

**Howard Tracy Hall (HTH) and Ida-Rose Langford Hall (IRLH)**

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*Howard Tracy Hall* (born October 20, 1919 in Ogden, Utah) signs his name as H. Tracy Hall and goes by "Tracy"

*Ida-Rose Langford Hall* (born February 20, 1921 in Ogden, Utah) signs her name as Ida-Rose L. Hall. Her compound first name comes from the given names of her two grandmothers.

Tracy has a Ph. D. in chemistry and physics from the University of Utah (1948). In addition to his chemistry-physics training he had two years of schooling in electronics at Bowdoin College, MIT, and Harvard while serving as a U.S. Naval Officer in World War II.

At age 59, Tracy studied patent law for a year and passed the patent bar exam in June of 1980, becoming Patent Agent No. 29, 800.

Post Ph.D. study led Tracy to employment at the General Electric Research Laboratory in Schenectady New York in October of 1948. He left GE in August of 1955 to become Director of Research and Creative Effort and Professor of Chemistry at Brigham Young University. Tracy retired from BYU as Distinguished Professor of Chemistry and Chemical Engineering in 1981. After retirement, HTH and IRLH served a mission for the LDS Church in Zimbabwe and South Africa among the black people in those nations.

Tracy is the "Father" of High Pressure/High Temperature technology and is recognized world-wide for his inventions of machines that can transform ordinary graphite into diamond. At least twenty five billion dollars worth of industrial diamond has been produced by means of his inventions. Unfortunately, General Electric (which owned his inventions by reason of his employment contract) did not allow him any share whatever in monetary rewards!

After leaving GE, Tracy invented new devices and methods for manufacturing diamonds. However his improved machines and processes were slow in being accepted and he was cut-off by the 17 year provision that turns one's patent into public property.

General Electric and De Beers, the world's leading producers of diamond, use Tracy's "Belt" Apparatus exclusively. One of his later inventions, called "The Cubic Press" was adopted by the Japanese and Chinese. There are over 700 cubic presses in China manufacturing diamond. General Electric uses about 200 Belt machines and De Beers uses about the same. The investment in his machines for the world-wide manufacture of diamond is about one billion dollars.

Ida-Rose, a traditional mother and wife, generously encouraged and supported Tracy and bore the major work of raising and training the children. Her labors, in this regard, produced seven, talented, responsible, productive children.

In her own right she has become a first-rate genealogist and family historian. Her exhaustive research on the Langford family resulted in the 334 page book, "The Progenitors and Descendants of Fielding Langford", a much appreciated family treasure.