

GAS AND ELECTRIC NEWS

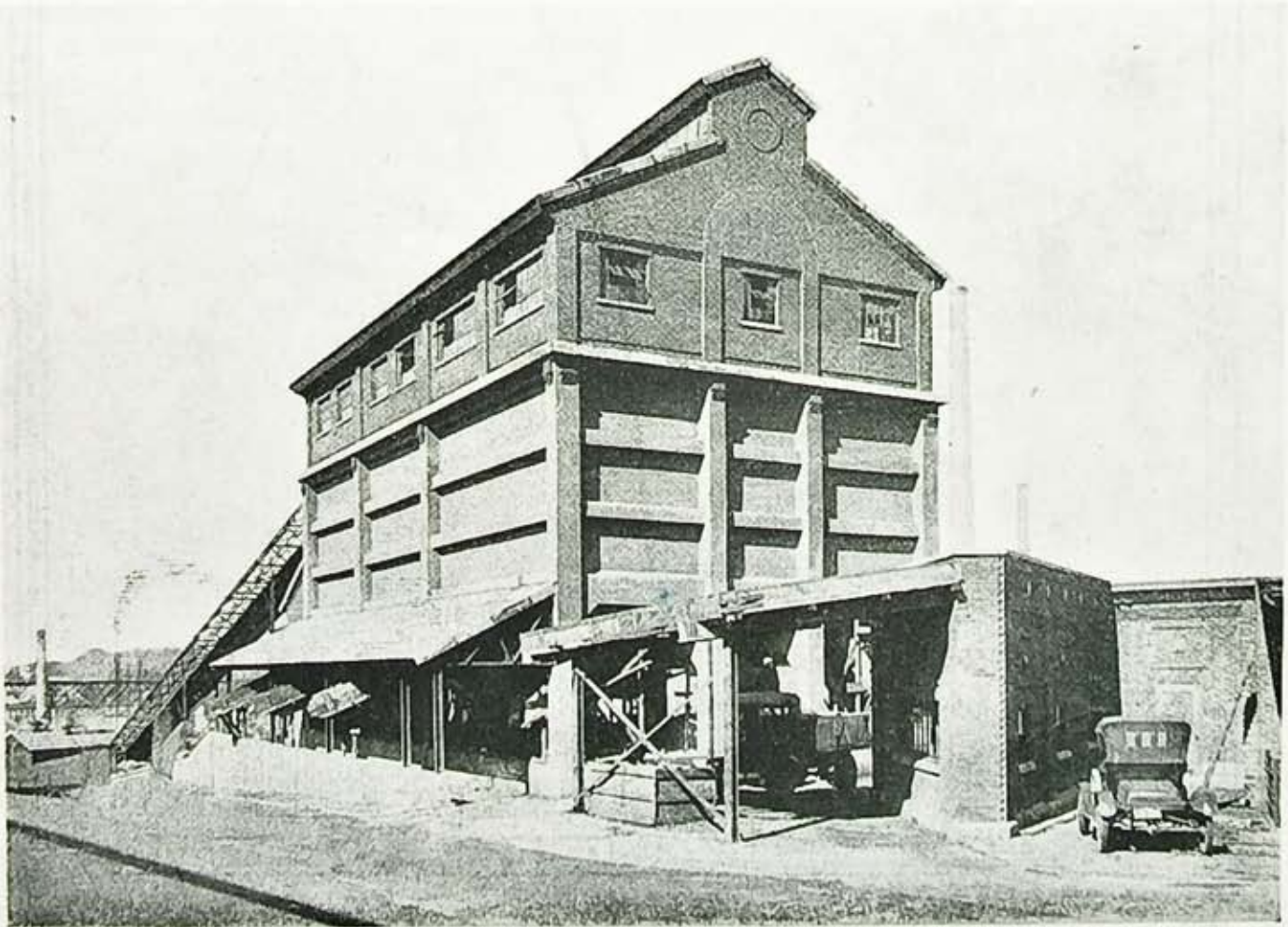
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THE ROCHESTER RAILWAY & LIGHT CO.

VOL. 6

SEPTEMBER, 1918

No. 3



Coke Storage Building at West Station

Our Crucial Test

WE must work and save as never before in our history. We must increase our output and reduce our domestic consumption of all necessary products, in order that there may be a great increasing volume of war materials going forward to our armies and the Allies who are fighting side by side with us. As the people reduce their personal consumption they will be enabled to finance the war by lending their savings to the Government, while at the same time they help themselves by increasing their personal resources and income.

—Secretary William G. McAdoo.



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Coke

WILLIAM H. EARLE

WEBSTER SAYS of Coke that it is the "Solid product of carbonization of coal."

The office encyclopedia has more to say to the effect that it is a "form of fuel composed of the carbonaceous substance left when coal is heated in a confined space. The volatile constituents of the coal are thus lost and a hard, brittle, porous substance with a slight metallic lustre is left. It does not soil the fingers when touched and burns with an intense heat and no smoke." So much for the scholars.

In a previous article in this paper, the writer referred to a "proximate" coal analysis. The same type of analysis is often made of coke. Note the following tabulation again.

Gas Coal

Volatile.....	31.15%
Fixed Carbon.....	58.85%
Ash.....	10.00%
Sulphur.....	2.26%
B.T.U per lb.....	13.374

Suppose that a coal of the above type is heated in such a way that it is not burned, but is separated into those parts which are volatile or gaseous and those which are non gaseous or solid. The remaining product will comprise the fixed carbon and the ash primarily. It may retain a small proportion of the volatile or it may not, according to the duration of the heating period. It will also contain some of the sulphur left behind, chemically combined with some of the constituents.

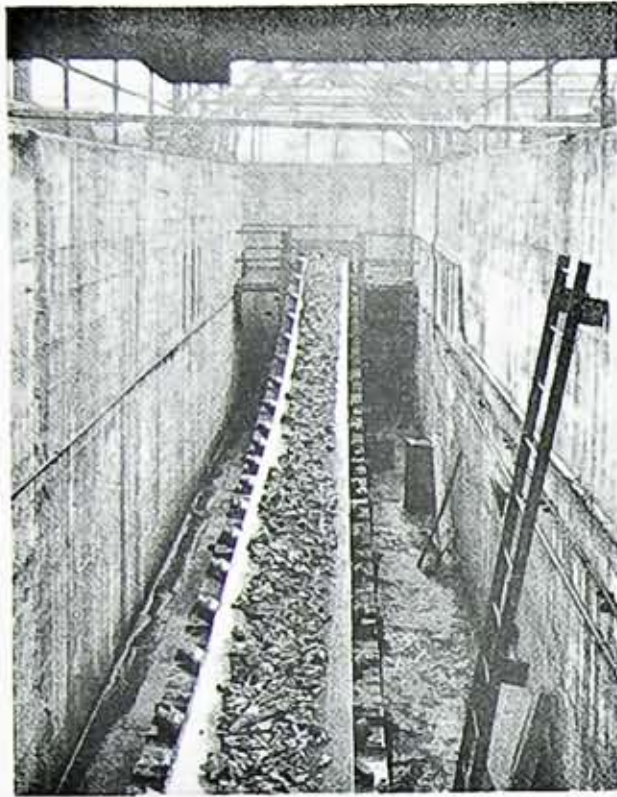
If all the volatile matter is removed, it is apparent that about 30% of the coal has been driven off, leaving about 70% behind. As a matter of practice that is just about what happens, viz: approximately 70% of the coal is recovered as coke. A proximate analysis of the coke will be as follows:

Volatile.....	7.44%
Fixed Carbon.....	78.71%
Ash.....	13.85%
Sulphur.....	0.78%
B.T.U. per lb.....	13.842

Here let me caution the reader, do not add up the items of the above analyses and condemn the chemist because they total over 100%. Volatile, fixed carbon and ash equal 100%. The sulphur is determined separately but is a part of the volatile matter. Again, do not attempt to correlate too closely the analyses quoted, for the coke sample was not necessarily derived from the coal sample quoted.

One further point for the reader unfamiliar with the term B. T. U. per lb. It signifies the number of British Thermal Units derived by burning one pound of the fuel, and a British Thermal Unit is the quantity of heat necessary to raise the temperature of one pound of water one degree. To be more specific, one pound of coke will furnish enough heat to bring to the boiling point about 10 gals. of water, if the water was at 62° F. initially.

The discovery of coke is lost in the obscurities of unwritten history. Probably some savage discovered rem-



Belt Conveyor for Coke

nants of charred wood in some half smothered fire one day and started the charcoal industry. Later on, after coal was discovered, coke was undoubtedly hit upon in much the same way. Most of such things follow the story of the "Roast Pig." At any rate, coke was formerly produced by heating coal in a clumsy oven in which all the gases either burned at the top or escaped into the atmosphere. It is still disgracefully true that vast quantities of coke are produced by the old Bee-hive oven process in an equally wasteful way. Later on the development of the gas industry and its by-products revolutionized the coke industry to its modern proportions and methods, whereby all the potential resources of the original coal are conserved and a high grade of coke is produced.

The processes of coke manufacture have been so frequently covered in discussions of the gas industry that it hardly seems necessary to review them. The coal carbonizing plant in Rochester is one of the most up-to-date plants in all of its appointments

and is the largest plant of its type in the country.

At the end of the carbonizing period, now eleven hours, the hot coke is dropped into an electrically operated industrial car, of about 8 tons capacity. This car was built by the Orenstein-Arthur Koppel Co. It is constructed of cast iron plates on a steel frame work, with a floor inclined at about 40° and a discharging door on one side only. The operator works in a cab completely housed except at the sides and protected against the radiated heat of the hot coke by a double steel wall with a dead air space between.

After receiving the coke the car is run to the quenching house, an annex on the southern end of the retort house. The quenching house is equipped with two elevated steel tanks, containing about 1000 gals. of water. By opening a valve manipulated by means of a chain from the car cab, the water is sprayed quickly over the hot coke. The car is then allowed to drain off the excess water and is run out to the coke wharf.

The wharf is a concrete structure faced with over-lapping cast iron plates, at about 40° incline. Its upper side is just above ground level and just below the level of the discharge side of the coke car. At the bottom is a line of racks or finger gates which, when closed, prevent the coke from sliding off the wharf. The wharf will hold approximately 30 tons of coke. Upon this structure the quenched coke is dropped from the car.

As the coke spreads itself over the wharf, water from a hose is played over the surface to completely quench any live coke remaining. When entirely quenched and drained, the coke is fed off by means of the previously mentioned finger gates upon the conveying system.

The conveying equipment was designed and erected by the Robins Conveying Belt Co. It consists, in

the coke branch, of a series of ten belt conveyors. The first carries the coke from the wharf to a second belt crossing the south end of the property and rising to the third which is about 25 feet above ground level, and travels along the west side of the plant for its entire north to south length. This belt is equipped with a tripper from which the coke may be stocked out into the yard storage. It also carries a traveling hopper used for recovering coke from stock. A Link Belt locomotive crane picks the coke from storage pile, drops it into the hopper which feeds upon the belt. This belt discharges in the crusher building.

In the crusher house the coke can be put through a rotary crusher, though up to date this has not been necessary. Normally the coke spills upon a double shaking screen. The

first plate is perforated with $\frac{5}{8}$ " holes and the second with $1\frac{1}{8}$ " holes. Below these respective screens are collecting bins. The fine material from the $\frac{5}{8}$ " screen is conveyed to the top of the retort house and used for blanketing the retort bottoms. The second screen supplies the fuel for the producers, which is also carried to the producer house by suitable belt conveyors.

The screened coke then slides upon the long incline traveling up to the top of the domestic coke bins. Here the coke is sized by passing over a rotary grizzly, and two sets of shaking screens. Three sizes are obtained, nut, stove and egg—the fine material or breeze being screened into separate bins. The nut size comprises all the coke which passes over a $\frac{1}{2}$ " screen and through a $1\frac{1}{2}$ " screen. The



General View of Coke Storage Yard, showing Belt Conveyors and Crane with Storage Building in Background.



Coke Car leaving Building.

stove size is all that passes over the $1\frac{1}{2}$ " screen. The egg size is all the coke which has passed over the rotary grizzly and runs larger than $2\frac{1}{4}$ ".

From the storage bins the coke is drawn off through discharging chutes which are provided with bar screens to remove the finer material, which has been produced by breakage in the bins, before loading the customer's wagon or truck.

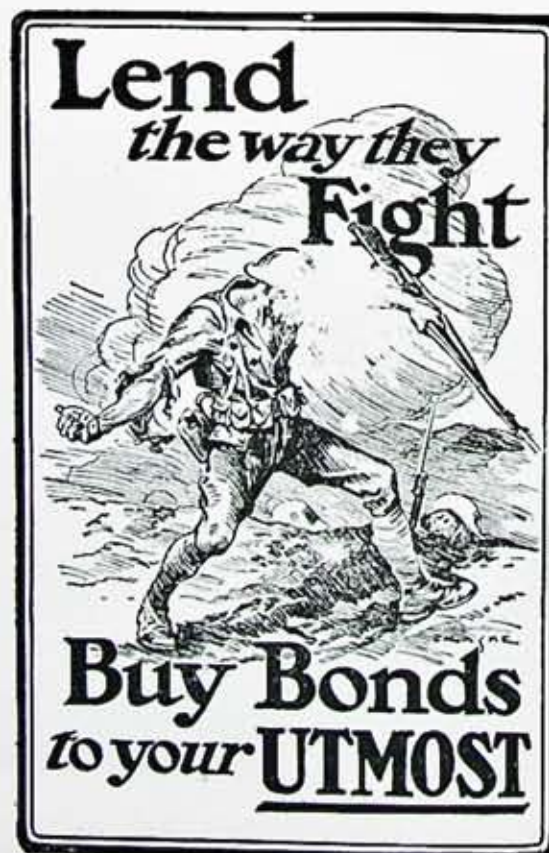
During the month of August the Rochester plant produced 8,688 tons of coke. 2,247 tons were used at the plant for producer fuel. 1,356 tons were used at East Station for water gas manufacture. 7,346 tons were sold, the excess being taken from previously accumulated stock.

Reference to the coke analysis previously quoted shows the nature of coke as a fuel. It is clean, free burning, low in sulphur and low in the volatile constituents which make smoke and soot. It is light to handle, weighing but $\frac{2}{3}$ as much per cubic foot as anthracite coal. It has wide industrial uses and is an excellent domestic fuel. Compare the following analysis of an anthracite furnace coal made in 1915 with the previously shown coke analysis.

Volatile.....	6.63%
Ash.....	15.53%
Sulphur.....	1.21%
Fixed Carbon.....	77.84%
B.T.U. per lb.....	13,125

Aside from certain specific industries, particularly the metallurgical, which have depended upon coke for years, a prejudice based on unfamiliarity has prevailed against the product. The common remarks that it will burn out grates; will not keep over night; is flashy and either too hot or too cold; are without genuine foundation. All the apparent difficulties can be overcome by a little self-education, and the ready assistance of Mr. Miller and his coke sales employees.

The coke industry today, insofar as it is a by-product system, is one of the most potent factors in national economics and is so recognized, for it provides a high grade solid fuel as a residual from the production of the tars, ammonias, light oils and gas which form so big a part of our fighting establishment.



Recent Refinements in Gas Manufacture

ROGER G. MOSSCROP AND RICHARD E. KRUGER

The Installation of an Oil Separator at West Station

IN THE operation of the gas plant at West Station it was found that the overflow from the secondary washer cooler consisted of an emulsion of ammonia liquor and oil. Since this overflow went directly to the decanting tank, a great deal of it was mixed there with the tar and lost, while what remained was carried over with the ammonia liquor into the ammonia still and interfered materially with efficient operation of the still. It was also found from the analysis of a

of the liquor. Tests of this nature were run over a period of ten days and a sample of oil was taken each day for fractionation.

In investigating the rate of overflow a total of 32 barrels was run and the average time taken to fill a barrel was found to be 26 minutes. Since the capacity of the barrel was 52 gallons it was computed that there was an overflow of 2,880 gallons in 24 hours. The individual times taken to fill the barrel were found to vary widely running from 7 minutes to 1 hour and 18 minutes. This variation was due to the drawing of tar when

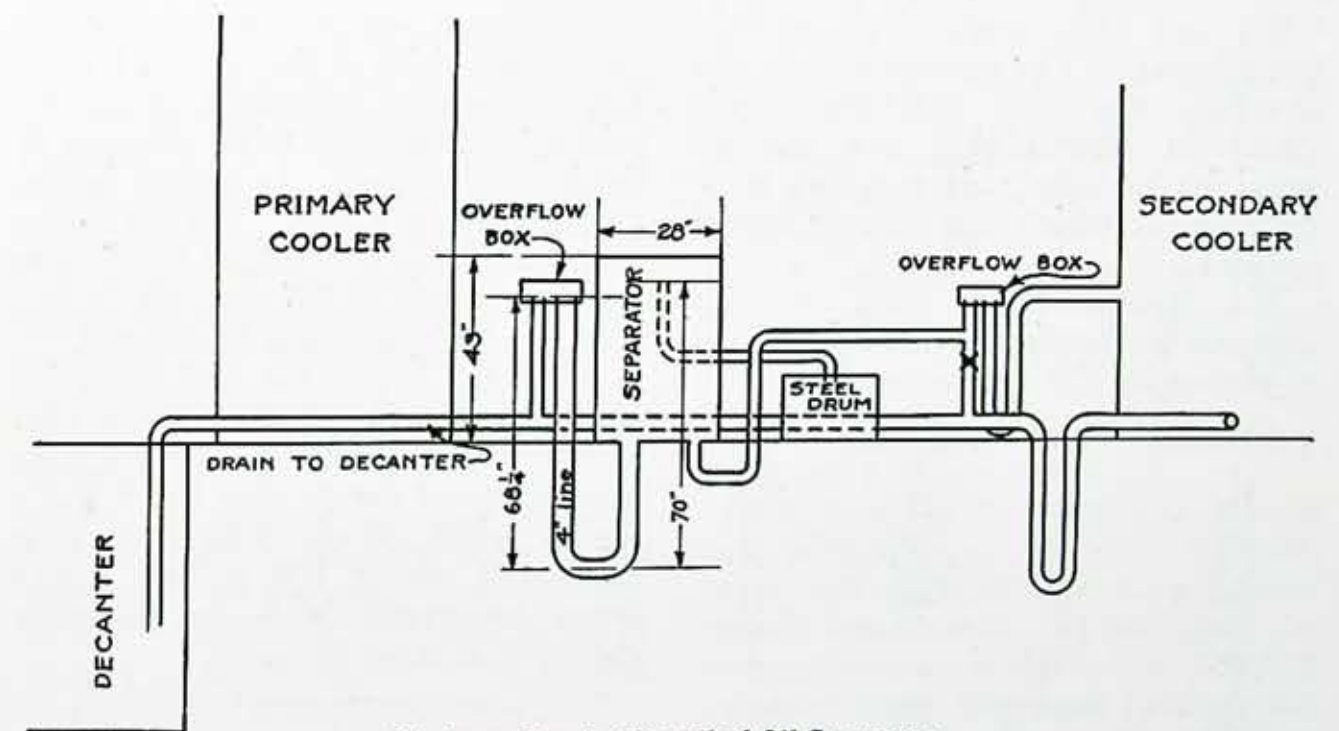


Diagram showing Detail of Oil Separator.

sample of this oil that it had a market value and could be used in munition work. For these reasons it was decided to investigate the amount of oil in the overflow and see whether it was practical to separate it.

The amount of oil was determined by syphoning the total overflow into a barrel of known capacity, recording the time taken to fill the barrel, and then measuring the layer of oil on top

the benches were drawn, for then liquor was used in filling the tar tanks.

On each barrel filled the layer of oil was measured and the average depth of this layer was found to be 1.17 inches. Knowing the dimensions of the barrel, this measurement could be converted into gallons of oil per barrel and then into gallons of oil per day. This computation indicated that there

would be a flow of oil of 89 gallons per day.

It was noticed during the course of these tests that the slower the rate of overflow the higher the per cent of oil, which would indicate that the flow of oil was related to the time factor rather than to the amount of overflow. This can be explained by the fact that although the rate of overflow was cut down by the drawing of tar when the benches were drawn, yet the oil was made at the same rate and was not affected by these draw-offs.

Another observation made, to be used in designing a separator, was the temperature of the overflow and the specific gravities of the oil and liquor at this temperature. The temperature was found to be 96° (F), and the specific gravities of the oil and liquor 0.964 and 1.017 respectively at this temperature. The temperature of the overflow was very carefully duplicated in determining the specific gravities because this was the temperature at which a separator would operate.

Six fractionations were run on samples of oil collected on various days as shown by the accompanying table.

Temperature (F)	Per Cent	Temperature (F)	Per Cent
196	Start	270	Start
200	2	300	2
250	8	350	13
300	12	400	51
350	31	Finished	69
400	65		
186	Start	240	Start
200	1	250	1
250	3	300	2
300	4	350	11
350	13	400	48
400	56	Finished	67
Finished	65		
190	Start	190	Start
200	3	200	0
250	3	250	1
300	4	300	3
350	10	350	12
400	46	400	51
Finished	67	Finished	74

The oil was found to contain a high per cent of naphthalene and in all

cases the distillations were carried to the point where naphthalene came over.

The conclusion reached as a result of these tests was that an oil separator should be installed because at least 98% of the oil would be recovered, the ammonia still operation would be improved, the concentrated ammonia tank would be rid of oil, and finally because such a separator could be easily and cheaply constructed and installed. The reason for the high percentage recovery of the oil lies in the fact that with the old system a great deal of the oil was taken up by the tar in the decanting tank while with the proposed system the oil would not come in contact with the tar and consequently would not be lost.

The basis on which the separator was designed was the difference in the specific gravities of the oil and liquor. This allowed a separator using the principle of two balancing columns of liquid to be used. As shown in the accompanying sketch, the oil overflows at a slightly higher level than the liquor and is led directly into a steel drum, in which it is shipped.

After the separator had been installed it was found that it operated exactly along the lines that the tests had indicated except that there was a higher yield of oil than had been estimated, about 100 gallons a day being recovered, with an efficiency factor of at least 98%.

An Investigation of the Ammonia Production at West Station

WHEN THE United Gas Improvement Company installed the gas plant at West Station it guaranteed a yield of six pounds of ammonia per ton of coal carbonized and intimated that as high as seven and a half pounds might be produced. The plant under operation, however, showed for several months a yield of approximately five and three quarters

pounds, so it was decided to investigate the amount of ammonia contained in the gas as near to the retorts as possible. Such an investigation would show whether there was a high production of ammonia, a large part of which was lost in the recovery process, or whether the production was low.

The first thing to be considered in such an investigation was the point at which the gas should be tested. Theoretically this would be where it came off the retorts, but operating and constructional difficulties made the taking of a fair sample at this point impossible. Consequently it was first decided to take the sample from the foul main after the gas had passed through the liquor seal in the hydraulic mains. The ammonia lost by the gas in passing through the liquor seal was to be determined by analyzing the liquor for the ammonia content.

This method was tried, the gas sample being taken by means of a baby holder used as an aspirator, since at this point the gas is under suction, not pressure. A wet meter reading to thousandths of a cubic foot was used, about 0.5 of a cubic foot being passed through an absorption train containing sulphuric acid. The temperature and vacuum at the meter were observed so that the meter reading could be corrected to 60° (F) and 30 in. of mercury. One test, however, served to show that this method was faulty, for the results arrived at indicated a yield of approximately ten pounds of ammonia per ton of coal carbonized. This was unquestionably absurd, so the method was checked up and three possible sources of error found. The first of these was due to the fact that the liquor in the hydraulic mains also went through the primary cooler and contained ammonia which the gas had lost there. The second was that at the point where the gas sample was taken only the gas coming from the top of the retorts was flowing and that

from the bottom of the retorts was missed entirely. The third was that the gas sample was so small that there was a possibility of a very large error in computing results. All of these sources of error could not be eliminated so a new method was tried.

The new method involved the taking of the gas sample from the nearest place to the retorts which appeared to be practical. This was at the inlet to the primary washer cooler where a mixture of the gas coming from both the top and bottom of the retorts was flowing. A larger sample, two or three cubic feet, was also taken. It was thought that the amount of ammonia lost by the gas in passing through the liquor seal in the hydraulic mains could be determined by analyzing samples of the liquor taken just before it went to the mains and just after it left them but this method was found to be unsatisfactory as no difference in ammonia concentration was found between the two samples. This might seem at first to indicate that no ammonia was lost by the gas in passing through the liquor seal but further consideration of changes in temperature and amounts of free and fixed ammonia shows that such is probably not the case.

The next method to be tried was that of taking a still larger sample, about five cubic feet, over a period of several hours, from the outlet of the primary washer cooler. This method involved three ammonia factors; the ammonia in the gas, in the overflow from the primary cooler and hydraulic main liquor system, and in the liquor from the lower hydraulic mains. The first was taken care of as in the previous tests, by using a baby holder as an aspirator and drawing about 0.3 of a cubic foot of gas through a sulphuric acid absorption train every half hour until a sufficiently large sample had been taken. The second was determined by by-passing the overflow from the primary cooler and hydraulic main liquor system so

that it could be run into barrels of known capacity during the course of the test and its amount and strength determined. Since this overflow went directly to the decanting tanks under ordinary operating conditions, by determining its amount and strength during a certain period the ammonia removed from the gas by the primary cooler and hydraulic mains would be known. The third factor was taken care of by measuring the liquor in the tank taking the overflow from the lower hydraulic mains at the beginning and end of the test. This gave the increase in the tank and consequently the ammonia removed from the gas by these mains during the course of the test.

Four tests of this nature were run and the results were figured on a 24-hour basis, but in all cases the computed yield was less than the actual recovery, running in the neighborhood of five and a quarter pounds of ammonia per ton of coal carbonized. Consequently the method was carefully checked up and the only apparent source of error was in the size of the gas sample. This was remedied by installing a steam syphon and taking a continuous sample of about twenty cubic feet over a period of about five hours.

Several tests with this arrangement were run but the computed results were about the same as with the previous method, so three more changes were made. The first was in the place of taking the gas sample. So far it had been taken from the top of the main. It was thought that in this way some particles of liquor in the gas, which naturally would contain ammonia, were not being drawn out with the gas, so the method of sampling was changed so that the sample was taken from the bottom of the main. In this way the water particles were drawn in with the gas and, since the absorption train was at a lower level than the main, the liquor ran directly into the first bottle of the

train. The second change was to run the tests over an exact number of cycles or draws on the retorts, that is, to start the test at one place on one draw and finish it at the same place on another draw. The tests were run over three draws and were found to take about five and a half hours. The third change or addition was to calculate the amount of liquor circulating through the primary cooler and hydraulic main system and observe whether there was any change of concentration during the course of the test. A fourth factor included in these tests was the ammonia contained in the liquor in the tar. This amounted to 0.01 of a pound per ton of coal.

Five tests of this nature were run and on four of them very good checks were obtained. Since the gas sample was reasonably large and was accurately and fairly taken, and the amount and strength of the liquor from the two liquor systems was determined without any possibility of error, it was rightfully concluded that these tests showed the true production of ammonia.

The results were: 5.95 lbs.; 5.94 lbs.; 5.92 lbs.; and 5.90 lbs. per ton of coal carbonized. These totals were divided up among the three main factors as follows: About 5.2 lbs. from the gas; 0.6 lbs. from the primary cooler and hydraulic main overflow; and 0.1 lb. from the lower hydraulic mains. The change in concentration entered into each test, causing an increase or decrease of from one to two tenths of a pound per ton. This was figured in the results just given.

As a result of these tests it was concluded that the ammonia recovery process has an efficiency of about 96% and that the ammonia production is lower than expected.

The foregoing are two of a series of tests to be completed in the near future, which will serve to bring the works at West Station nearer to 100% efficiency.

Telephone Service

GEORGE T. COLEMAN

AT PRESENT we have two exchanges or sets of switchboards, one at Clinton Avenue and one at Andrews Street.

At Clinton Avenue the Bell Switchboard has 66 extensions and the Home board 63 extensions. At Andrews Street we have 72 extensions on the Home board and 50 extensions on the Bell.

Since the installation of the Andrews switchboards a total of 29 points have been added to the Home board at that place, eighteen of which were pole phones located in different sections of the City. This is significant due to the fact that previous to the installation of the Andrews Street switchboards all our extensions were on two boards at Clinton Avenue which were then loaded to capacity. Any further changes in telephone switchboards if both telephone companies are combined will we hope, mean a 3 or 5 position board for us with all our extensions connecting direct.

All central in-coming and outgoing calls are received at Clinton Avenue, there being no lines to Central from Andrews Street. We however have two direct lines from Andrews to the New York State Railways. This makes it possible for our trouble men and others to get connection to Andrews from any Railway phone.

Our total calls for 24 hours, Andrews and Clinton, average 5,500. This includes inter-communicating and central calls. About 4,500 of these are taken care of in 10 hours, from 8 o'clock A. M. to 6 o'clock P. M., at which time the Clinton boards are cut through to Andrews, with the exception of Saturday when it is done at 1 o'clock P. M.

From the Order Boards we are now phoning all telegrams and placing long distance calls. The phoning of telegrams has increased the work on our

order boards as the average operator could take care of four ordinary complaints in the time required to telephone one telegram, it being necessary to repeat all telegrams to guard against possible mistakes which might prove very costly.

It might be interesting to note that for 1917 January to June, we had a total of 1,889 no gas or poor pressure complaints. For the same months of 1918 we handled a total of 3,385 complaints of the same nature. On all such complaints an order is made to the shop, or in urgent cases phoned. It might be stated here that we have two direct lines from the Clinton order board to Andrews to take care of such calls as stated above, and also complaints of electric trouble. All of the latter are phoned to the despatcher who issues the order to a repairman. A record is also kept of the number of complaints received from our organization regarding instrument trouble. In 1918 January to July we had a total of 280 complaints. The same months of 1917 we had a total of 352. Trouble of this nature is often a cause of complaint of poor service by operators. The Telephone Companies have at all times furnished us with a prompt repair service thus reducing to a minimum the annoyance caused by using improperly adjusted telephone instruments.

Our long distance calls average about 6 per day and are taken care of whenever possible on the Information Board. It is particularly difficult for the operator to render good local service and at the same time handle long distance calls. Two or more position boards would eliminate delays due to this condition, as it would then be possible for a second operator to pick up local calls.

The Telephone Department depends upon and asks the co-operation of all who use the phones in order to maintain a prompt and efficient service. Increased war business makes this especially necessary at this time.



Rochester Railway and Light Company Employees Now Serving With the Colors

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CHARLES B. EVANS *Assistant Editor*
DWIGHT C. ROCKWOOD *Photographer*

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Vol. VI SEPTEMBER, 1918 No. 3

*Let us be content to work,
To do the thing we can, and not presume
To fret because it's little.*

—Robert Browning.

The War Cripple in Our Company

IT IS customary to talk about the American love of fair play and the American characteristic sympathy for the under dog. These virtues, among others, are being brought into the lime-light by the war, to the everlasting credit of the human race.

A new problem is being presented to the war workers at home, which will call for the exercise of much fair play, sympathy and patience, in the reassimilation of crippled soldiers into industry. As Company members we will soon be called upon to do our part in welcoming into our ranks, men crippled in helping to preserve

our sacred democratic institutions. To them we must extend a helping hand.

How common it is to boast of our individual willingness to meet others half-way. Today it is our duty to meet those physically handicapped through the war more than half way. By this is meant that the deserving individuals who are anxious and willing to learn should be carefully shown the easiest methods and the shortest cuts. It is not fair to expect from them the same amount of speed or quantity of work in many of the jobs which they will fill, especially when beginning, but patience will develop their resourcefulness, and consideration will make them useful and valued members of our Company.

The fear has been expressed that the cripples will displace present employees to an unreasonable extent. This is bad logic. This Company is operated as a business proposition to conserve the interests of stockholders, public and employees. Nothing to injure either will be done, but rather a course will be followed which will, within the limits of human judgment, add to the benefits of all. The employment of cripples to take the place of drafted men, and to some extent to release others for actual production of munitions, works to the profits of the Nation, the Company and the individual employee. The Company therefore, in placing cripples in its service, with discretion, fulfills its patriotic duty and displays good business judgment.

It has been said that the average soldier who returns from service has an exalted opinion of his services to the nation, and consequently expects an unreasonable amount of consideration. This is probably true in isolated cases. As a matter of fact, the soldier has rendered an exceptional service, and is entitled to extra consideration, and we may rest satisfied that the proverbial horse sense of our American manhood will,

on the average, make it comparatively easy for us to satisfy our mutual obligations.

In this problem, as in all others, a frank acknowledgement of duty clarifies our ideas of selfish interest. After all has been said, the thing we ought to do, either individually or collectively, is the thing that is best for us to do, all things considered. In measuring up ourselves, let us in the future as in the past, use the biggest yard stick we can find.



The War and Your Work

THE WAR rages and will rage for years. As your own personal life and work must be planned with reference to it, make your plans carefully.

All analyses and expectations regarding the war are affairs of the head, not the heart. Why do thinking men permit their desires to run away with their judgment? Every man who has held a position of responsibility knows the value of organization and preparedness. Every man knows from observation the lengths to which desperate individuals will go. Also every man who reads knows something at least of the resources of the Central Powers. Finally, every one who cares is somewhat familiar with the history of the present war.

The Bible says—"He who runs may read"—Apply it to yourself. Fight the enemy at home by realizing the magnitude of the job, by initiating and co-operating in ways and means to save and to increase efficiency. Learn to look at the war, its military and domestic problems from the viewpoint of the professional soldier. By so doing the chances of correct predictions and resulting efficiency are greatly increased.



Search the Scrap Piles

American extravagance has not been confined to food and household

supplies. In the rush for efficiency in output, much industrial machinery and equipment, or parts and supplies, have gone to the scrap pile for lack of adequate scrutiny with a view to its reclamation. The present unparalleled demand on our stores of metal, and the difficulties of freight transportation, are resulting in more repairing, less discarding, and wider utilization of shop odds and ends. There is coming, moreover, deeper and deeper search of scrap piles for accumulated pieces that may be salvaged. One notable instance of what may be done deserves more than passing notice—the accomplishment of oxyacetylene processes of cutting and welding, resulting from certain missionary activities of the sales promoters of commercial apparatus.

It is reported that at one Western mine, a three months' supply of dollies and dies were secured by welding up the old ones in the discard—at a cost of only \$1 each, compared with \$9 for new ones. There was also found in the scrap, recoverable stamp stems enough to last three months. Short ends of tungsten steel were welded together and the supply replaced purchases for a year. Some oversized manganese-steel crusher plates costing \$20 each were cut down by the gas flame and put to use. In a certain railroad shop there was a wealth of old locomotive drivers with cracked spokes. The cracks were welded and the wheels made to turn again. A shortage was experienced in boiler tubes for renewals, but in the tube junk there were sufficient good short lengths to be welded into tubes for all the engines awaiting renewals. Such instances could be multiplied; we look to see their number grow until they excite no surprise. The possibility of many similar conservation services is strong—as from aluminothermic welding of heavy pieces. The reclamation of the scrap pile has only started!—*Engineering News Record.*

The Company's Thirteenth Annual Picnic

The picnic this year was held August 22nd, at Island Cottage on the Manitou Line. The day was bright and sunshine plentiful, the crowd large and full of animation, all brought about by the happy combination of circumstances that go to make up a "perfect day."

As you stepped off the car at Island Cottage and looked over the smooth green lawn to the hotel, then on to the grove in the rear filled with people in holiday attire, you said "This is great." On the other side was the lake with a fine sandy beach. All the bathing facilities were engaged for the day, so that anyone wearing a Railway and Light button, could have a bath house and bathing suit by asking for it. There were a considerable number of bathers, attracted more by the bright sun and smooth beach, than by the water which was uncomfortably cold.

In the grove the usual customs prevailed, ice cream cones, all manner of soft drinks and the ever popular "hot-dog" were served free.

A band under the direction of Mr. F. C. Lapham gave a delightful musical program, played while sport events were being run off, and for dancing at the hotel in the evening.

The ball game between the Company's regulars and the All Star Team created considerable interest and proved a howling success at least for the All Stars. The howling came principally from the All Stars during the first seven innings when the score stood 6 to 0 in favor of the regulars and success at the finish of the ninth when the score went to fourteen and six in their favor. Brilliant plays featured the game throughout. "Kid" Love, the grand old man of base-ball, playing center field, made a running one hand catch over second base unassisted. Ben Cahill in some mysterious way made two home runs in the

eighth inning. Jack Logan played a wonderful game at third base, his specialty being to always keep the bag safely tucked under his left arm.

Mr. Pat. Martin, the financial manager for the teams, who was expected to furnish suits and a chicken dinner for the players was discovered attempting to escape to Manitou Beach with a pair of chickens.

The batteries of both the All Stars and the Regulars deserve considerable credit for their snappy playing.

ALL STARS		REGULARS
Cahill	1st Base	Shears, Capt.
Ernst	2nd Base	Carlin
Logan & Wright	3rd Base	Newman
Guinan, Capt.	Short	Carpenter
Collins	Right Field	Clark
Curtis	Left Field	Cane
Love	Center Field	Olsan
Odell	Pitcher	Pancoast
Roth	Catcher	Myers

Umpires—Mr. Clements and Mr. Buckley.
Score—Regulars, 6; All Stars, 14.

The events and the results are as follows:

One hundred yard dash for men—First, Mr. Fred S. Raines; Second, Mr. Alex. Payne.

Fifty-yard dash for ladies—First, Miss Harriet Howe; Second, Miss Barbara Price.

Shoe race for boys and girls under 12 years of age—First for girls, Miss Mary Perno; Second, Miss W. Joslin; First for boys, Mr. E. Cross.

Three-legged race for men—First, Messrs. John and James Wright; Second, Messrs. A. Meyers and A. Payne.

Cracker race for ladies—First, Mrs. J. Sailor; Second, Miss Frances Lazarus.

Pie eating contest for boys under 12 years of age—First, Mr. J. Perno; Second, Mr. F. Masterson.

Doughnut race for girls under 12 years of age—First, Miss W. Joslyn; Second, Miss N. Morse.

Combination race—Ladies and Men—First, Mr. E. H. Hoagland and Miss M. Freeman; Second, Mr. and Mrs. T. H. Nash.

Tug of war for ladies—Gas & Electric Distribution Dept. vs. Main Office—Won by Gas & Electric Distribution Dept.

Tug of war for men—Gas Dept. vs. Electric Dept.—Won by Electric Dept.

Pillow fight—Won by Mr. P. Heughes.

Quoits—Won by Vice President and General Manager James T. Hutchings and Assistant General Manager Herman Russell.

There was also a spirited game of base ball played by the ladies of the



"Celebrities"



Three Legged Race Winners



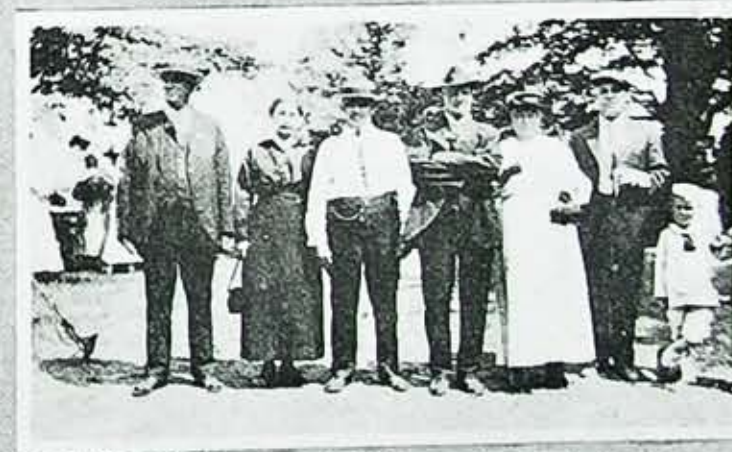
The Family Party



KP&GM - J.T.



Girls Tug of War



One of Many Real Reunions



"Endersers"



Two Kinds of Sunshine



Committee Disagreement



Starting the Girls Race



Three Legged Race



Asst. G.M. - H.R.



Pie Race



Shoe Race Winners



Pie Race Winners



Looking Them Over



Miss Hone - Winner of Girls Race



Some Bullers



"Alla Day"



"Leave it to Them"

Electric Generation

The new 3,000 kilowatt lowering transformer for Station No. 35 arrived on August 20th and is being installed as rapidly as possible to relieve the present unbalanced condition existing on the tie lines between No. 3 and No. 35 Stations.



The work of installing the 60 cycle street railway rotary converter at No. 5 Station is near completion and will help in making it possible for the New York State Railways to shut down their Charlotte Substation (R-13) for the winter.



The two 12,500 K.W., 11,000 Volt 60 cycle generators at New No. 5 Station have undergone a thorough overhauling during the low water season just passing, and are now in first class condition to "Do Their Bit."



The total generated load for August was 15,604,555 K. W. H. and exceeds the generation for the corresponding month of 1917 by thirty-four per cent or more than 4,000,000 K. W. H. Our hydro-electric equipment due to unusually low water conditions during the past month has been of comparatively little service and has made it necessary for the steam equipment to carry the greater part of this constantly increasing load. The efficient manner in which this work has been and is being carried through reflects considerable credit on all members of the department directly concerned.



Several much needed changes are being made in the galleries at No. 3 Station which will greatly increase the safety factor there by adding more floor space to the present cramped quarters of the rotary and motor generator equipment.

Main Office on one side and the ladies of the Front Street Offices on the other. The score was 9 to 9. The umpires from the Main Office were Messrs. L. E. Sanderson and F. T. Houlahan, from Front Street, Messrs. W. J. Consler and T. H. Nash.

Among the invited guests were Mr. R. W. Post, Director of the City Laboratory and Mr. Irving F. Ernst of the Public Works Department.

Much credit is due the successful efforts of the committees and those who assisted in bringing about such a happy reunion of Company employees. Features of special interest were the cheerful family parties and the happy children. The comment was often overheard that the Railway and Light crowd was a good crowd to be with.

The following is the personnel of the Committees:

General Committee: E. C. Scobell, Chairman; V. C. Hoddick, Vice Chairman; F. E. Herring, Secretary; Wm. C. Gosnell, Treasurer.

Sub Committees: Publicity—Messrs. T. H. Yawger, J. P. MacSweeney. Transportation—Messrs. Thos. Christie, Harold Hoagland. Refreshments—Messrs. Joseph Switzer, Walter Dailey. Sports—Messrs. W. Consler, Walter Drew. Music—Messrs. Harry Donovan, L. E. Sanderson. First Aid—Mr. Stanley Burns. Starter—Mr. George A. Bailey.

Gas Manufacture

The oil tar still at East Station is again in operation and produced during August nearly 4,000 gallons of distillate.



The ammonia still from the old plant at East Station has been entirely renovated, remodeled and rebuilt at West Station, providing an auxiliary still for ammonia concentration. The new still has, however, operated much more satisfactorily during past weeks than formerly and has been able to handle practically all of the weak liquor produced.

ing of a new vertical retort house just completed by his firm.

Miss Angelina Place, of the Purchasing Dept., Mrs. E. A. Wilson, of the Mailing Dept., and Miss Minnie Howe of the Balancing Dept., all report having spent vacations in and about Rochester.

Miss Esther Seward, of this City, and Lieut. Donald S. Crawford, formerly of West Station, were married on Sunday, September 1st. Lieut. Crawford is a member of the Signal Corps.

Vice-President and Mrs. Robert M. Searle have returned from a very pleasant vacation spent at Southold, Long Island. During their trip they saw Mr. Joseph P. Haftenkamp, Supt. of Gas Manufacture, who sent regards to his friends in the Company.

Miss Barbara Price, of the Auditing Department, has entered an Army Nursing Training School for Red Cross Nursing and Reconstruction Work. A luncheon was given in her honor by some of her girl friends in the Company, who presented her with a beautiful pair of suede gloves.

Miss Ethel L. Harper, stenographer in Auditing Department for four years, has resigned her position to enter the employ of Naramore & Niles, Public Accountants. A farewell luncheon was given her by a few of her friends in the Company, in the ladies rest room. The table was prettily decorated in red, white and blue, and she was presented with a bouquet of Gladiolus.

Recent visitors at the new Gas Plant were Mr. Steinwedell, Secretary of the Gas Manufacturing Company of Cleveland, Ohio; Mr. DeHart, President of Isbel-Porter Company, Jersey City, N. J.; Mr. Readio, Assistant Chemical Engineer, Providence Gas Light Company, Providence, R. I.; and Mr. Green, Superintendent of the Municipal Plant, Brooklyn Union Gas Company.

Mr. Angus MacKay, formerly in the Consumer's Ledger Department,

recently received a fine tribute from a Corporal who was trained at Camp Dix. In the Rochester Democrat & Chronicle, the Corporal concludes an interesting description of first impressions of camp life as follows: "I have discovered that the Y. M. C. A. secretary of whom I have been writing is Angus MacKay of Berkeley Street, Rochester, where perhaps he has left a happy home and family to be of service to the men in khaki. He is a man who is doing good and leaving behind him a monument which the storms of time can never destroy. He has printed his name in love and kindness on the hearts of thousands."

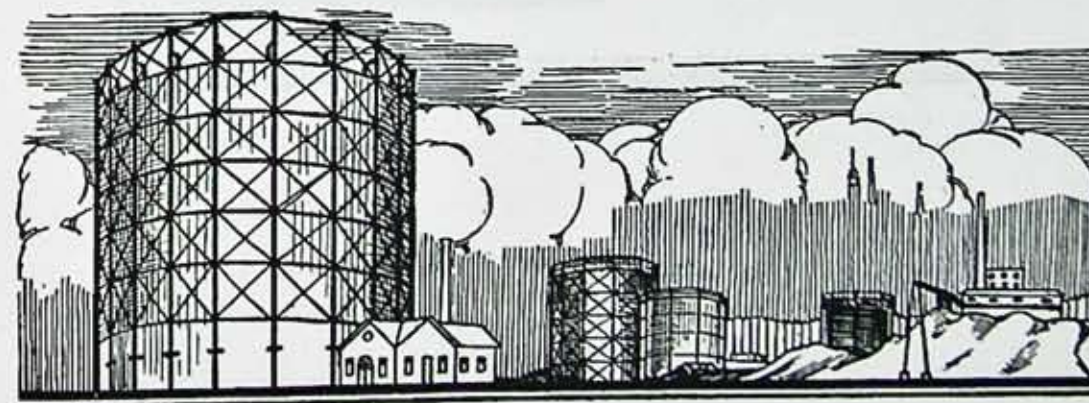
Among those who came to the Company in July and August are: Miss Phyllis Winans, clerk Tabulating Dept.; Miss Rosalind Eaton, typist, and Miss Dorothy Greenstone, filing clerk, Auditing Dept.; Miss Irene Gerba, clerk Billing Dept.; Miss Mary Orlow, Miss Alice Guinan and Miss Ruth Porter, operators Telephone Dept.; Mrs. Laura Gary, Miss Florence Bush, Miss Dorothy Kuhnert, clerks Meter Reading Dept.; Miss Anna Gerow and Mrs. May Nelson, clerks Consumers Ledger Dept.; Miss Alice Rexford, clerk Payroll Dept.; Miss Evelyn Martin and Miss Marie Turner, messengers Mailing Dept.; Miss Hazel Richmond, Miss Myrtle Woodward and Mrs. Lillian Whited, collectors; Miss Jane R. Petty, Miss Jennie Schuiten, Miss Catharine L. King and Miss Mollie Straub, bill delivers; Mrs. Laura Walsh and Miss Dorothy Lamphere, armature winders Motor Dept.; Miss E. Marie Vogler, clerk General Construction Dept.; Mr. Clarence H. Manzler, clerk Employment Dept.; Mr. Ray Coyle, operator Telephone Dept.; Mr. John Nauerth, clerk Coke Sales Dept.; Mr. Chester Keehley, clerk Addressograph Dept.; Mr. Charles E. Walker and Mr. James Nolan, clerks Credit Dept.; Mr. Herman Walz, messenger Mailing Dept.; Mr. Peter Stirger, collector.

Opportunity

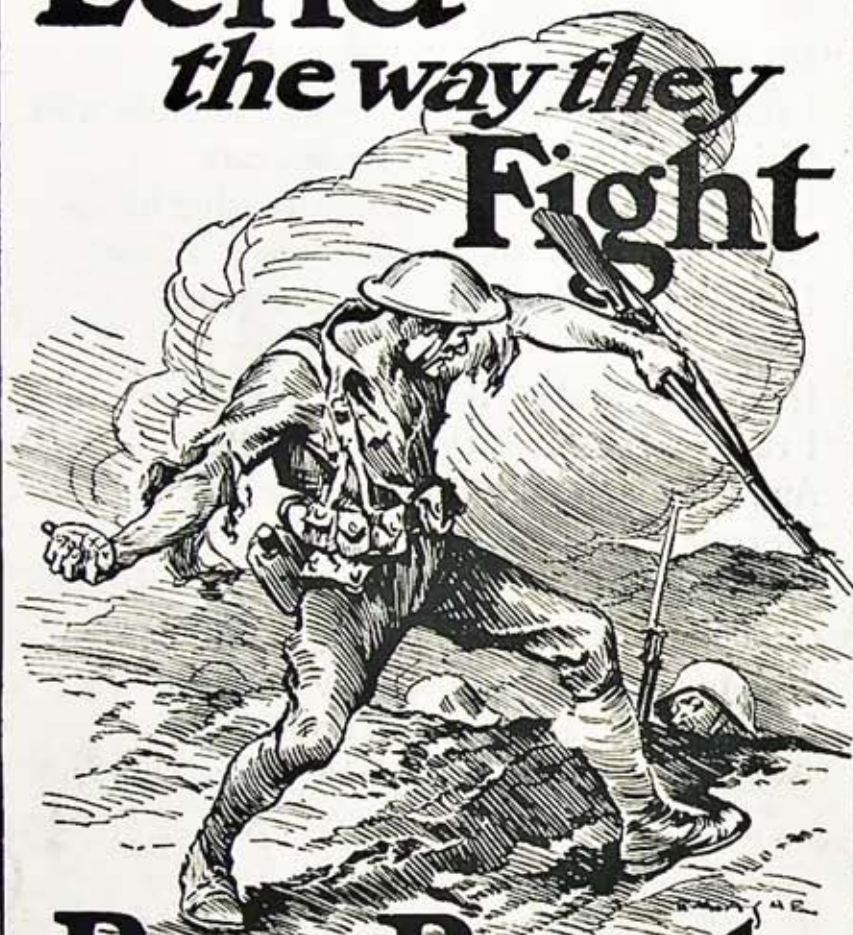
"Master of human destinies am I!
Fame, love, and fortune on my footsteps wait.
Cities and fields I walk; I penetrate
Deserts and seas remote, and passing by
Hovel and mart and palace—soon or late
I knock unbidden once at every gate!

If sleeping, wake—if feasting, rise before
I turn away. It is the hour of fate,
And they who follow me reach every state
Mortals desire, and conquer every foe
Save death; but those who doubt or hesitate,
Condemned to failure, penury and woe,
Seek me in vain and uselessly implore.
I answer not, and I return no more!"

—John James Ingalls.



Lend
the way they
Fight



Buy Bonds
to your **UTMOST**