The New Year's Radio

(Continued from page 1.)

different from the studio presentation or the record. It consists of a device whereby the upper frequencies, those are the things notes of music are made up of, can be cut off. The music is then dull and heavy, with plenty of bass, and without sparkle or interest. "But," I can hear someone asking, "why do the manufacturers put these things on if they only introduce distortion?" For the simple reason that they are asked for, and more than that, are demanded. Someone tried a tone control last year, and the public found that when turned to the bass much of the noise that would otherwise come through the set did not. And so tone controls had to be added by other manufacturers in order to sell their radios. Now many of the sets are coming out with tone controls, while others are coming without them. Like as many other devices, they are excellent if properly used, they can eliminate a great deal of static and power noise, and provide passable reproduction.

Another important advance of the season which is not in the design of the set, but will meet with universal approval, is the American idea of "keeping the set sold." This turned into English means that manufacturers provide means of having experienced technicians to look after the sets and keep them in order once they are installed. This is a very big forward move which all listeners will appreciate. When a set is sold a card is sent by the purchaser to the manufacturer, or, in our case, to his agent, and when the necessity occurs another card from the consumer will bring along the service man.

This, I think, is one of the greatest advances radio has made for a long time. We have constantly advocated some such system, especially for country listeners who have no means of keeping their sets in order and who are more dependent upon them than are any other listeners.

It appears that this system has been in operation in at least U.S.A. for some considerable time, and has had a start here, but it has, with a few exceptions, not been very fully developed.

The Battery Set.

OVERSEAS manufacturers are beginning to realise that there is still a market for the battery set, and that, like the electric set, must be kept sold. Many firms are consequently manufacturing complete lines of receivers from the battery set right up to the a.c. superheterodyne. Some of these are finding their way out to New Zealand. Naturally they will not be inexpensive, for their design has meant considerable research on the part of the factory engineers, in some cases more so than the electric sets, as there are certain economies that must be observed. The screen-grid valve will be used with probably the new two-volt American valves, but there is a market in this country for a specially designed battery set. The valves are already here. It remains for some enterprising local manufacturer to design such a set and market it. Of course one might already be in existence, but I haven't heard of it, and I know the market fairly well. Some good ones were manufactured a year or so back, but these manufacturers seem to have all gone "a.c." and the country listener has either to use an old model or one of the American ones that are fairly heavy on batteries. Generally speaking, the outbacks people do not want old models at £5 or less—they want a modern set, and are prepared to pay for it.

Imperfect Reproduction

Great Public Danger

IN the course of an article on "Quality Reception" in the "Wireless World," Mr. John Harmon makes this interesting comment: ". . . We may say that unimpaired reproduction (of music) from 50 to 5000 cycles per second gives excellent, well-nigh perfect results. As the upper limit recedes to 4000, treble notes become thin and colourless, like boys' voices accompanied by flutes. As the lower limit rises to 200, low notes, though still of considerable intensity, are, strangely altered, emasculated and reedy. It is estimated that half the wireless sets in use today transmit only between 250 and 3500; their owners are probably satisfied with this performance once their ears have become accustomed to it.

"Therein lies a great public danger. Since speech and music tend increasingly to reach our ears by mechanical channels rather than directly, there is a prospect that toleration of imperfect reproduction may lead to decay in the standard of pronunciation, and lack of appreciation of musical quality. If any reader doubts this statement, let him reckon up the number of minutes each day during which he hears speech and music directly and free from a noisy background, and compare it with the period spent in listening to the telephone, loud-speaker, gramophone, and talkies."

A Giant Valve

For New American Transmitter

OF the innovations introduced into the new transmitting station of KDKA, which is being built near Saxonburg, Philadelphia, is the new 200-kilowatt valve, a photograph of which appears on page 1. This valve is not merely an enlarged edition of a smaller one, but is thoroughly engineered as a valve of larger size and of a distinctly novel design. The new valve, called the AW220, is 72 inches in height, has a diameter of eight inches, and weighs 60 pounds.

In its design engineers found one of their greatest problems to be that of cooling the grid. An idea of the problem which was eventually overcome may be obtained from the statement that approximately five tons of cooling water must be passed through the water jacket each hour it is in operation. This water cools the valve in the same manner as water in a motor-car cools the motor. One hour's operation of the valve would heat enough water to supply the domestic requirements of the average home for several weeks.

While AW-220 valves will only be used to generate high frequency power for radio stations, an appreciation of the power capacity of one of these valves can perhaps best be gained by a comparison with familiar household devices. For example, a similar amount of power of the kind distributed commercially would operate simultaneously four hundred toasters or flat irons. This would also be the equivalent of power required to light one thousand average homes of five to six rooms, or the energy to operate two modern street cars.

Honouring the Dead

RECENTLY an American Legion ceremony was held in Washington, and in order to secure "atmosphere" it was arranged that bugle calls were to be blown at a certain time before the tomb of the Unknown Soldier in Paris. The bugle calls were transmitted by short-wave across the Atlantic, picked up, and relayed all over the States as part of the ceremony.

Faraday's Diary

To be Published Shortly

AMONG the treasures of the learned societies of London none is is more remarkable than the Diary of Faraday, which the Royal Institution has had in its keeping for sixty years. It is a most interesting record, not only of the great scientist's experiments, but of his opinions on all manner of things, including love, which he regarded (before his marriage) as "a nuisance to everybody but the parties concerned."

Extracts from the diaries have been known, but now the Royal Institution is preparing to publish them in full in about eight volumes. The first two or three will be ready for the celebration in September next year of Faraday's famous discovery on August 29, 1831, in the laboratory in Albemarle Street (where his apparatus is still preserved), of electro-magnetic induction.

"No other experiment in physical science," says the Royal Institution in announcing the celebration, "has been more fruitful in benefit for mankind." When Faraday made his simple experiment with two coils of wire wound on opposite sides of an iron ring he hit upon a secret which was the beginning of all that has been done since in the utilisation of electricity for power and light."

The centenary celebrations will bring to London electrical engineers and delegates of scientific bodies from all over the world. The British Association, which meets next year, is timing its meeting to coincide with the Faraday celebrations.

Topical Notes

(By "Switch.")

BEGINNERS usually have little regard for the efficiency of their "earth," so long as they have a satisfactory aerial. The former is as important as the latter. "Switch" found it necessary recently to explain the position to a Wellington listener who had lately purchased a rather elaborate all-electric receiving set, which, obviously, was not "pulling its weight." His earth wire was fastened to a piece of galvanised pipe driven into very dry clay. The pipe was moved a few feet to a garden bed with deep black soil, and after a couple of buckets of water had been poured around the pipe reception volume was nearly double.

"TEN O'CLOCK" (Pahiatua) writes to "Switch" expressing appreciation of the fine selection of gramophone items put on the air by 2YA, Wellington. He says: "I am omnivorous in my taste for music, and I like the pack well shuffled. Classical music, in homeopathic doses, is always acceptable to many folk, and so long as jazz is tuneful I can find pleasure in listening to it. The electrically-recorded gramophone items have changed the public attitude toward the broadcasting of records, and, like many others, I prefer the records to the living performers."