

to remember that a chain mortiser finishes a half-round on the bottom. This half-round is very useful as a recess for sediment. So if the container is 4½ in. deep the plate will need to be only 4 in. to allow ½ in. for the recess and ½ in. from the top.

Taps and Terminals.

The constructor can use his own discretion here as the precautions I am obliged to take in insulating and protecting taps and connections would be unnecessary for anyone who does not employ any more than 100 to 150 volts.

I have no doubt that the average listener-in who is accustomed to the neat little commercial B battery will term this one just described as a very bulky affair, quite overlooking the fact that it would require two 120-volt commercial batteries linked up in parallel to give the same capacity as the 120 volts assembled in a half-benzine case, the cost of which does not exceed 16s. If the constructor is at all resourceful he can turn this bulk to good account. I have one of these batteries turned into a stool with two very heavy A batteries standing on it.

Finally, who would not exchange his 90-volt amplifier for one of the 180-volt type when the additional 90-volt H.T. and 40-volt C battery can be had for a few shillings instead of a few sovereigns?

NEITHER time nor space will permit my touching on the technical side of this subject, but I cannot refrain from mentioning here that repeated experiments and comparisons have convinced me that there is a vast discrepancy between the normal rated voltage of some batteries and the actual voltage under load, and that there is a big relationship between the square area of the plate in the battery, and this voltage drop under load; and a starved amplifier plate with a maximum C battery on the grid is responsible for 98 per cent. of the distortion for which the transmitter is often blamed.

"N.Z. Radio Listeners Guide"—160 pages of valuable detailed reference matter—2/6 a copy at dealers, or 2/9 posted. P.O. Box 1032, Wellington.

A Unique Station

Newfoundland's Happy Position in Radio

A BROADCASTING station built, maintained, and operated by voluntary service! Such is Newfoundland's claim to distinction in the world of wireless.

Station SWMC, of St. John, gives a bi-weekly programme, comprising both educational and entertainment features, without a charge of any kind. This station is not a business or advertising proposition—it is the sole property of one little church, but so strongly do they regard their duty and debt to the community from all corners of which they have received support, that they in return give their service free to all.

A Unique History.

IN 1924 several old people of the Wesleyan Methodist Church were connected with the church by means of telephone wires, to enable them to hear the church service. Later the pastor thought that a small broadcasting apparatus would be cheaper for the listeners, and would serve a greater number of aged and ailing people. After inquiry as to cost, the project was deferred.

Suddenly hopes were raised by a Canadian company, which, through interest in radio broadcasting in Newfoundland, offered a set at a price which, although beyond the immediate purchasing power of the church, was so tempting that the offer was accepted.

In July, 1924, the first broadcast of a religious service in Newfoundland was carried out by means of an apparatus owned by, and situated in, Wesley Church.

Labour was freely given by Catholics and Protestants, and when established subscriptions came in from men of all creeds. The church Scout troop under-

took the making and installation of crystal receiving sets at unbelievably low prices. So the old and feeble ones were helped and service given quietly and unostentatiously to an ever-increasing radio audience.

A Larger Output.

THEN there came demands from would-be listeners scattered afar, who wished to bring in the services. The optimistic pastor, desiring to satisfy these demands, spent his vacation in Canadian work hops, studying the larger and more modern transmitters. Finally a 500-watt machine, capable of reaching all Newfoundland, was installed.

Support was readily given. Gifts and entertainment organisations, anything that could be turned into money, were utilised, while people asked for "radio boxes" to collect small sums. With the intrepid pastor as manager, and this spirit of co-operation, the venture was assured financial success.

To-day societies contribute unasked to station SWMC, fraternal organisa-

tions arrange to place a receiving set in the home of any sick brother, sealing skippers stop their ships during the church service, and men of all sects gather round the loudspeaker; lonely lighthouse-keepers wrote gratefully of benefits received.

Organ recitals are a feature, and it has become necessary to replace the forty-six-year-old organ by a new one. Request items are promised for the next two months.

Present Organisation.

Now station SWMC broadcasts a church service every Sunday evening, while in the morning the apparatus is at the disposal of any church in the city, and during the summer months a morning service is transmitted every Sunday. Twice a week a programme is arranged by a voluntary committee. An hotel has set aside a large room as a studio, and the local telephone company makes a special connection between the studio and the radio room as its contribution.

WIRE facilities may be provided between Riverhead and the National Broadcasting Company's control room in its own building on Fifth Avenue, in New York City, so that the intercepted signals may be fed into as many transmitters as may be joined in a network.

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