasonably cool, relieving you of trouble and worry, let me indicate this engine and demonstrate to you that I know my business."

Finally gaining his permission, I returned to the city and came back early next morning with my American-Thompson. We rigged up this old reliable, and took one card, and there it was, just as I had expected. At 10:30 A. M. (saw-changing time) we had 15 minutes and I got part of the re-adjustment, and during noon hour finished the work of resetting the valves. At 5:30 P. M. my friend came to me and said, "Look here Texas Oil, I don't understand this thing; I can't believe my own eyes. Why, that old scrapheap is running smooth and as cool as a cucumber, something she has never done since I have been here." "Very well," I remarked, "but let's not brag; let's wait until tomorrow night and see how she gets along."

Late in the afternoon of the next day the Manager came in and the engineer told him of the results of my work. Then and there we got our first order for Texaco Oil, and three days later a contract was concluded covering the entire plant, and we have this business to this day.

And my Engineer friend? Is he a booster for Texaco Oil? Why his middle name is Texaco.

Several months later this engineer took a bigger and better job with a lumber concern in northern Alabama, having four mills. After he had been there about six weeks, I put in a week with him and finally a contract was concluded covering this large plant. The young man and Texas Oil are still there.

Another case comes to mind. A little more than a year ago I was instructed to go to Montgomery, Ala. Arriving there the local representative of The Texas Company took me out of the city about 50 miles to a cotton oil mill. Here Aleph, Valor, Honor, and Altair Oils had been tried out. Nothing would hold her (18x42 Corliss). Walking into the engine room I found the engineer pouring cylinder oil in the bearing, and it was smoking. Correcting the valves setting of this engine and also re-adjusting the quarter boxes in the main bearing corrected the trouble. In three hours we dropped back to Aleph Oil and there was no further trouble.

These are concrete examples of mechanical problems met with in the oil business. I could cite innumerable instances in my experience where the Lubricating Engineer makes for higher lubricating efficiency, which is of utmost importance in the

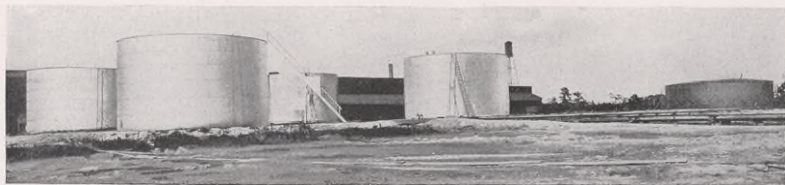
present highly developed state of the mechanical arts. The writer has been with The Texas Company two years and nine months, and I can truthfully say that 75% of the complaints registered on oil are due, not to the oil, but to mechanical conditions. It is my mission to investigate complaints, find the trouble if possible, and correct it.

The large oil companies have their Lubricating Engineers. They also have their salesmen, who are undoubtedly men of considerable initiative and resource. The large coal companies have their Engineers to demonstrate the efficiency of their coal on locomotives and in stationary work. The larger packing concerns have Engineer-Salesmen to demonstrate the different uses and efficiency of steam and water packing. And so on through all the mechanical lines.

As the bow is to the arrow, in all these lines, Salesman—Engineer: the one is necessary unto the other.



Wm. G. Harvey, Lubricating Engineer, Atlanta District.



Tanks at Norfolk Terminal

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BY THE WAY

Supt. M. E. Crawford, Mobile Terminal, sends this selection from *Modern Methods*, entitled *Stick*, by Carington Jackson:

Glue is usually just a thick, vile-smelling liquid. But it has one admirable quality. It sticks.

There's a lesson in glue for you. When you have a task to perform, stick with it till it is done.

Don't be a quitter. A child doesn't learn to walk in one day. You can't save a fortune in one month; neither can you achieve fame and success in that length of time. But you can get a good start if you stick to the task in hand.

To stick you must have a will. The will works at both ends. At the further end it does what it was directed to do; for example, it moves the mind to think, or the muscles to put them at some duty. At the near end it builds the character of the owner.

He who shirks a duty misses in his mind and muscles that pulse of energy to which they are entitled; and his character, instead of having had another stone built into it, has had one taken out from its foundation. Will is the building force: it is life engaged in building. The moment we fail to use it where it ought to be used, we begin to weaken and decay in every part of our nature. He who instantly performs each duty as it appears, with the conscious sense of willing to do it, is beginning to live.

Don't think that your difficulties and hardships prove that it is useless for you to try. They prove the opposite, if anything. There is hardly a name written high in earthly records that is not associated with struggles, suffering, and hardship. When you are tempted to feel that there is no use trying, that is the time to call out your reserves. Give your courage a shaking up. Summon your grit to the front. Get your cheerfulness in working order. There is no time when it is so absolutely necessary to try, and try hard, as the time when you begin to question whether there is any use in trying.

Yes there is use in trying. Keep at it. *Stick*.

★ ★

By almost the same mail the following contribution was received from John Wall, Cooper Foreman at the Norfolk Terminal, whose mind must have been running in nearly the same channels. Mr. Wall entitled his essay *Hard Knocks*.

Hard knocks are bound to come in this world. Sometimes we keep out of range, either by our caution or skill or good luck, for a time; but sooner or later the hard knocks come and no amount of dodging or running will keep them off. They are good for us too. It does not appear at the moment just how they will do us good; in the end, however, we find out that the advantage is on our side as a result of the experience.

How shall we meet them? The answer to the question is important. We must not lose our heads or our hearts or our temper. If we lose our heads we are undone, for it requires steadiness and good calculation to handle ourselves successfully in the

school of hard knocks. Good judgment is developed, if we keep our heads, under the blows. If we lose heart we are beaten. To be a winner means to keep up courage. The very word courage means heart. The man of courage bears himself bravely through the discipline and conquers. If we lose our temper we are vanquished. Anger fogs the whole field of endeavor and makes us uncertain in aim and weak in action.

★ ★

Another philosopher among us sends the following reflections on efficiency and waste. Note also the "Efficiencygram" on page thirty-two. Last month we ran to poetry and humor in these welcome communications:

As there is only one best, easiest, and quickest way to perform an act, it behooves every man and woman to acquire an intimate knowledge of the principles governing such manner of action, which is known as efficient action. There is room for improvement in all walks of life, and this improvement must largely come about by a better understanding of the fundamental principles governing efficient action. No matter what a man's occupation he can gain a new source of inspiration and a better conception of his economic value by understanding and applying the fundamental principles of efficiency to his own work and actions. Only by instilling into the minds of the masses the necessity of understanding and applying the principles of efficiency can we ever hope even to attempt to eradicate the cancer of waste from our social order. The enormous waste of human energy and material things is an evil which all true statesmen and citizens know exists and endeavor to alleviate. The recent stirring of what we call Efficiency has given unto all "the vision" whereby this generation could leave the error of its path of waste, and lay the foundation for a sounder and better social order.



P. D. Cook, Tank Wagon Driver, Texarkana, Texas

Last month we printed a little contribution entitled *The Southern Farmer*, humorously explaining the failure to make money by raising only cotton while buying from other States the various articles mentioned — from alarm clocks to plows' from meat to corn, from soap to blankets. Now comes an indignant rebuttal, demanding to be

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A large part of the Mexican oil shipped from Tampico comes from the Panuco field, approximately fifty miles inland, by the river of the same name, the course of which is unusually tortuous. The oil is transported in barges to Tampico. Several steamboats of the Mississippi river type are in use. The tow shown in the picture is typical. Merchandise is moved in small open barges like the one in the foreground, and the natives bring surprising quantities of fruits and produce to market in their narrow dug-out canoes. The stream is picturesque and a fine waterway. On either shore are many small farms and native dwellings, and occasionally a large banana plantation.

heard, in which each and every indictment is vehemently denied; for instance:

"Who ever saw a Southern farmer wash his face with 'store soap?' Why, they make all the soap right on the farm that they can use.".... "Did you ever know of a Southern farmer sleeping under a blanket? Quilts, quilts. Why, the women on the Southern farms make enough quilts to furnish the European warring nations with more than they could use.".... "And corn! Why, the little boys on Southern farms raise from 100 to 150 bushels of corn per acre; it's hard to tell just how much a Man raises."

If the discussion were a serious one we would make space for the whole substance of the rejoinder; but this mention (made to avoid possibility of even seeming unfair) must suffice. It goes without saying that there are farmers, even cotton farmers, of both kinds in the South. Let each cap be put on where it fits.

★ ★

A shapely three year old "El Berta" is the favorite in my peach orchard. Febru-

ary found this hopeful maiden superbly attired in a suit of exceeding richness of tint; a veritable Texas sunrise of glorious hue, harbinger of abundant fruit. A freeze came, and the health tint of pink gave place to the somber brown of decay. After several days the sun came out again, and one little twig developed three buds, a "Faith, Hope, and Charity" trinity, let us say. And so life persists. Freezes may repress, but they cannot kill, so long as the Great Mother lives, and underneath each thin coating of cheerless ice, always there are peach blossoms awaiting the sunshine.
—L. V. La Taste.

"Are you having any trouble to find work for the unemployed here?"

"Nope. Our trouble here is to get work out of the employed."—Judge.

A little girl whose father was a commercial traveller sat on the porch holding a kitten. Her mother heard this: "Kitty, I know you an' I know your mamma, an' I know all your little brothers an' sisters, but I ain't ever seen your papa." Then after a brief pause, "I spec' he must be a traveling man."—*The Popular Engineer*.

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SAFETY AND SANITATION

V. R. CURRIE,

Chairman Central Committee

The most potent factor in the success or failure of a campaign for safety is the degree of co-operation secured. Given safeguards on every position and hazardous condition in any industry, a complete safety organization, and, if you will, a comprehensive rule book covering every phase of the operation of that particular industry, the efficiency of your safety work depends absolutely on the co-operation of the officials, executives, and operatives.

The officials of a successful and prosperous business find in safety work an expression of humanitarian feelings and motives—the desire to aid, protect, and encourage the operatives in their plants. They realize that all men are brothers and that in each soul is the seed of higher manhood which, given an opportunity and protected from accident, disease, and wrong influences, will flourish. Co-operation is here the basis of success. Without the co-operative effort of the officials, the seed cannot grow; without the reception in good faith of these efforts by the workmen themselves, the efforts are lost. . . .

The executives in the factory must be won into a spirit of co-operation. They are sometimes the hardest to reach, owing to their position midway between the officials and the workman. Foremen should be approached in the spirit that an efficient application of safety is just as important a portion of their administration as is efficient production. When the officials of a company have incorporated in their business policy any movement such as the safety movement, it is absolutely the duty of every foreman to co-operate in forwarding that movement. He should do so instinctively as a good foreman, with all the energy at his command. . . . With natural sympathy for the workmen with whom he is in direct contact, and zeal to carry out the policies of the company by whom he is employed, any foreman worthy of the name should be easily won to the cause of safety, and to the point of wholehearted co-operation. . . .

We find various and very different types of men. Some young men absorb ideas readily and gracefully, and profit by the experiences of others. Some must be driven to obey Safety rules, as well as other rules for their conduct, feeling that it is just so much restraint. We must trust to their future maturity to appreciate the logic rather than the restraint. Finally we have the older men, the old-school mechanics, very high-grade men, who are more or less set in the old methods and principles of shop operation. They resent any change in methods and principles. What has been good, is good enough today. It requires much patience and tact to change their ideas, sometimes the shock of an object lesson, but once they get it they are as strongly for the new ideal as they were formerly against it. Once you have won the appreciation of any man to the side of safety, he can and will greatly influence his fellows. He will aid and assist the one who tries but doesn't know how, he will scold and lecture the careless and indifferent, and he will pity and despise the one who knows but will not. . . .

Enlist the willing co-operation of your men, if possible. If unwilling, it may be necessary to insist and force them, but if neither plan works, you

have but one alternative: relieve your plant of the disturbing element before your spirit of co-operation suffers. Without co-operation, you can do nothing; with it, you can accomplish almost anything.—100% Magazine.

★ ★
Last month Mr. Currie modestly referred to his exhibitions, at Port Arthur, Port Neches, and West Dallas, of motion picture stories of accidents and accident prevention. We have since heard highly appreciative reports of the exhibitions and of his talks. General Supt. F. C. Smith of our Port Arthur Works tells of compliments on the service rendered to the general public as well as to our own employes, and expresses a hope that more entertainment and instruction of the same kind will be provided for his people. Both Supt. R. C. Drake and Asst. Supt. H. O. Preston of the Case and Package Division testify to the interest in Safety awakened in the workers at the Port Arthur Terminal, and to the pleasure and profit they derived. Supt. Drake speaks also of how much persons not connected with our Company were impressed by the careful measures taken by The Texas Company for the protection and welfare of its employes. The opinions of outsiders are represented by the following extracts from letters of Supt. H. M. Smith, Pt. Arthur Traction Co. and Mr. G. P. Williams, Supt. Terminals, Texarkana and Ft. Smith Ry. Co. The former says:

I think that your company is deserving of the highest commendation on this very impressive method of "Safety First" instruction. There is no doubt that this move will have the desired effect in reducing the number of accidents not only to your employes, but to the public as well.

Supt. Williams says:

I have availed myself of the privilege of seeing the afternoon exhibit, which I think was fine, as it brings out in a clean-cut and impressive manner the object of the "Safety First" movement with a splendid portrayal of the anguish and suffering from its disregard. I also had the pleasure of meeting your Mr. Currie and had a very interesting talk with him on the subject. We are trying to make "Safety First" the slogan on our line.

At Port Arthur four meetings were attended by about 2,500 persons; at the Port Neches Works the attendance was about 400; at West Dallas Works, about 200.

Mr. Currie had fifty lantern slides showing safe and unsafe methods of doing work, besides the four moving picture reels:

An American in the Making.

A Crime of Carelessness.

The Man He Might Have Been.

Hazards of Working in and around Cars.—Ed.

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DEPARTMENTAL NEWS

The Managers of the respective Departments have assigned to the gentlemen whose names and addresses are here given the duty of sending to the *Texaco Star*, on or before the twenty-fifth day of each month, reports of new appointments, transfers, removals, resignations, promotions, and other items of departmental news of general interest. Suggestions and information for this purpose should be sent to them before the twentieth day of the month. All are invited to co-operate:

Pipe Line Dept.	A. M. Donoghue, Houston.
Natural Gas Dept.	D. P. Harrington, Fort Worth.
Fuel Oil Dept.	E. B. Joyner, Houston.
Refining Dept.	C. K. Longaker, Houston.
Marine Dept.	(E. C. Macmillan, Port Arthur.
Legal Dept.	(A. R. Weber, New York.
Treasury Dept.	(J. S. Ballard, Houston.
Comptrollers' Dept.	(B. E. Emerson, Houston.
Sales Dept., S. Territory	(J. R. Panney, New York.
Sales Dept., N. Territory	S. Slattery, New York.
Export Dept.	J. B. Nielsen, New York.
Purchasing Dept.	J. E. Byrne, Chicago.
Railway Traffic Dept.	J. W. Painter, Houston.
Producers	P. C. Harvey, Houston.

FUEL OIL DEPT. The Fuel Oil Department much regrets the loss of its Assistant Manager, D. F. McMahan, Mr. McMahan having gone with another oil company.

We note the announcement of the approaching marriage of W. D. Biossat, Bookkeeper in Fuel Oil Department, and Miss Ellen Martin, of Houston, the date of the wedding to be given later.

REFINING DEPT. Cargoes Shipped by The Texas Company from Port Arthur, Texas, month of January, 1915:

DATE	VESSEL	BARRELS	DESTINATION
		Refined.	
1st	S.S. City of Everett	2,083	Bayonne, N. J.
2nd	S.S. Vesta	2,795	Bayonne, N. J.
2nd	Brg. Tulsa	7,994	Amesville, La.
4th	S.S. Yeddo	15,945	So. America
7th	S.S. Illinois	60,708	Norfolk, Va. & Bayonne, N. J.
8th	Brg. Tulsa	8,398	Amesville, La.
9th	S.S. Nils	343	Cuba
12th	S.S. Alm	7,317	West Indies
15th	Brg. Tulsa	8,021	Mobile, Ala.
18th	S.S. Brabant	29,272	Cuba
19th	S.S. Northwestern	22,591	Bayonne, N. J.
20th	M.S. Selene	39,458	China
23rd	S.S. El Zorro	63,044	Dartm'th, Eng.
23rd	S.S. San Juan	1,970	Porto Rico
25th	S.S. Florida	10,383	Del.River, Del.
25th	S.S. Comet	2,197	Bayonne, N. J.
25th	Brg. Magnolia	7,118	Charleston, S.C.
26th	S.S. Alabama	28,646	Bayonne, N. J.
26th	Brg. Dallas	17,168	Bayonne, N. J.
27th	S.S. Radiant	1,819	Bayonne, N. J.
27th	Brg. Tulsa	7,944	Mobile, Ala.
29th	S.S. Vesta	2,998	Bayonne, N. J.

29th	S.S. Illinois	59,768	Bayonne, N. J. & Providence, R.I.
29th	S.S. M. S. Dollar	30,830	Philippine Isl'ds
31st	S.S. San Valerio	3,549	Dartm'th, Eng.
Total		442,359	
		Crude.	
1st	S.S. City of Everett	27,758	Bayonne, N. J.
2nd	S.S. Vesta	34,277	Bayonne, N. J.
7th	S.S. Illinois	2,544	Norfolk, Va. & Bayonne, N. J.
9th	S.S. Nils	3,028	Cuba
18th	S.S. Brabant	230	Cuba
25th	S.S. Florida	1,483	Del. River, Del.
25th	S.S. Comet	21,558	Bayonne, N. J.
27th	S.S. Radiant	21,309	Bayonne, N. J.
29th	S.S. Vesta	34,887	Bayonne, N. J.
Total		147,074	

SALES DEPT. S. TERRITORY G. G. Zenor, General Clerk in Houston District Office, has returned to work fully recovered from an illness of several months. Mr. Zenor was given the glad hand on his return.

Craig Harris, Special Roofing Salesman, has been transferred from New Orleans District to Houston District. Wonder if there is any connection between this and his marriage.

Craig Harris, Special Roofing Salesman, working out of New Orleans District Office, surprised us all by getting married February 25th at Shreveport to Miss Amelia Schaefer, a charming young lady from Houston. This is the second wedding in the Roofing Division since December. Looks as if Supt. F. K. Dorrance still has a chance.

On February 20 our Agent at Center, Texas, Mrs. T. W. Keithley, was married to Mr. J. M. Gilmore. This lady will continue to represent us at Center Station.

On Feb. 15 the Oklahoma District offices were moved from the Oklahoma City Plant to 603½ West Main Street. Every one is elated over being down town, especially as the offices are elegant and well arranged.

On Jan. 1 C. Groves, Agent at Ft. Smith, Ark., tendered his resignation. He was succeeded by F. E. Estes, former Salesman of Ft. Smith territory. The territory was filled by adding to our sales force C. Homer, whom we welcome into our ranks. We feel sure Mr. Homer will make good with the Texaco line.

C. D. Gardiner is another new addition to our Sales Force. Mr. Gardiner will

TEXACO STAR

have charge of the Oklahoma City filling station. We expect to see a steady stream of cars out front.

On Feb. 1 C. M. Kinney, Agent Oklahoma City Station, tendered his resignation to engage in the Cash Register business in Ohio. The Oklahoma boys all wish him success. C. D. Fuller succeeded Mr. Kinney.

On Feb. 1 Agent E. E. Reynolds, Enid, Okla., was transferred to Oklahoma City as City Salesman. He was succeeded at Enid by J. T. Foresee, former salesman of Enid territory.

On Jan. 30 the Oklahoma District held a meeting of Salesmen and Agents.

Daily reports coming from representatives since the District Meeting on Jan. 30 are strong evidence that Agents and Salesmen are convinced of the necessity of selling more lubricants and specialties and are going after the same with vim and determination. Agent Slate has sent in handsome contracts, with all specialties included, and has more business in sight. Agent Foresee is also in evidence, as well Salesmen Potts, Homer, and Kinney. The entire selling force is showing appreciation and understanding of the situation by renewed energy and activity.

Former Salesman Taylor (since Jan. 25 again Lubricating Record Clerk, Birmingham Office) advises that until recently he did not profess to be a disciple of dreams, but has been made to change and take up that profession:

On a recent visit into his territory, accompanied by Lubricating Assistant Campbell, it was necessary for them to occupy the same room at a hotel. During the night he was awakened by Mr. Campbell's talking, and thinking he wished to discuss some piece of business, Mr. Taylor aroused himself to come to attention. It was evident in a moment that Mr. Campbell was dreaming, but as the conversation with an imaginary customer pertained to lubrication, Mr. Taylor thought it would be good to listen. Mr. Campbell was giving forth an argument for the superiority and quality of Texaco Summit Valve and Leader Cylinder Oils which would have done any of the boys good to hear. The next day they were successful in placing a barrel of Summit Valve with the — Manufacturing Co., who had been followers of the — High Pressure Cylinder

Oils for the past twelve years and had given out repeatedly that they would not change. The second day they were successful in placing an order for Summit valve, Leader Cylinder, and then some, with the — Marble Quarries, who had also ventured information a number of times to the effect that it was almost an impossibility to interest them in Texaco Products. Mr. Taylor feels justified in his opinion that "dreams come true."



One of our tank wagons in Mobile during Mardi Gras.



Agent H. W. Patterson, Mobile, Ala. Note the red Star and green T on his automobile. This attracts much attention on the streets, making a very good advertisement. One of our best garage customers at Evergreen, Ala. has this emblem of ours on each of his livery cars, cutting the Star and T from our cases. Our Sub-Agent at Evergreen who is the Sheriff of Conecuh County also has the red Star and green T on his car, which travels the whole County. Here is a good suggestion to all of our agents and traveling men who have cars.

TEXACO STAR

LUBRICATING DIVISION HONOR ROLL, JANUARY, 1915

SOUTHERN TERRITORY
F. E. Castleberry, New Orleans District

DALLAS DISTRICT
W. H. Gray 1st W. M. Brown J. McAdams

HOUSTON DISTRICT
F. H. Sullivan 1st T. E. Meece L. F. Bass

NEW ORLEANS DISTRICT
F. E. Castleberry 1st J. F. McConnell
V. L. Seddon

ATLANTA DISTRICT
R. T. Hanna 1st E. O. Fripp W. P. Vick

BIRMINGHAM DISTRICT
C. W. Levy

Principal Lubricating Brands and Sales Leader
on each for January 1915:

Product	Leader	District
Motor Oil L-H-EH	L. F. Bass	Houston
Transmiss. Lub. 1, 2	R. L. Howell	El Paso
Cup Grease	W. P. Vick	Atlanta
Liq. Wax Fl'r Dress.	D. T. Monroe	Houston
Home Lubricant	M. H. Langford	Houston
Harness Oil	W. P. Vick	Atlanta
Castor Axle Oil	Will Carroll	Dallas
Axle Grease-Graph.	W. P. Vick	Atlanta
Separator Oil	D. T. Monroe	Houston
Harvester Oil	W. C. Arnett	Houston
Belt Dressing	H. B. Roeder	El Paso
Zenith Valve Oil	O. S. Calloway	Dallas
Vanguard Cylinder	B. L. Kawaski	Houston
Leader Cylinder	T. E. Meece	Houston
Pinnacle Cylinder	W. F. Campbell	Dallas
Alcald Oil	F. H. Sullivan	Houston
Cetus Oil	W. P. Vick	Atlanta
Honor Oil	G. H. Seawell	Atlanta
Altair Oil	J. I. Turner	Dallas
Aleph Oil	O. S. Calloway	Dallas
Valor Oil	W. H. Gray	Dallas
Canopus Oil	S. V. Croom	Atlanta
Gas Engine Oil	O. F. Taylor	Atlanta
Winner Oil	W. M. Brown	Dallas
Thread Cut. Oils	F. H. Sullivan	Houston
Transformer Oil	R. L. Howell	El Paso
Ammonia Oil	R. T. Hanna	Atlanta
Crater Compound	J. C. Taylor	Birm'ham
	J. A. Gallagher	Atlanta
	R. T. Hanna	Atlanta
	J. R. Murphy	Birm'ham

JANUARY GALLONAGE LEADERS

Class of Product	January 1914	Leader 1915
Motor Oils	Dallas	Atlanta
Harness Oils	Atlanta	Dallas
Harvester Oils	Houston	El Paso
Home Lubricant	Houston	Atlanta
Liq. Wax Fl'r Dress	Houston	Houston
Gen'l Lub. Oils	Birm'ham	Atlanta
Axle Grease	Houston	Atlanta
Cup Grease	Birm'ham	Atlanta
Transmiss. Lub.	Houston	Dallas

A comparative average on all classes gives Houston District first place on best general results, with Atlanta second and Dallas third. This is the same relative standing as for December, but Houston gained four points on the December showing, while Atlanta lost four points and Dallas lost one point.

JANUARY DISTRICT LEADERS ON SALES BY TANK WAGON DRIVERS

Class of Product	January 1915	1914	Best Gain
Motor Oil	Houston	Atlanta	Houston
Misc. Auto & Gas Eng.	Dallas	Dallas	Dallas
Steam Cylinder Oils	Dallas	Dallas	Dallas
Engine & Machine Specialties	Dallas	Atlanta	Dallas
Black Oil	Dallas	Birm'ham	Dallas
Transmission Lub.	Houston	Houston	El Paso
Cup Grease	Houston	Dallas	Houston
Axle Grease	Houston	Atlanta	Houston

A comparative average of all classes gives Houston District first place for January on best general results, being one point ahead of Dallas which has held first place for six months.

Birmingham has third place for January, two points behind Houston.

GENERAL COMPARATIVE SUMMARY OF JANUARY LUBRICATING LEADERS

	January 1915	1914
Sales Lubes by Classes	Houston	Atlanta
Motor Oil Sales	Dallas	Atlanta
Motor Oil Contracts	Dallas	Atlanta
Tank Wagon Sales	Houston	Birm'ham
Future Orders	New Or.	Oklahoma
Contracts Renewed	Dallas	Pueblo
Deliveries on Expiring Contracts	Atlanta	X
% Total Lub. Deliveries to Min. Contr't Estimates	Pueblo	El Paso
Salesmen reporting greatest number of sales during January on Classes of lubricants:		
Class	Salesman	District
General Lub.	E. H. Browder	Dallas
Motor Oil	W. P. Vick	Atlanta
Transmission Lub.	W. P. Vick	Atlanta
Qckwork Polish	H. B. Roeder	El Paso
Specialties	L. F. Bass	Houston
Graph. Axle Grease	W. P. Vick	Atlanta
Future Orders	C. F. Shipp	Dallas
Contracts Closed	E. G. Smithson	Birm'ham

During the Fall and Winter school terms Texaco Liquid Wax Floor Dressing and Texaco Floor Oil have been put into use by many School Districts. The arrangement with the Board usually covers all buildings in the District. As to the satisfaction given the following is representative:

Pierce, Tex., Feb. 19, 1915.
Mr. D. T. Monroe,
Bay City, Texas. With The Texas Company.

Dear Sir:
In regard to your inquiry, as to the satisfaction your floor oil has given, wish to say that the oil has reached the standard you placed for it in every way. In fact, I don't think that you really understood just how valuable this oil was in our section of the country where the mud is so black and sticky. We find that with this oil on the floor the mud can easily be swept out when dry.

This oil is very cheap, and I think, the very thing for any building where there is dust and mud.

Yours truly,
I. A. GARRETT,
Sec'y Pierce Public School.

Salesman W. F. Campbell, Dallas District, reports that in a town in his territory, having 26 stores, 20 stores and four schools are using Texaco Floor Oil. He says: "Hope to be able to land the balance of the stores. Have the promise of two of them."

TEXACO STAR

The experience of all merchants is reflected in the following:

W. F. LIVINGSTON,
SHOES, TRUNKS, AND BAGS,
FOUR STORES

Charleston, S. C., December 19, 1914.

The Texas Co.,
Sales Dept.,
Charleston, S. C.

Gentlemen:

I have been requested to express my opinion in regard to your Liquid Wax Floor Dressing, which I have bought for all my stores, to be used on the floor. Will state: after a great deal of persuasion on the part of your Mr. E. A. Frupp, of this City, I consented to allow him to send me a sample can to try it on the floor of my main store. Up to that time I was using — exclusively in all of our stores for a number of years, and found same perfectly satisfactory. But after trying a sample of your Liquid Wax Floor Dressing, I found same far superior to any other floor preparation that we have ever used. We ordered four barrels of Liquid Floor Dressing for our four stores. In the first place, it keeps the dust down 100% better than the previous ingredients we used and the cost is probably not more than one-quarter of what we formerly spent. We gave our floors an application of Liquid Wax Floor Dressing every two weeks or 10 days with mop, and we find that is sufficient, and it keeps the floor in nice condition, makes it a nice uniform color, sanitary and preserves the wood, and our stock is in far better condition since using your floor dressing than ever before. We operate four large Shoe Stores, one at Columbia, and three at Charleston, and will be glad to recommend and if necessary to demonstrate your Floor Dressing to any one that calls at any of our stores, and can recommend same very highly and we expect to use same permanently, as we are all well satisfied with the results obtained. It comes up to the recommendations of your Mr. Frupp and I am very much pleased that he insisted that I should try it.

Yours very truly,

W. F. LIVINGSTON

Among the many new large lubricating contracts closed since the first of the year, Birmingham District took on an exceptionally good one early in February, covering all the requirements of the largest sawmill in the State of Alabama. This now gives The Texas Company the oil business of the largest sawmill in Alabama, South Carolina, Florida, Louisiana, Texas, and Oklahoma.

Oklahoma District also took on a nice piece of new business, totaling 200 barrels, and in addition closed up with another concern for all requirements. The latter went over to a competitor last April on a price inducement; in October came back to The Texas Company for Cylinder Oil; and early in January came back for all grades. This is a signal victory for Texaco Quality and Service.

Once again Agent Spence, Denver District, comes in with the most desirable garage business in his section lined up on Texaco Motor Lubricants for the year. This means that larger districts must hustle to keep ahead or even abreast of the little Valiant Denver District on Motor Oil gallonage this Summer. Going to let little Denver District be pace-maker again this Summer?

H. B. Roeder, El Paso District, reports sale of Axle Grease during February which will surely bring him back to the Honor Roll.

T. E. Meece, Houston District, had splendid success during February in lining up new business, as well as several renewals.

B. L. Kawalski, Houston District, turned in record-breaking reports for four consecutive days in February.

Here is an interesting record of Texaco Cetus Oil; the record is nine months longer than U. S. Government specifies. This is no unusual record for Texaco Cetus Oil; previous issues of the *Star* have cited cases of perfect service through longer periods. Talk quality. Quality wins.

SCMTER LIGHTING COMPANY
SUMTER, S. C.

Oct. 8, 1914

The Texas Company,
Atlanta, Ga.

Gentlemen:

Referring to your inquiry regarding use of your Cetus Oil in our Turbine, we will state that we have been using this oil for more than two years on our Turbines and same has been eminently satisfactory throughout. We have used no other oil.

Would further state that since putting on this oil we have not been troubled with any acid reaction attacking the bearings and the emulsification on the account of the presence of water, or by a deposit from the oil.

Trusting that the above will be of some assistance to you and with kindest regards, we are,

Yours truly,

SUMTER LIGHTING COMPANY,
E. H. Moses, General Manager

The following letter from
SALES DEPT. The Sperry Gyroscope
N. TERRITORY Company in regard to our
motor oil and gasoline, and also the pictures (taken in France June, 1914) of Mr. Sperry's machine, will be of interest:



THE SPERRY GYROSCOPE COMPANY

MANHATTAN BRIDGE PLAZA
BOROUGH BROOKLYN NEW YORK CITY

LONDON PARIS MILAN TOKIO HAMBURG
ST. PETERSBURG FIUME COPENHAGEN
STOCKHOLM CONSTANTINOPLE
AEROPLANE DEPT.

February 1st, 1915.

The Texas Company,
17 Battery Place,
New York City.

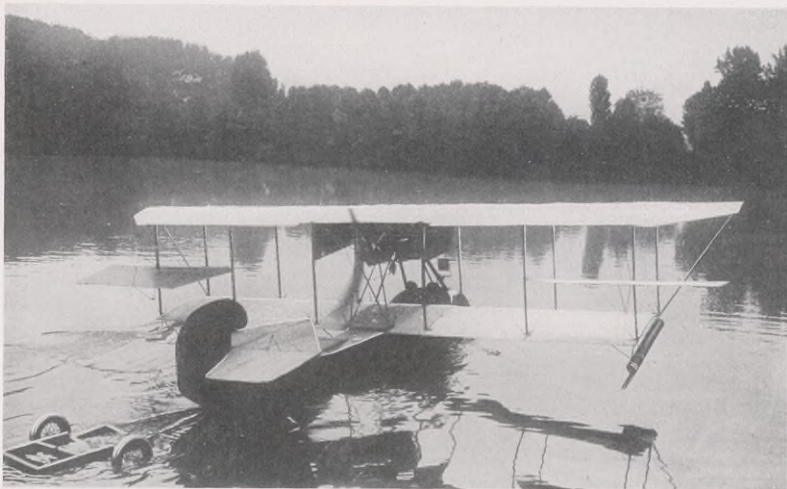
Attention of Mr. J. M. LaFrance.

Gentlemen:

Please send me as soon as possible two drums of Texaco Gasoline and one barrel of Texaco Motor Oil, Special.

You will no doubt be pleased to hear that I used your Texaco Motor Oil and Gasoline on my flight from New York City to Ossining on the 20th inst., when I broke the American One Passenger Endurance Record for a flying boat. My average speed for the 65 miles was 60 miles per hour. This is the same machine with which I won the \$10,000 French safety prize on June 18, 1914. The engine ran perfectly, which I attribute largely to the excellent lubricating qualities of your Motor Oil, Special. The speed developed and low consumption

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of gasoline was due in no small measure to the power and economy of your product.

I will be flying continuously around New York City and vicinity and will use Texaco Gasoline and Motor Oil, Special.

Very truly yours,

L. B. Sperry.

John F. McConnell, of New Orleans District, was an able representative at the National Convention of the Marine Engineers' Association held the last of January in Washington, D. C. Mr. McConnell called at the New York Office and renewed many friendships.

Mrs. A. L. Robinson, who has charge of our General File, has been invited by the State Department of Education to address The Eastern Commercial Teachers Association on Practical Filing, at their convention April 1-3.

On February 5th and 6th there was held in New York City the third semi-annual meeting of Salesmen and Agents of the New York District, presided over by Supt. J. P. Gruet, Jr. The following gentlemen were guests of honor and gave interesting and instructive talks:

C. E. Woodbridge, Manager Sales Dept. N. T.
F. D. Gatchell, Assistant Mgr. Sales Dept.
W. F. Parish, Manager Lubricating Division.
Harry Tipper, Manager Advertising Division.
G. R. Rowland, Chief Engineer.

At the conclusion of the first day's business session a banquet was tendered

by the "Texaco Greasers" to the Salesmen and Agents and their friends. The banquet was an exceptionally fine one, and the program which followed, presided over by J. M. LaFrance, was highly entertaining. Most of the numbers were rendered by employees of The Texas Company, but the services of Mr. C. Boyle of the Patton Paint Co. of Newark, N. J. were especially appreciated. Kenneth Campbell, Salesman N. Y. Dist., acted as Musical Director. The next day the business session was continued. At its close the Texaco Greasers were presented with a certificate of the Organization by W. F. Parish, delegated by the Mother Chapter of Chicago.

L. V. Hoagland, Agent Youngstown, Ohio, has been appointed Operating Inspector, headquarters Albany, N. Y. He is succeeded by Edward Neilsen.

A. H. Nealy, Agent Brooklyn (Freeman Street), N. Y. has been appointed Operating Inspector, headquarters Newark, N. J. He is succeeded by J. L. Marsh.

R. B. DeLacour, formerly Agent Bridgeport, Conn., has been appointed Agent at Albany, N. Y. Mr. DeLacour takes the place made vacant by Harry Roff.

Geo. I. Sheffield has been appointed Agent at Stamford, Conn. effective Jan. 25, vice H. N. Arthur, transferred.

Geo. E. Drucquer, formerly Agent Red

TEXACO STAR

Bank, N. J., has been appointed Acting Agent at Elizabeth, N. J.

N. L. Campbell, formerly Salesman, has been appointed Agent at Red Bank, N. J., vice G. E. Drucquer, transferred.

J. H. Murray, former tankwagon driver, Bradley Beach, N. J., has been appointed Agent at that station, effective Jan. 1.

H. N. Arthur, formerly Agent Stamford, Conn., has been appointed Operating Inspector, headquarters New Rochelle, N. Y., effective Feb. 15.



Our Streets in Winter—Ogdensburg, N. Y.



L. E. Cleland, Sr. and Jr., the Boss and the young Warehouse Man, Ogdensburg, N. Y.

The Buchner Chapter of The Crater Compound Club, Boston District, has recently been organized with the following members:

G. H. Reinhardt	W. E. Dorn
H. L. Buchner	F. F. Hale
J. W. Hopkins	W. A. Maney
A. M. Bruce	A. M. Marcel
C. E. Van Bibber	A. F. Noble
F. H. Knight	W. H. Openshaw
L. M. Henderson	H. E. Shaw
N. W. Phillips, Jr.	G. C. Wright
W. C. Rodger	H. Fletcher
J. E. O'Connor	F. R. Slater
W. R. Wheeler	

Officers:

C. E. Van Bibber	President
F. H. Knight	Vice President
L. M. Henderson	Treasurer
N. W. Phillips, Jr.	Secretary

At the meeting on Feb. 13 W. F. Parish presented the Chapter an Emblem, and also explained the origin of the Emblem, which met with great applause. Mr. Parish was elected an Honorary Member. The members are looking forward with great pleasure to further meetings, and wish to take this opportunity to extend through the columns of the *Texaco Star* to the other Chapters of the Crater Compound Club, and readers of the *Star*, their best wishes for the coming season.

The Boston District employees held their first Annual Banquet on Jan. 21, 1915. The notable guests were Messrs. Woodbridge, Cook, Stevens, Ellwood, Groves, Oakley, Brown, and Troy. These, with Superintendent Reinhardt, constituted the Head Table, around which the fun centered early and late. We guess everybody had a good time, at least we tried to make them have, and if so the credit should be given to the Committee who labored earnestly to make this, our first affair, a success. The Committee consisted of D. H. Curtice, C. D. Miller, G. A. Davis, D. P. Moran.

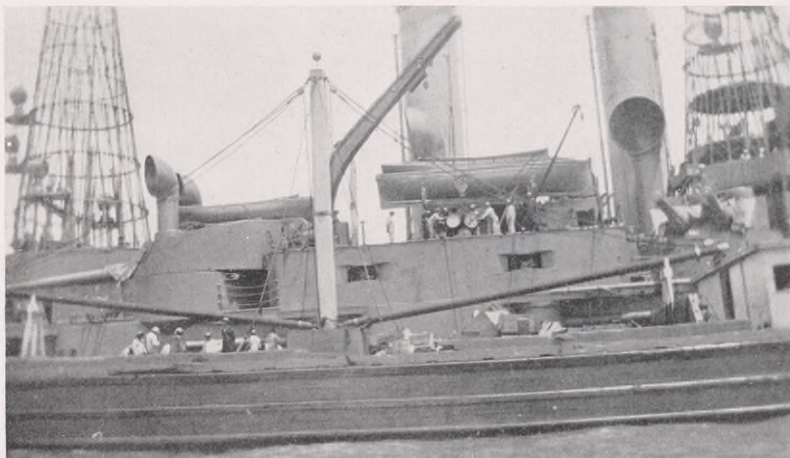
The Norfolk District has just opened a new station at Gastonia, N. C., with J. Flem Johnson as Agent. Our prospects for business at this point are bright.

R. M. Schulken has been appointed Agent at Wilmington, N. C., Station, vice J. G. Fennell, resigned.

W. R. Gray has been appointed Agent at Manteo, N. C. Station, succeeding W. J. Griffin, resigned.

L. C. Peck has been appointed Acting Agent at Bluefield, W. Va., succeeding C. E. Scruggs, resigned.

TEXACO STAR



Greek Battleship *Kilis* taking on board a supply of Texaco Dolphin Oil, bought by the Greek Government.

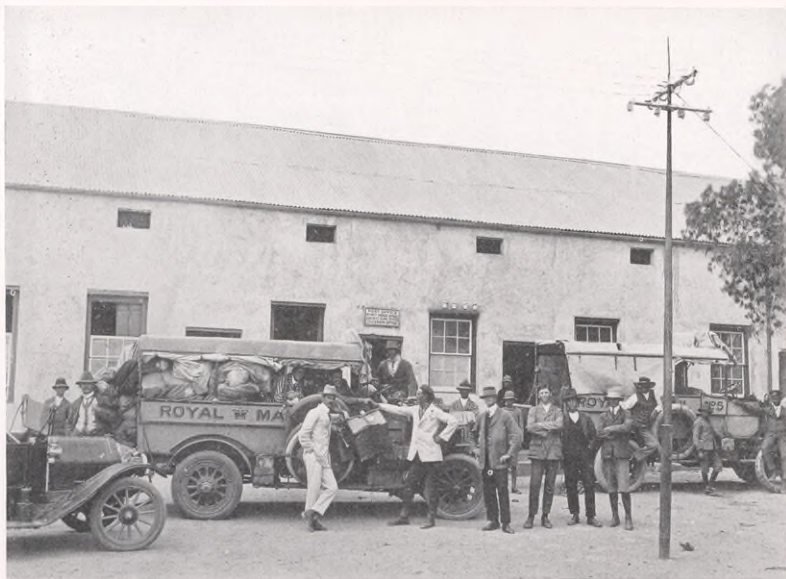


In the April 1914 number of the *Texaco Star* is a picture of the two big white horses at the Youngstown Station. These horses are named "Texaco Heavy" and

"Extra Heavy," carrying signs to this effect on their sides. This naming of horses created considerable comment and led to the practice being somewhat extended. A big, fine team of black horses at the Hawthorn Station, Chicago, were renamed, and they now carry signs attached to their harness with the new names "Crater" and "Thuban." The other horses at this station have been appropriately named after our leading brands of lubricating oils. These last are painted over the stalls and the horses carry side plates. The nine fine looking horses at the Joliet Station have also been renamed after the lubricating oils. The accompanying photograph shows the nameplates. The practice of naming our horses after the oils shows a fine spirit of co-operation, and it helps the organization along in many ways.

The St. Louis Chapter of the Crater Compound Club held its first regular get-together meeting on February 10 at the Majestic Hotel. There was a full attendance of members and two honored guests, our Superintendent H. T. Snell and Manager of Lubricating Division, Chicago District, O. J. May. The short business session, following a dinner, included the election of Messrs. Snell and May as honorary members of the Saint Louis Chapter,

TEXACO STAR



Mail Service, Namaqualand, S. Af. Texaco Gasoline and Lubricants used Exclusively

both already being charter members of the mother Chapter in Chicago. A program had been outlined, but it was set aside. Our guests were given the floor and the boys tried to absorb information and enthusiasm as fast as it was given out. The Motor Oil campaign was a subject upon which much stress was laid, and recent figures show that St. Louis is going to do its part. It is planned to introduce features in these meetings which will be of educational value to the salesmen, but you will hear of this at another time.

EXPORT DEPT. The automobiles shown in this picture form part of the equipment of the Elliott Mail and Passenger Service, running between Clanwilliam and O'Okiep, Namaqualand, South Africa, a distance of 324 miles over a hilly and extremely rough country where, in many places, there are no roads. The trip is made one way in 36 hours, including stops. All the cars in this service use Texaco Gasoline and Lubricants exclusively, and the owners are highly satisfied with our products.

The *S. S. Queen*, carrying a cargo of Texaco products in packages for South Africa, proceeded after discharging there to the Island of Mauritius for a cargo of sugar. On arrival at Mauritius the sugar shippers insisted that Captain Williams of the *Queen* should have the entire hold of his ship whitewashed because his last cargo had consisted of petroleum products. The Captain refused, stating that his ship was perfectly clean; and a thorough inspection proved that there was not a single drop of oil to be found anywhere in the hold. This fact is a high tribute to the quality of the material used and to the care exercised in putting up our packages, as the question of leakage is a constant source of loss and trouble to all steamship owners, shippers, and consignees handling case oil. This was the first instance at Mauritius where a steamer which had carried case oil could take on a cargo of sugar without first being thoroughly cleaned. We congratulate our Port Arthur friends on this achievement.

Ben F. Wright is now in Trinidad.

SUGGESTIVE INDEX OF CURRENT ARTICLES

THE MAIN INTEREST IS INDICATED BY CLASSIFICATION OR BRIEF COMMENT

Journals cited are gladly loaned, if in our library, to persons connected with the Company. The journal or journals called for will be sent by return mail, unless in the hands of some one who has made a previous request—and in the latter case, as promptly as possible. Please give full and exact mailing address.

- EXECUTIVES** The New Law—*Oklahoma Oil and Gas News*, Feb. 11, 1915.
Full text of "Conservation Law", which went into effect Feb. 8, 1915.
- PIPE LINE** Some Modern Methods of Camp Sanitation and Housing.—*The Contractor*, Oct. and Nov. 1914.
- FUEL OIL** Oil Fuel and Its Great Future, by Sir Boverton Redwood—*Oildom*, March 1915.
Presidential Address to the Junior Institution of British Engineers.
Fuel Oil in the U. S. Navy, by H. I. Cone—*Oildom*, March 1915.
- TREASURY** Collecting Bills in Full, by W. L. Betz—*Modern Methods*, Feb. 1915.
One Way to Collect a Bad Bill—*Business*, March 1915.
- REFINING** Oil and the Chemist, by H. Hughes—*Mine, Quarry, and Derrick*, Feb. 3, 1915.
- SALES** An answer to the No Demand Argument—*Business*, Feb. 1915.
A Sales Boomerang, by H. A. Worman—*Modern Methods*, Feb. 1915.
Lubrication, a Scientific Study, by J. W. Saybolt—*Oildom*, Feb. 1915.
Associated With Lubrication, by J. W. Saybolt—*Oildom*, March 1915.
Two classes of salesmen—one sells oil, other sells lubrication—the latter succeeds.
- PAVING AND ROADS** Bituminous Nomenclature—*Engineering and Contracting*, Nov 25, 1914.
Use and interpretation of terms used in connection with bituminous pavements.
Patents on Bituminous Road Construction Since 1900—*Engineering News*, Nov. 5, 1914.
- EXPORT** Foreign Oil Reports for 1914—*Oildom*, Feb. 1915.
- PRODUCERS** Depreciation as Applied to Oil Properties, by Philip W. Henry—*Petroleum Age*, Feb. 1915.
From paper read at New York meeting of A. I. M. E., Feb. 1915.
Natural Hydrocarbons—Where They Are Found in North America, by L. S. Kempher—*Mine, Quarry, and Derrick*, Feb. 3, 1915.
The Origin of Petroleum—*Ibid*.
Papers by Eugene Coste and Dr. Hans Von Hofer, reprinted from transactions of A. I. M. E.
American Oil Fields in 1914—*Ibid*.
Where Not to Drill for Oil—*Ibid*.
"An opinion on geologists and oil finding by a member of the profession."
- GENERAL** A Poor Way to Keep a Job—*Business*, Feb. 1915.
Little Leaks and How to Stop Them—*Ibid*.
The Making of "Right-Hand Men," by Frederick Sanger—*Ibid*.
Getting Your Story Across, by Carroll D. Murphy—*Ibid*.
Eleven ways to tell your story in a letter—How to choose the right way—How to 'dig up' ideas that will influence—Getting on paper the letter you have planned.
List of Recent Oil Patents—*Oildom*, March 1915.

EFFICIENCYGRAM

Each Employee's part in the profit making of the Company consists in the excess Value of his services over what the Company pays him for the services.

We in the General Offices work about on the following schedule:

Number of days in the year	365
From which deduct	
Sundays	52
Half Saturdays	26
Vacation	11
Holidays	6
	95
Leaving a balance of	270

At 8 hours per day this makes a total of 2,160 hours we are at our desks during the year. From this we should probably make deduction for time lost, sometimes through

our own fault and sometimes through causes over which we have no control, so that the total is reduced to near 2,000 hours of actual working time. The point then is this: The \$2,000 per year man is paid about one dollar per hour for his services. Let him consider as the hours flit by whether or not what he is doing is worth one dollar each hour to the Company with an excess for profit. The conclusion must be reached that he must make some hours worth vastly more than one dollar to make up for many that are not worth that price.

The same line of thought applies to the \$1,000 per year man who receives about fifty cents per hour, and to the \$4,000 per year man who receives about two dollars per hour and so on all along the line.—*An Employee in the General Offices*.

AN IDEA FOR ADVERTISING IN INDIA

The following was received from our Bombay Office. It is an example of the efforts of our native assistant "go-down" (warehouse) keeper in Bombay. He proposes a series of such talks for use in his district. It gives you the native Hindu idea of advertising.

A TALK ABOUT TEXACO PRODUCTS

Lizzy.—Good evening, Nora. Oh! what a brilliant lamp you have; it gives a light just as day light.

Nora.—Oh! Lizzy, it is not owing to the lamp that it gives such a brilliant, cool light; it is owing to The Texas Company's oil that you see the room just as Palace of Diamonds.

Lizzy.—Texas Company? I have heard this name. What are their brands?

Nora.—They have Southern Star 150° oil—Unicorn 125° oil. Can you see that the glass reservoir has oil in it?

Lizzy.—Yes, but only because some oil is burnt up; if it was full I could not have told whether it had oil or not, as the oil is so transparent.

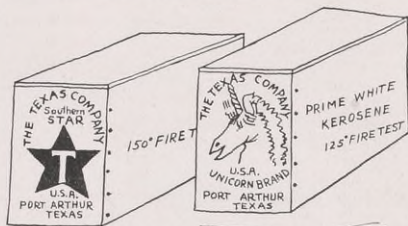
Nora.—We have tried all sorts, Burmah oils, Russian, Persian, and American. Before this company started in India we were using the best American oil in market; one was of opinion that we can never get better oil. But now everybody finds The Texas Company's oils far more superior to all others—American oils even.

Lizzy.—Oh! I shall try and get this oil for my house, too.

Nora.—Do get it and you will find that it is economical.



*Run! for TEXACO SOUTHERN STAR,
Which is in brilliancy the Polar Star;
Try and burn TEXACO UNICORN,
And you will spare money to buy some corn.*



Lizzy.—Excuse me, Nora; you were busy sewing at your machine and I have kept you from work; go on doing it and we shall chit-chat.

Nora.—Yes, Lizzy, I must finish this gown by to-night.

Lizzy.—How neat is your machine and how smoothly it runs.

Nora.—Oh! this machine was giving me too much trouble, but since I have been using Texaco Home Lubricant I never had any trouble with it. Here is the tin.

Lizzy.—What a neat and tiny tin it is. Not a drop of oil is wasted as there is a spout combined with the tin.

Nora.—It is universal oil. It can be used in bicycles, guns, and household implements. My brother Georgy uses this oil for his bicycle. It also prevents rust on all metal surfaces.

Lizzy.—You seem to have equipped your house with The Texas Company's products.

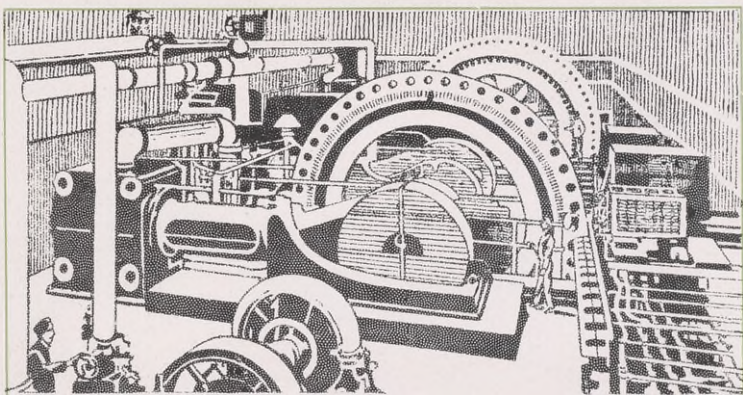
Nora.—Yes, because they are good and economical and worth the price. I forgot to tell you about The Texas Company's roofing. There is hardly any building, big or small, which is not leaking during heavy rains in India, and everybody complains of rain water coming through the roof. This can be got rid of by using Texaco Roofing, which lasts at least for ten years.

Lizzy.—Have you got that on your roof?

Nora.—Yes, for the last two years, and not a drop of water is allowed into our house, though Government and public buildings even were seen leaking. I wonder why they do not use this roofing. My pa sent for a list of Texaco Products and the Manager of the Bombay Office at King's Buildings sent one copy, and whenever we are in want of anything we always refer to the list and try to get the thing from them.

Lizzy.—Can I have a look at the List of Texaco Products?

Nora.—I am so sorry I have not got it here. It is with my pa, as it is twice more useful to him than to us. They have high grade lubricants, and he being a Mill Engineer is very much interested in it. On the day he got the List he sat in his chair by a lighted lamp till late at night to go through it, and when he went to bed he was not tired as he used to be when we were using other oils, as the Texaco Oil not only gives brilliant light but it is very cooling to our eyes.



Where Industrial Power is Created

The particular plant illustrated in the picture is a large one. The factory covers approximately forty acres and none of the space is wasted.

Every conceivable piece of machinery required for the proper conduct of the manufacture of automobiles is to be found within its walls— heavy, rugged presses, drilling machines, turning lathes; light and delicate apparatus for the finishing of small parts; electric generators and motors, engines, etc., are all included.

All this is kept running in the proper condition by

TEXACO LUBRICATING OILS

These oils were installed after being tested in comparison with many competitive brands of oil in all the departments of this factory.

The engineer of the plant said that Texaco Lubricating Oils were "the right oils in the right places" in the factory, and had demonstrated their superior value.

Texaco quality in oils and Texaco service in lubricating knowledge secured this business on "Made in Texas" products. The same service and the same quality are at your door. The **Red-Star-Green-T** Oils of Texaco quality can be secured from our agent. Call on him.

The Texas Company
General Offices, Houston, Texas

