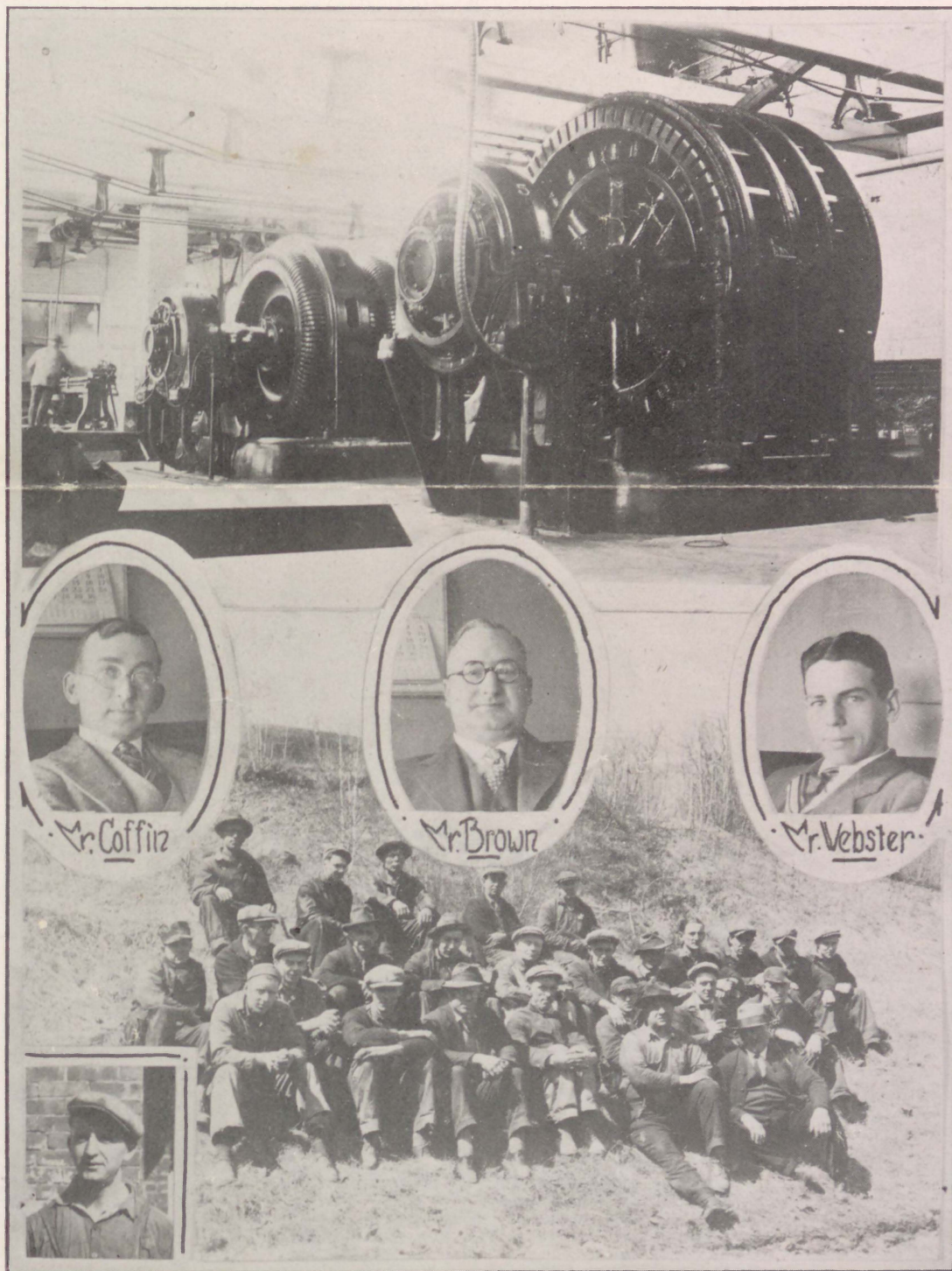


THE BANGOR HYDRO — NEWS — ELECTRIC

Vol. 2 No. 8

July, 1929

Bangor, Maine



BANGOR HYDRO-ELECTRIC NEWS

PUBLISHED EVERY MONTH
FOR AND BY EMPLOYEES OF

THE BANGOR HYDRO-ELECTRIC COMPANY

Vol. 2

Bangor, Maine, July 1929

No. 8

Chief Ed., G. M. Stetson

Mng. Ed., H. C. Dearborn

News Ed., P. A. Mann

❖ Editorial ❖

EXPORT LAW

On September 9th the voters of the State of Maine will vote upon a referendum concerning the export of surplus power from the State of Maine.

The Board of Directors of the Bangor Hydro-Electric Company, representing the leading industries in Eastern Maine, have very carefully investigated this act, and it is their belief that it is for the best interest of this part of the State that the bill be passed. They believe that surplus power exists in the State of Maine, a large amount of which is now being wasted; that a market for this power that is now being wasted can be used in other industrial areas of New England; that new income resulting from the sale of surplus power will have a general tendency to rate reductions and be of further assistance in rural line extensions.

The House of Representatives has passed the bill; the hope that the people of Maine will accept it in the referendum Senate has passed it; the Governor has signed it; and it is their of September 9th.

Ellsworth Regains Lead in Commercial Sales

The Ellsworth Division, by turning in \$442 per residential meter for the month of June, has gone to the top of our list in merchandise business for the year, although Bar Harbor turned in the largest volume for the month. Ellsworth also continues to hold first-place position in new business for the year.



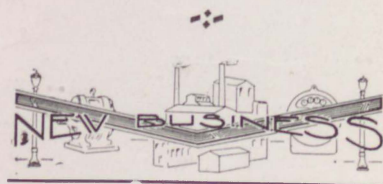
COMMERCIAL SALES

Month of June

District	Sales per Res. Meter
Bar Harbor	\$ 4.75
Ellsworth	4.42
Eastport	3.74
Machias	2.59
Millinocket	1.92
Harrington	1.91
Old Town	1.48
Bangor	1.30
Lincoln	1.07

For the Year

District	Sales per Res. Meter
Ellsworth	\$13.51
Harrington	11.96
Bar Harbor	11.20
Millinocket	10.50
Eastport	9.23
Old Town	6.53
Machias	6.18
Bangor	5.71
Lincoln	4.01



NEW BUSINESS

Month of June

District	Sales per Res. Meter
Bar Harbor	\$ 1.41
Machias	1.15
Ellsworth	1.02
Millinocket	1.01
Lincoln	.66
Bangor	.43
Old Town	.39

For the Year

District	Sales per Res. Meter
Ellsworth	\$ 3.25
Bar Harbor	3.25
Millinocket	3.21
Machias	2.86
Bangor	1.98
Old Town	1.92
Lincoln	1.72

New Frequency Changer

When the Milford Power Station was built to supply power for the Eastern Manufacturing Company of South Brewer, Milford was confidently believed to have capacity enough for any possible future need of the paper mill. As time went on, the mill grew far beyond those early expectations and it became necessary to install a 1000 KW frequency changer at Veazie Station to supplement the capacity of Milford.

By way of explanation it may not be amiss to say that Milford generates energy at 25 cycles, being one of only four stations in the State of Maine operating at that frequency, and that the transmission line from Milford Station can be electrically interconnected or "tied in" with our 60 cycle system only through the medium of a frequency changer. The frequency changer, by the way, consists merely of a 25 cycle generator coupled to the same shaft with, and driven by a large 60 cycle motor.

As time went on, the frequency changer became more and more important as an operating unit, particularly during high water in the spring when the Milford flashboards went down, and the capacity of Milford Station was correspondingly reduced. The time came when even with the assistance of the original frequency changer, Milford could not supply all the requirements of the paper mill during high water. Accordingly last fall we purchased another General Electric 1000 KW frequency changer set.

With the purchase of the machine began a race against time to get the new changer in operation before high water. Thanks to the excellent cooperation of the General Electric Company and the team work of our own Planning, Purchasing, and Operating Departments, the well-nigh impossible was accomplished.

The new changer was inspected in its former location at South Norwalk by our Operating Engineer, Mr. Brown and after his acceptance it was dismantled and shipped to Veazie. The parts to the machine were actually landed inside Veazie station, November 27, after which the concrete base was cast and machine reassembled. Joe Fournier and his crew moved the big machine from the railroad to the power station, cast the base and set up the machine.

As installed at South Norwalk the machine was built for 2300 volt operation on the 25 cycle side. It was also designed normally to take power from the 25 cycle system and feed out on the 60 cycle system. In its new location it will normally take power from the 60 cycle system and put it out at 25 cycles.

To adapt the machine for its present operating conditions, the 25 cycle end was reconnected for 6600 volt operation and several damaged coils were replaced. The 60 cycle end was completely rebuilt with a full set of new coils, new laminations and some changes to the frame. The effect of these changes was to increase the capacity to 1110 KW

and to change the voltage to 6600, the same as the old frequency changer. This changer in voltage eliminated the necessity of an additional bank of transformers.

The installation of the new frequency changer is only one of a number of changes now in process, which have in view provisions for the growth of our system within the next five years or more. The space formerly occupied by the machine shop at Veazie has been enlarged and converted into a transformer room. It not only houses the transformers for the new frequency changer but will eventually house the transformers belonging to the old changer also. A fire-proof battery room has also been built into one corner of this space and a new 130 volt battery of the sealed glass-jar type has been installed to replace the old 90 volt battery. The 25 cycle transformer room is also designed to hold the 22 KV lightning arrester, and 22 KV switching if required at a later date.

The concrete cell structure with control conduits, also the main bus and supporting steel structure were completed not only for the new frequency changer but also for the rest of the 1929 construction program. A complete double bus was installed and all necessary switching for the 60 cycle control of both old and new frequency changers. General Electric type FK-132B oil circuit breakers were used, equipped with remote electric control.

The switching equipment on the old changer was completely overhauled and modernized, replacing manual control with electric, and rearranging the circuits so that now all of the 25 cycle switching for both changers occupies the down stream end of the switching gallery in the main station. The 60 cycle starting switches occupy a separate section of the same structure a little further up stream.

In time past, it was customary to separate the two systems at Veazie, operating the changer on an isolated bus section with a limited number of generators, so that the changer would not be overloaded. The new unit was extremely welcome to the Eastern mill, where they are converting spruce trees, rags and kilowatt-hours into pulp and paper as fast as men and machines can do it.

Provisions are made so that either machine may be started either from No. 1 bus or from No. 2 bus; and by using a 60 cycle starting bus only one starting compensator is required for the two units. 25 cycle starting is accomplished through the medium of a half-voltage tap on the 25 cycle transformers.

Although full automatic control is not provided, both changers have automatic overload protection and the circuit breaker control is electrically interlocked, so that the operator cannot close the switches except in the correct sequence. It is thus practically impossible to damage the machines through faulty operation.

The installation of the second frequency changer produced a brand new problem for our operating forces, this problem having to do with synchronizing the second machine after the first was in operation. To any of our station operators synchronizing is almost as simple as turning on the lights, but synchronizing two frequency changers brings in variations quite puzzling to the uninitiated. It seems that when the second machine is being synchronized on the 60 cycle side there are five possible combinations by which the machine can be in synchronism on the 25 cycle side, only one of which is also in overall synchronism on the 60 cycle side. In like manner, when the machine is being started from the 60 cycle side there are 12 possible combinations, only one of which is in overall synchronism with the 25 cycle side. However, the problem has been solved, and now the operators understand how to get the right combination.

From the first of April it was a working days, nights, and Sundays race against time to get the unit in operating condition before the ice went out at Milford. Beginning the first week of April, the Milford flashboards began to go down a few at a time. Just after midnight April 9-10, the ice let go and the last of the Milford flashboards went down. At 1:30 p. m. the same day the new changer was started. After a 24 hour dryout, necessary tests were made preparatory to putting the unit into operation, and at 5 p. m., April 11, in the presence of Mr. Silliman and Mr. Dole, our Planning Engineer, Mr. Coffin pulled the button that put the new changer on the line. Since that time the new changer has been in continuous operation except for a short time the following Sunday, when adjustments were made to divide the load between the two units.

This year, for the first time in history, we have been able to keep the 25 cycle system up to normal frequency through the high water period, and keep it tied in with the 60 cycle system. In time past, it was customary to separate the two systems at Veazie, operating the changer on an isolated bus section with a limited number of generators, so that the changer would not be overloaded. The new unit was extremely welcome to the Eastern mill, where they are converting spruce trees, rags and kilowatt-hours into pulp and paper as fast as men and machines can do it.

In the group of pictures we show views of both the old and new frequency changers, also views of the 60 cycle machine partially rewound and a group of the crew that did the job. The individual snapshots show Costello, the General Electric man who rebuilt the machine; Coffin, who was responsible for specifying and ordering of material and preparation of plans; Brown and Webster, who personally supervised the installation of the equipment.

Water Heater Campaign Starts

At an enthusiastic Salesmen-Managers' meeting held July 29th a new Sepco Water Heater was introduced and a merchandise plan outlined which promises to be a real boost in our load-building activities.

A new rate is about to be announced covering this class of service.

Refrigerator Campaign Ends With Machias the Winner

The annual refrigerator campaign conducted by the Merchandise Department ended on July 27th with the following results by stores:

	Total
Machias	8
Harrington	7
Bar Harbor	21
Eastport	6
Bangor	37
Lincoln	7
Ellsworth	13
Old Town	10
Millinocket	6
	115

The Salesmen's results were as follows:

Reynolds	15
Warren	8
Woodcock	8
Parkhurst	7
Bean	6
Haskell	5
Carter	5
Murray	4
Jordan	3
Curtis	2
Honey	1
	64

By heading the list of stores, Mr. Vose and his Machias store have gained first leg on the President's Cup and with it a \$45 pool, \$40 of which was very generously contributed by Mr. Vose and his fellow Managers.

The Company as a whole did a very good job in the campaign, and all of those stores making their quota should be proud of the accomplishment and call it a good job well done.

It Is Not Always Easy

- To apologize.
- To begin over.
- To admit error.
- To be unselfish.
- To take advice.
- To keep trying.
- To be charitable.
- To be considerate.
- To profit by mistakes.
- To forgive and forget.
- To think and then act.
- To shoulder a deserved blame.

BUT IT ALWAYS PAYS—to send in some NEWS for YOUR News Paper.



Bar Harbor Items

Mr. Frank Silliman, 3rd Vice President, was a recent caller at the Bar Harbor office.

Among the business floats entered in the Fourth of July parade was the large truck decorated in red, white and blue, and featuring the General Electric Refrigerator.

Mr. Raymond Dugas has taken a position as operator at the Bar Harbor Substation.

Mr. Hall C. Dearborn led a detachment of Boy Scouts in the Fourth of July parade in Bar Harbor.

Electricity Defined?

At last a satisfactory (?) definition for electricity has been found by the New York State Committee on Public Utility Information. Its Utility Bulletin says:

Electricity is something that starts the Lord knows where and ends in the same place. It is 1-36 of a second faster on its feet than its nearest competitor, backyard gossip, and when turned loose in Europe will get to the United States five hours before it starts. Nobody knows exactly what it is because it has never stood still long enough.

Electricity is sometimes known as science gone crazy with the heat, and if you can understand its manœuvres, you can do anything with it except open a can of peanut butter at a picnic.

Electricity was locked up in ignorance for centuries until Ben Franklin let it out with a pass key, and since then it has been pulling off more new stunts than a pet monkey.

With it you can start a conversation or stop one permanently, cook dinner, curl your hair, press your trousers, blow up a battleship, run an automobile or signal Mars, and many more things are being invented.

Not in the Book

A lineman with a broken leg was taken to a hospital for treatment. After the leg had been set, the nurse asked him how the accident occurred. He replied:

"You see, ma'am, it was this way: I was stringing for the company and I only had one ground mole. He sent up a big come-along and she was a heavy one. I was pullin' on her and yelled to the mole to give the guy a wrap; instead he threw a sag into her, and that broke my leg."

"Yes", the nurse replied, "but I don't exactly understand."

"Neither do I," said the lineman. "The darn fool must have been crazy."

When You Know a Fellow

When you get to know a fellow, know his joys and know his cares,

When you've come to understand him and the burdens that he bears,

When you've learned the fight he's making and the troubles in his way,

Then you find that he is different than you thought him yesterday.

You find his faults are trivial and there's not so much to blame

In the fellow that you jeered at when you only knew his name.

You are quick to see the blemish in the distant neighbor's style,

You can point to all his errors and may sneer at him the while,

And your prejudices fatten and your hates more violent grow

As you talk about the failures of the man you do not know;

But when drawn a little closer, and your hands and shoulders touch,

You find the traits you hated really don't amount to much.

When next you start in sneering and your phrases turn to blame,

Know more of him you censure than his business and his name;

For it's likely that acquaintance would your prejudice dispel

And you'd really come to like him if you knew him very well.

When you get to know a fellow and you understand his way,

Then his faults won't really matter, for you'll find a lot to praise.

When you get to know a fellow, know his every mood and whim,

It's then you begin to admire the splendid side of him;

You begin to understand him, and you cease to scoff and sneer,

For with thorough understanding prejudices disappear.

You begin to find his virtues and his faults soon cease to tell,

For you seldom hate a fellow when you know him very well.

—Selected.

Milford Station

Milford Station is operating under very favorable conditions at the present time. The flashboards on both dams are 100% in position and every unit working day and night trying to satisfy the system operators.

Operator Mayhew who underwent an operation at the E. M. G. hospital a few days ago is reported well on the road to recovery. His friends at Milford are hoping that he will soon be back in his old place on the board.

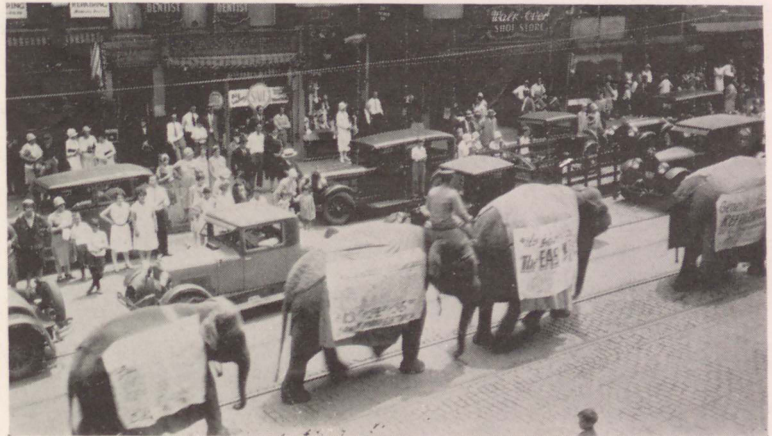
Operator Randall returned from a week-end fishing trip to his favorite stream in Macwahoc with his basket full of speckled trout, backing up his claim that there are yet plenty of fish to be taken from the Penobscot waters, always provided that the right party is on the big end of the rod.

Mr. Brown and Mr. Webster called at Milford Station one day this week.

Al Sawyer, our machinist and right (and left) hand man, who claims to be something of a deep sea fisherman made another trip to the coast Sunday. Al says in confidence that he don't seem to get the kick out of dragging in the big ones that he did in his young days.

No lumber has been driven through the Milford sluice so far this year.

Novel Advertising In Bangor



A recent Circus Parade in Bangor was the means of advertising our general appliance line.

Lincoln Division News

Mr. Harold W. Coffin, Mr. E. W. Brown, and Mr. Earl R. Webster of the Engineering Department were recent callers at this office.

Mr. R. N. Haskell, Vice President; Mr. Hall C. Dearborn, Real Estate Manager, and Mr. Herbert Hammons, Commercial Engineer, were callers at this office recently.

Mr. Alton C. Grant and James Gamble of the electrical crew have been filtering the 660 volt transformers at the Lincoln Sub-station.

Mr. George Libby, Sales Manager of the Wetmore-Savage Company, new branch store, Bangor, and Mr. Frank H. Burt of the Motor Dept., made a call at this office a few days ago.

Mr. Albert Nason has been in this district testing for radio trouble for the past few days.

Mr. Herbert V. Haskell, Salesman for this district, spent the week-end in Washington County with relatives.

Mr. James Gamble of the electrical crew, while on his way from Millinocket to Bangor, rendered first aid to a passing tourist, who was in an accident and was badly cut by flying glass. Mr. Gamble then rushed the man to Lincoln where he received medical treatment.

The Lincoln line crew are making a joint five-pole extension on Wilson street. This will be an addition of two new residence services and one street light.

Veterans' Service List

We give below a list of those whose service anniversaries come during the period from July 15th to August 15th:

	Years
Johnson, Charles H., Supt. of Transportation, July 29, 1895.....	34
Chandler, Sumner G., Car Operator, August 1, 1905.....	24
Reed, Walter, Riverman, Milford, August 12, 1913.....	16
Clark, Frederick T., Asst. Field Engineer, Bangor, August 1, 1916...	13
Dunn, Albert H., Operator, Milford, July 31, 1918.....	11
Thomas, Ruth E., Clerk, Bangor, July 19, 1920.....	9
Webster, Guy A., Car Operator, August 3, 1920.....	9
Holyoke, Mildred E., Stenographer, Bangor, August 11, 1921.....	8
Mitchell, Winfield C., Substation Operator, East Corinth, Aug. 10, 1921	8
Spear, Effie L., Stenographer, Bangor, August 14, 1922.....	7
Moor, Harvard E., Assistant Field Engineer, August 7, 1922.....	7
Mason, Fred Leroy, Car Operator, August 1, 1923.....	7
O'Connor, Ella R., Bookkeeper, Old Town, August 14, 1923.....	6



Let Us Demonstrate These Fourteen Superiorities

- ... an hermetically sealed, dust-proof mechanism.
- ... a simple freezing regulator.
- ... a mechanism that requires no oiling.
- ... all troublesome machinery eliminated.
- ... a new standard of quiet operation.
- ... mounted on legs with broom-room underneath.
- ... no installation problem whatever.
- ... a sanitary, porcelain chilling chamber.
- ... the entire mechanism mounted on top.
- ... maximum food storage space in the cabinet.
- ... an appreciably lower cost of operation.
- ... a radically improved type of cabinet.
- ... absolutely no radio interference.
- ... an unqualified two-year guarantee.

*Tune in on the General Electric Hour broadcast every Saturday evening
8 to 9 Eastern Standard Time over the N. B. C. network of 42 stations.*

GENERAL ELECTRIC

ALL-STEEL REFRIGERATOR

EVERY DETAIL *of its design* makes for **EASIEST CLEANING**

SPOTLESS, gleaming white—the General Electric Refrigerator looks its part—guardian of the family food . . . and the family health. And, because of its special design, it is as sanitary and clean as it looks.

All the inside corners of the cabinet are rounded. You know how easy that makes cleaning. No spilled food can hide in corners or seep into crevices. A damp cloth leaves the whole lining of the cabinet absolutely spotless. And the chilling chamber is so designed that you can easily clean all around it. Housewives who pride themselves on being “fussy” have commented favorably on this fact. And they like having the cabinet up on legs, for that gives them plenty of broom-room underneath.

Because the entire mechanism of the General Electric is hermetically sealed in a steel casing, it is dust-proof and safe from the difficulties which dust can so easily cause.

You should examine this most modern of all refrigerators—study the new *all-steel* cabinet, the many improvements. As evidence of guaranteed reliability, *there are more than 300,000 users and not one has spent a single dollar for repairs!* And find out about the conveniently spaced payments on which any of the models can be bought

Bangor Hydro-Electric Company at all of our Stores