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The First Wireless CROS

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Telex introduced a wireless eyeglass in 1975 and it proved fairly successful. Followed by BTE models, it dominated the CROS market until the mid-90s, when Phonak bought the design after Telex exited the HA business.

The probable reason for the absence of competition, aside from our really clever design (ahem), was a 1964 Telex patent. This described a wireless link between a microphone in an eyeglass temple, and a receiver *in the ear on the same side*. The claimed benefit was elimination of a sound tube and possible mechanical feedback. The design was not successful and very few were sold.

The patent did not mention a microphone on the opposite side of the head, that is, the basic concept of a CROS. The idea had simply not occurred to anybody yet! It was described one year later, in 1965, by Hartford and Barry, and CROS and BiCROS became useful tools in the audiological armament.

Expanding the 1964 same-side concept to the opposite side of the head meant increasing the distance from about an inch to 6 inches, a big step, and it took us until 1975. The patent covered this design as well under the legal concept of “obvious to those skilled in the art.” It must have convinced the competition, anyway. The wireless link consisted of a transmitter coil operating at 225 kHz; the magnetic field of that coil was picked up by a receiver coil on the opposite side of the head. The principle is actually the same as the telecoil pickup invented by Lybarger. We picked the 225 kHz operating frequency because the only usage of it was by a nearly obsolete aircraft landing system. Our hope was that it would not cause interference with our aids, and indeed it did not.

Having a unique product gave us incentive to develop versions the market demanded, notably an ITE transmitter side; we never were able to make it small enough for the receiver side.

The U.S. Veteran's Administration was at that time headed by two PhD audiologists, Ellie Wintercorn and Lucille Beck. They were brilliant professionally as well as technically knowledgeable, and were quickly convinced of the benefits of our wireless system. VA became an enthusiastic customer of our instruments.

I had a memorable experience with that: a VA clinic contacted me with a request to modify an eyeglass CROS so the on-off switch could be activated by someone lacking both hands. The user was a soldier, who had lost his hands (and been blinded) by the premature explosion of a hand grenade. And, he wanted badly to have something that he could control on his own. Adding extensions to the switch handles was no problem, and I counted my blessings while working on that special task. The good relations with VA lasted until well after I retired in 1994.

Additional Reading

For more information on Harry Teder along with related details, figures, and more insight direct from the man himself, please visit: http://hearinghealthmatters.org/waynesworld/2012/audiologists-in-industry-wayne-staab-part-8/.