

Einstein in Retrospective Mood



RADIO listeners should be ashamed to make use of the wonders of science embodied in a radio set while they appreciate them "as little as a cow appreciates the botanic marvels in the plants she munches." So

spoke Professor Albert Einstein in expressing his regrets concerning public apathy toward scientists, at the opening of the Berlin Radio Exposition.

It was back in 1921 and 1922 that the listeners really paused to give thought to the new scientific wonder heralded as radio. Broadcasting was called a "craze" then, but its magic attracted and inspired hundreds of thousands throughout the world to learn more about it. Radio was new to the public. It was complicated. Books and pamphlets were hurriedly written to meet an urgent demand. Hundreds and hundreds of copies were sold. Thousands sought wiring diagrams and instructions for building receivers. They wanted to know more about the wonders of radio. There were no factory-built sets.

The young Marconis were busy at their attic and cellar work-benches trying to meet the neighbourhood demand for a crystal set that would pick up music from KDKA, WJZ and other pioneer broadcasters. The early sets were complicated contraptions.

It required an expert to operate the first valve set. Their panels were decorated with multiple switches and knobs. Radio listening was a complex science. Tuning was an art. To pick up Davenport or Chicago in New York was a real scientific triumph. It was real sport, too—commuters on the morning train compared notes as to what they had heard during the night. And in order to surpass his neighbour's record each had to "read up" on radio. He had to know what it was all about so he could build a more sensitive set, one that would tune sharper and cut through interference—one that might reach the coast!

But the situation changed. Factory-made sets competed with the home-made outfits. They were simplified and built foolproof. They were made all-electric. It became necessary only to snap a switch and to turn one small knob instead of four or five dials. Radio in the home became as simple as the telephone; as easy to use as the electric light. A child could tune in and travel over the air waves from city to city.

It was not necessary, after 1926, to be an expert technician in order to own a radio. So the public ceased to learn about what was inside the cabinet or of the marvels that brought the music across the horizon. They dropped their interest in electrons, regeneration, harmonics, oscillations, kilocycles, inductance, audio frequencies, and electricity. The radio chassis now ranks with other machinery and mechanism of the automobile. When something happens to the motor-car the owner usually calls upon the garage. When something happens to the radio the service man is summoned.

Distance Was a Lure.

AND in the pioneer days listeners found great joy in tuning for distance, DX as they called it. To-day the

Sees Public Rapidly Forgetting the Marvels that have Brought Radio to Perfection

majority prefer four or five local stations and are entirely satisfied if they get them with good tonal quality, plenty of volume and no interference. Tone is the thing. Beauty of cabinet is another ruling factor.

Seldom does anything go radically wrong with the modern set. So the owner does not have to know much about about it. The usual ill is caused by a valve wearing out, but even the valves give many hours of service nowadays before they blink or burn out.

What the radio set owner of 1930 is interested in first and foremost is what he hears. The programmes are para-

mount. The broadcasts rule radio. If the broadcast is entertaining and of clear tone then the set owner is satisfied. He does not care what is going on under the cover of the cabinet or in the emptiness of space. If he happens to tune around and accidentally hears Louisville, Atlanta, or Los Angeles, he merely considers it an ordinary thing in the realm of radio. Whereas ten years ago if a New Yorker, for instance, picked up a far-away station he would call all the family and the neighbours to rush to the headphones or loudspeaker to hear one of the wonders of the age.

The radio listener of 1930 is blasé. He snaps the electric switch, turns the tuning control of the uni-dial receiver and sits back to hear what is going on in radio's world-wide theatre. If he does not like it he tunes it out with one simple twist of the wrist. If there is any slight interruption or strange noise he calls it static. He puts the blame on nature. If anything goes wrong he may take the risk of shifting the valves in the sockets, but usually he is a trifle timid about tinkering with the circuit and its magic parts. He would rather leave that to the service man. He would not fool with his electric icebox, vacuum cleaner, electric light line, gramophone, or motor-car, so why tackle the radio when he knows nothing about it? He calls in the radio doctor—the technician with the tool kit and testing meters.

The Set is Foolproof.

THE coils and condensers, transformers, and wires were exposed in the early receivers, so that it was easy for the set owner to lift up the cabinet lid, glance in, and juggle anything that looked out of order or out of place. But today the parts are protected and hidden in metal cans and compartments, so that Mr. Listener has no lurking invitation to go after the set with a screw-driver or pair of pincers. The radio instrument of to-day is foolproof. It calls for one who understands it to operate on the delicate parts should some ill develop.

So Professor Einstein has the right picture of the 1930 radio listener. The listener merely tunes in, and on many occasions continues to read or talk while the loudspeaker plays or talks on in a vain effort to attract attention. 'Tis true that as the cow munches the hay, the clover, and the grass, so the radio listener listens with little appreciation of "the God-given curiosity of the toiling experimenter and the constructive fantasy of the technical inventor," as Professor Einstein remarked.

186,000 Miles in a Second.

HOW many of the millions in the radio audience ever pause to think that the radio music is reaching them at the speed of sunlight, 186,000 miles in a second! That millions of tiny specks of electricity called electrons are jumping around inside their valves in an effort to assist in the entertainment; that the ether or whatever it may be occupies all space; that while the listener is in tune with WEAf the music of hundreds of other stations, of WABO, WJZ, or WOR, is shooting through the walls of their homes, right through their own bodies in the twinkle of an eye with apparently no effect on the human system.

It has been calculated that the electrons leaving the filament of a valve leap at the rate of approximately 50,000 miles in a second. To-day this is of little interest to the radio listener. He wants to hear entertainment, but he cares little or nothing about the antenna, the ground, or what purpose they serve in the life and performance of a radio set. The programme is what counts.

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