

QUARTZ CRYSTAL INDUSTRY IN CARLISLE, PENNSYLVANIA

By Harriet Fanus

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Fifty years ago, a half-a-century, the quartz industry had its beginning in Carlisle, Pennsylvania. Yes, I go back fifty years and I will tell you about the start of the crystal business in Carlisle, as I remember it.

Hopefully, there won't be too many omissions or commissions on my part, but fifty years is a long time.

Petrified wood from Arizona was the beginning of the crystal business in Carlisle. Cutting and polishing petrified wood for chess figures was one of my father's (Grover Hunt) hobbies while an Electrical Engineer at Dickinson College.

At this time, about 1931, a professor of physics at Dickinson, Dr. Parlin, and some of his students - Charlie Fagan, Ed Minnich and Howard Bair, decided they would try to make crystal units. These people, as well as, Hoke Franciscus, were ham radio operators and they thought they could use Grover's rock cutting equipment for preparing crystals for their ham rigs.

These quartz crystal units, used for frequency generation and selection, were fabricated and the next year, the first commercial crystal units were sold to other ham operators and radio stations.

As a child, I had the envious job of hand grinding these crystals to their proper dimensions. Many of my hours were lost doing this, as well as my fingerprints. Of course, our industry maintained some of the highest wage standards in the country at twenty cents per hour.

In 1935 another ham radio operator, Lin Gagne, from the Goodyear Company in Akron, Ohio, moved to Carlisle for the purpose of forming a partnership with Grover Hunt and together they founded Standard Piezo Company, This company was located at the corner of W. Louther and Cedar Streets.

The partnership dissolved the following year with Grover Hunt opening another crystal shop named G. C. Hunt and Sons, at the rear of my Grandparent Hoffman's home, located at 544 N. Hanover Street.

During this time, the planetary lap was developed at this shop with valuable assistance from two machinists - P. R. Hoffman and Dave Beam. This development removed the need for hand lapping the quartz crystals to frequency. This coupled with the development of the slurry saw, also by Grover Hunt, covered the essential processing equipment for crystal manufacturing.

The slurry saw and the planetary lap are still, today, the primary tools for blank fabrication.

All the quartz crystal operations in the Carlisle area are traceable to the small group associated with Hunt and Standard Piezo Company.

With the outbreak of World War II in Europe there was an ever-increasing demand for quartz crystals. New people entered the industry.

Luther McCoy came from Bendix Aviation in Baltimore and later founded McCoy Electronics. Herman Schall and Wally Samuelson later became co-owners of Standard Piezo Company.

The production of these quartz frequency control crystals rated the second highest military priority - second only to atomic energy. Crystal units were used in all military communications for our Armed Forces and our Allies.

During this time not only did new firms start, but the established firms expanded greatly. In my father's operation, there were 600 people working in three shifts to meet the demand.

To expedite the supply of crystal units for the war effort other crystal companies were formed. In addition to Hunt and Standard Piezo the P. R. Hoffman Company was founded in 1942 and in 1943 Carlisle Crystal started shipping crystals. These Carlisle companies produced over seven million (7,000,000) operating units during the war years.

After the war, in 1946, the Reeves-Hoffman Company was established. This company was formed by Mr. Reynold Hoffman and Mr. Hazzard of Reeves Sound Laboratories of New York City.

Some skilled crystal people in Carlisle were successful in influencing Reeves Sound to locate here. Their original location was above the Comerford Theater in Carlisle. In 1948 they moved to the building at the corner of North and Cherry streets. In 1960 Reeves-Hoffman became a division of the Dynamics Corporation of America. Reeves was one of the original developers of the crystals employed in quartz watches.

Since then, they have moved on to other demanding projects and are presently headed by Dan Kingery who is vice president and general manager of Reeves with Dave Line as product manager and Cliff Mercer as head of engineering.

Standard Piezo is now called Piezo Crystal and in 1952 moved from its location on E. Pomfret Street to its present location on "K" Street. It is now a subsidiary of Anchor Operating, Inc. with Chuck Jensik as president.

The P. R. Hoffman Company is now a subsidiary of Amstar Technical Products, and is managed by George Hoffman and Bob Birrell with Robert Travis as chief executive and the irreplaceable John Mountz heading domestic and international sales.

In 1951, Bert Hill began his company in a garage in New Kingstown. In 1957 he moved the company to Mechanicsburg. Hill Electronics was sold to Erie Frequency in 1968 and was moved to Carlisle and merged with the Hunt Corp. purchased at the same time by Erie Frequency. The crystal

operations of Erie Frequency was then sold to Murata in 1981. Murata is presently headed by Warren Hess with Don Peters as head of engineering and Dick Calaman as production manager.

In 1952 Luther McCoy founded McCoy Electronics after being Sales Manager for Piezo. He founded this company with Don Kutz in Mt. Holly Springs. Eleven years later the company merged with Oak Technology. Howard D. Hinnah is President and General Manager of McCoy Electronics.

The progression of this industry in Carlisle has been from individual ownership to affiliation with national firms. There are many reasons for this progression. One of the reasons was that the crystal people were not able to raise enough capital to finance the constant upgrading of expensive equipment and were not able to maintain active research and development for future business.

You hear the word "Frequency" pertaining to crystals. When an electrical voltage is applied to a crystal wafer, it will vibrate at a constant number of times per second. This is "Frequency." This property of quartz is very valuable because of its ability to stabilize frequencies for communications. The crystal is a small unit important and necessary for communications and the discoveries for the future markets in the foreseeable future is endless.

The most critical problem of the crystal industry was the shortage of electronic grade quartz imported from Brazil. Efforts were made to find a substitute for this raw material.

In 1958, through a government contract with Fort Monmouth, a Chemist at P. R. Hoffman, Warren J. Hunt, developed and improved the growth of synthetic or cultured quartz to where it was at least equivalent to natural quartz Warren resigned from P. R. Hoffman and formed his own quartz growing company on Route 11, Ritner Highway in 1965.

The company was eventually sold to its largest customer, Motorola Inc., in 1969.

Through all these years, we still have people working in the crystal industry for forty years. Helen Calaman of Erie Murata finished crystals with Lute McCoy for Hunt back in '42 along with Grace Renard of McCoy Electronics, who retired on March 31.

The Crystal Business contributed in many ways to the historic town of Carlisle and brought outstanding people to live in "Crystal Town USA."