

FIFTEEN MINUTES OF RADIO EACH DAY

By Edward N. Davis

Formerly Technical Electrical Expert For U. S. Government

Lesson No. 212

POINTS TO REMEMBER. (TRANSMITTING STATIONS)

REMEMBER THAT:

The most efficient working wave for a transmitting station is usually about seventy per cent. greater than the fundamental wave length of the antenna system.

A counterpoise is always preferable to other types of grounding arrangements, although frequently the more efficient stations have ground wires connected to all the surrounding pipes, wells, etc.

Always light the filament to normal brilliancy before the plate voltage is connected to the tube circuit, and in shutting down always disconnect the plate potential first.

The antenna ammeter will not read double when two tubes are operated in parallel, although the output may be more than doubled. The output varies as the square of the current.

When operating transmitting tube from a step down transformer, the best place to connect the controlling rheostat is in the primary circuit of the transformer rather than in the filament circuit itself.

The useful life of the tubes is often increased by using alternating current for filament lighting rather than direct current. Tubes last two or three times as long when A. C. is used.

When employing the Hartley transmitting circuit it is desirable to connect the earth connection to the filament terminal of the oscillation transformer, thereby producing more stable operation.

The life of tubes which are continually operated beyond their rated capacity is greatly curtailed and little added range is obtained.

In tuning a tube set a milliammeter should be employed in the plate circuit in order to prevent overloading of the tubes. The normal working plate current of most vacuum tubes is specified by the makers, and the life of the tube is shortened if this is exceeded. An output of seventy watts has been obtained from a five-watt tube in the laboratory, but the tube life was a matter of minutes.

Radiotelephony cannot be conducted on a tube set employing a transformer unless the output of the transformer is rectified before it is applied to the plate circuit of the vacuum tubes.

When employing tube transmitters it is important to have the antenna securely erected so that there is practically no swing to the wires. Slight changes in capacity caused by antenna conductors swaying in the wind results in changed wave length which in some types of circuits is very objectionable at the receiving station.

Glazed porcelain insulators are particularly effective in preventing leakage of the high voltages employed in vacuum tube transmitting sets.

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W. & R. January Sale

Winter Footwear

Final clearance of our Winter Lines offers Good Buys in Suitable and Dependable Footwear for crisp, frosty weather and snowy streets. These are just a few of particular interest—

MEN'S FELT BOOTS in all felt or with leather soles. Regular \$4.50 and \$5.50 values **\$2.80 and \$3.50** Selling at

MEN'S PLAID FELT AND KID BOUDOIR SLIPPERS—Now selling at **\$1.75**

WOMEN'S GAITERS in 10-button height, or boot tops. Only a few pairs left. Selling now at **50c**

WOMEN'S FELT OR KID BOUDOIR SLIPPERS in a variety of colors. Now offered at **95c**

SKATING BOOTS

Men's Speeders \$4.95
Men's Hockey \$3.85 and \$4.95
Boys' Speeders \$3.85
Boys' Hockey \$3.85
Women's Hockey \$3.95 and \$4.95

Reliable Footwear at Fair Prices

WATERBURY & RISING, Ltd.

61 King St. - 212 Union St. - 677 Main St.

Canada has a total of 3,729,668 square miles. The first English House of Commons met in 1295.
There are 2,474,881 square miles in Australia. The population of India is 819,075,312.

RECENT DEATHS

Miss Sarah A. Burns

The death of Miss Sarah A. Burns occurred on Saturday at the home of her nephew, Herbert N. Hamilton, 178 Wentworth street. She is survived by one sister. The funeral was held this afternoon at 2:30 o'clock from the residence of her nephew, 178 Wentworth street.

Mrs. Letitia Cunningham

The death of Mrs. Letitia Cunningham, wife of the late Robert Cunningham, occurred at her residence, 64 Adelaide street, at an early hour on Saturday morning, after an illness lasting some weeks, leaving two sons, Fred W. Cunningham and Robert I. Cunningham, both of this city; one daughter, Mrs. R. P. Hackett, Edmonton, Alberta, and one sister, Mrs. S. Dixon, of Massachusetts. Many friends will sympathize with the family in their bereavement. The funeral will take place at 2 o'clock this afternoon from 64 Adelaide street.

Nehemiah Nice

Nehemiah Nice died suddenly about 6 o'clock yesterday afternoon while walking from the dining room to the kitchen in his home at 24 Middle street, w. e. Mr. Nice had just finished his dinner and rose from the table to go to the kitchen, when his wife noticed him fall to his knees. She rushed to his aid but found that Mr. Nice had expired. Dr. F. L. Kenney was summoned immediately but nothing could be done, as death had been instantaneous. He had been in poor health for about a week but his condition had not been regarded as serious, and his death came as a great shock to his relatives and friends. Mr. Nice was fifty-one years of age and was employed as a horseman. He leaves his wife, one son, George; two brothers, Frank and Charles; two sisters, Mrs. Jennie Patterson and Mrs. Frederick Cunningham, all of West St. John.

Helen H. Robertson

Many friends of Mr. and Mrs. E. Roy Robertson, 238 Douglas avenue, will sympathize with them in the death of their five-year-old daughter, Helen Hetherington, yesterday at the General Public Hospital. The funeral will be held tomorrow from the home of her parents.

Miss Elizabeth McGrattan

The death of Miss Elizabeth McGrattan of St. George, occurred on Thursday. She leaves her parents, one sister, Mrs. Joseph Murray of St. John, and five brothers.

FUNERALS

The funeral of R. H. Arnold took place Saturday afternoon from Trinity church, where Rev. Canon Armstrong conducted service at 2:30 o'clock. There was a large attendance at the funeral and the Masons were in charge at the grave. Interment was in Fernhill cemetery.

The burial of Francis J. Murphy took place yesterday afternoon. Rev. Mr. Dowling was the officiating clergyman and the funeral was attended by members of the I. O. F. Interment was in Fernhill cemetery.

The funeral of George Jones was conducted yesterday from his former residence, Pond street, to Cedar Hill cemetery. Rev. Mr. McKim attended the funeral.

The burial of William J. Miller took place yesterday in the Catholic cemetery. The body was taken from Sydney street to St. John the Baptist church, where service was conducted by Rev. J. J. McDermott.

The body of John C. Cameron was taken to Sheba on Saturday on the 7:10 o'clock train for interment in the family lot there.

FORTY NEW AUTOS IN MONTREAL FIRE

Venetian Gardens Dance Hall Also is Badly Damaged.

Montreal, Jan. 22.—A woman was carried to safety from the third storey, more than forty new automobiles were damaged, and loss estimated by the manager at \$30,000 was caused to the Venetian Gardens, a dance hall, when fire broke out yesterday in the basement of the Durant Motor Car Company in St. Catherine street west. The floor of the dance hall was badly damaged by water.

An Unusually Fine Display of Handsome Oriental Rugs

Values Are Absolutely the Best We Have Been Able to Offer in Nearly Fifteen Years

This is your best opportunity to begin a collection, or to add another beautiful piece to the collection you already have.

The fire in Smyrna and recent war disturbances in the East have been the means of greatly diminishing available supplies of these famous rugs; consequently, prices have taken a decided advance.

Our carpet buyer was fortunate enough to have advantageously purchased this supply before these disturbances took place. This is the reason we are able to offer them at such attractive values.

In the assortments are room sizes, hall runners, hearth rugs, etc. Dozens of Rugs in this collection priced—

\$30 to \$70

One particularly beautiful Chinese rug has ground of rich Pekin blue with contrasting border of light corn shade. It is wonderfully thick piled and a genuine work of art. Suitable for living room, library, dining room or drawing room. Size 11 ft. 7 in. x 9 ft. 2 in.

Price is only **\$450.00**

Hearth Rug to match; very suitable for bay-window. Size 6 ft. 11 in. x 4 ft. 3 in.

\$135.00

A Fine Variety of Hall Runners

The most comprehensive assortment we have ever been able to show. Values are remarkable—as these prices will tell:

Mossoul Runner, size 3 ft. 6 in. x 9 ft. **\$95.00**

Badjar Runner, size 3 ft. 5 in. x 11 ft. **\$110.00**

Mossoul Runner, size 3 ft. 3 in. x 10 ft. 5 in. **\$110.00**

Kazadja Runner, size 3 ft. 5 in. x 12 ft. 2 in. **\$200.00**

Kazadja Runner, size 3 ft. x 13 ft. 7 in. **\$200.00**

Kazadja Runner, size 3 ft. 7 in. x 11 ft. 2 in. **\$240.00**

Badjar Runner, size 3 ft. x 15 ft. 10 in. **\$250.00**

Out of Town Patrons Please Notice:

These Rugs have been shipped to us direct from the Orient. It will be well worth your while to see this display and make contemplated purchases from this exceedingly attractive assemblage.

The inspection of connoisseurs is invited.

For lustre, wondrous beauty, long wearing quality, intricacy of pattern and rich color blending, Oriental Rugs are unequalled. Display will be arranged in Carpet department.

Germain Street Entrance—Ground Floor.

Manchester Robertson Allison Limited

Sale of Bed Spreads in Living Room. This is the third big bargain event in connection with our Free Hemming Sale.

Stores open 9 a.m.; close 6 p.m. During winter months.

January Sale of Men's and Boys' Winter Furnishings

NOW GOING ON

THIS IS A BUY NOW OCCASION

You'll not be satisfied with making "just enough" furnishings do when you realize how much your money will do in this sale.

NOTICE THESE REMARKABLE VALUES:

MEN'S COLORED SHIRTS
A good variety of patterns and colors. Two bargain price groupings, \$1.29 and \$1.89 each
HALF HOSE—VERY LOW PRICED
Heavy ribbed black wool. only 25c. pair
Black or grey worsted, English make, only 40c. pair
Heavy ribbed wool, in black, grey and leather, only 50c. pair
Colored Cashmere, plain or cloaked, only 60c. pair
Silk and wool ribbed, in new mixtures, . . . 89c. pair
Many other kinds at equally attractive prices
WINTER WEIGHT UNDERWEAR
Men's Fleece Lined Shirts and Drawers, reliable make and wonderful values. . . . 69c. garment
Heavy Ribbed Wool Shirts (samples), 75c., \$1.15, \$1.25 garment
Union Suits in Fleece Lined Merino or Heavy Ribbed Wool (samples), \$1.35, \$1.50, \$1.75 up to \$3.50 garment

BARGAINS IN NECKWEAR AND BRACES

An assortment of Silk Ties in favorite shapes and fashionable patterns and colors—

Your choice, 59c., 79c., 95c. each
Men's Wool Mufflers in the new plain knit with bordered ends; showing in dark heathers—

Sale \$1.50 each
Men's Fibre Silk Mufflers in dark colors Sale \$1.50 each
Men's French Style Braces—

Sale 35c. pair
Boys' Braces, odd lots.

Sale 10c., 15c., 25c. pair
Men's and Boys' Soft Collars, some slightly soiled—

Sale 29c. each, four for \$1.00

A FEW OF THE MANY BAGGAGE BARGAINS

Some pieces are slightly defaced.

Black Enamel Suit Cases. Sale \$6.50, \$7.50, \$8.25
Real Brown Leather Suit Cases. Sale \$10 and \$15
Black Walrus Handbags, leather lined. \$2.50
Heavy Black Cowhide Handbags, large shape. \$2.50
Best Brown Cowhide. Sale \$31

Steamer Trunks with heavy hard fibre covering. Two big values. \$18.50 and \$20
Wardrobe Steamer Trunks with the new heavy steel bound edges. Sale prices \$27.75

SALE OF ENGLISH MADE WOOL RUGS

Reversible Plaids with fringed ends; used for travelling, boating, camping, driving, etc. Every piece genuinely bargain priced. Sale \$2.75, \$4, \$5.75, \$7, \$7.50 and up

MEN'S JACKKNIVES and SHEEP LINED COATS At Big Reductions.

Men's Shops, 1st and 2nd Floors



Manchester Robertson Allison Limited

KING STREET - GERMAIN STREET - MARKET SQUARE

SCRIBES MODEST IN HOCKEY MATCH

A marvellous display of gymnastic was given on Saturday night on the ice of the St. John Arena after the regular skaters had departed to their well-earned rest and the "hockey" teams of the Telegraph-Times and Furness-Withy came forth from hiding to do battle. In spots it resembled a hockey game, but only in spots. Most of the players were seafarers from the graceful undulating motion of sinking to the ice and rising again. Fortunately all are living still.

The winners? Furness, Withy undoubtedly won the game. The score? Ah, that is a different matter. Einstein himself might have had trouble in deciding that mathematical problem.

Spectators, the referee and members of the opposing teams all had different visions. They made it anything from six to one to sixteen to one, but on one point they were positive, it was something to see, for the leader of the Telegraph and Times was the only one who could penetrate the stonewall defense offered by the skippers. After the surprise occasioned by McLeod's flying start had worn off, the newspaper men might better have shot at the Queen Elizabeth than at the Furness. Withy goal. Nothing could pass. As for the Telegraph and Times goal, suffice it is to say that the keeper of this was a better dodger than his contemporary at the far end. He was hit only once or twice and then the polite shipping men apologized profusely. When finally the time-keeper, exhausted and almost blind from watching the dizzy spectacle, managed to focus his gaze on the skippers of the respective teams called weakly for weak cheers and the players faded away. Yes, like old soldiers, they did not die, but simply faded away.

Withy hopes that the big league baseball scouts and the race track clockers

MRS. PANKHURST

(Moncton Times)
Previous to 1914 Mrs. Emmeline Pankhurst might fairly enough have been introduced to an American audience as the "English Suffragette Leader," the woman who, when all constitutional means had been denied the suffragettes of Great Britain, had again and again stormed the historic House of Commons at the head of an army of women demanding votes. This description of Mrs. Pankhurst even previous to August, 1914, would have been incomplete, to those who know her best. For many years before the suffragette agitation began Mrs. Pankhurst was a striking figure in the social and political life of her native city of Manchester.

In national politics, Mrs. Pankhurst was well known before she had passed her youth, her sympathies with the masses at first leading her to join the Labour Party on the executive board of which she served for several years. In her maturity Mrs. Pankhurst became a member of the Liberal Party, but always a critical member, preaching a practical democracy to which the majority of the voters of her party had never attained.

Emmeline Pankhurst has always been an unusual, a superior woman with a mind and a vision far beyond that of the common man or woman. But when the world war came, when Great Britain, in August 1914, threw in its lot with heroic Belgium and with valiant France, then Emmeline Pankhurst became a truly great woman, one of the leading statesmen of her country and her time.

Mrs. Pankhurst was in France when the war burst upon the world. She was resting there after a stormy period of imprisonment in Holloway jail, having for the twelfth time or more, endured the horrors of hunger and thirst strike against which the British authorities admitted themselves helpless. Yet, with the first gun fire of the war, Mrs. Pankhurst declared a truce all suffrage militancy, left her refuge in France, went back to London and offered her services to the Government.

With her daughter Christabel, whose long been inseparable, she began to study the vast problems of mobilizing industry in factories and on the soil, in order that the life of England, during the war, should go on with as little suffering as possible.

Great Britain, for all her peerless navy was almost as unprepared for war as the United States. She had a small army, insufficiently officered, a war office entirely surrounded with red tape, and industries controlled by labor unions in which a dangerous pacifist element was apparent. Mrs. Pankhurst sent her daughter Percival instantly that if an army was to be raised and maintained an army of women would have to be mobilized in industry. It was the Pankhursts who first persuaded Premier Lloyd George to establish training schools for women in munition works. It was they who first preached the gospel of a woman's land army and

DANIEL'S SECRET

Told on

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encouraged the thousands of "farmettes" who left their homes and made the soil of England produce more than it had before in centuries.

England had its labor troubles during the war, as all the world knows, and up and down the length of England and Wales went Mrs. Pankhurst and her daughter, fighting strikes, pitting their brains and eloquence against the futilities of labor agitators and German agents. How they broke the coal strike in Wales, how they helped to keep the munitions factories going at full speed during four desperate years cannot be told in brief.

And now the world war is over and the German menace is forever dead. At least so the superficially minded reason. Mrs. Pankhurst knows that the

war is not over, that democracy is not yet achieved, that the world is not yet safe for women and children and the home.

To miss what Emmeline Pankhurst has to say is to miss hearing one of the great speakers of the time, one of the few real orators living in the world. To call Mrs. Pankhurst an orator is by no means to describe her manner in speaking. She is not grandiloquent. She is gentle, appealing, logical, and beyond words convincing. Hundreds who have gone out of curiosity to hear the "militant Mrs. Pankhurst" have been won to a life-long allegiance to her, not only as a great speaker, but as a woman, in the truest sense, fascinating and enthralling.

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DOWNPA BLANKETS
New designs—**\$3.50**
66x72 inches Pair

LADIES' FRENCH FLANNEL BLOUSES . . . 98c

HEAVY, DOUBLE-KNIT TURKISH TOWELLING . . . 22c Yard

CHILDREN'S WOOLEN FULL-OVER SWEATERS . . . 98c

All popular colors, with shoulder buttons.

MEN'S PULL-OVER WOOLEN SWEATERS \$1.50 All sizes

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Good Quality Jersey Cloth

LOW OVERSHOES

Shaped Like the Storm Rubber and Warm as the Overshoe

Priced to **\$1.35** Clear at

These with your gaiters will make a neat, serviceable and comfortable outfit, and will enable you to enjoy the championship races.

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