

80 Greenridge Avenue
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POPULAR SCIENCE
380 Madison Avenue
New York, New York 10017

Gentlemen:

I was extremely disappointed in the lack of basic research evidenced in Joan Steen Wilentz' article: "The Strange World of Superpressure."

You should be aware that in 1972 the American Chemical Society presented Dr. H. Tracy Hall of Provo, Utah with their award for Creative Invention "for being the first (their underline) to discover a reproducible reaction system for making synthetic diamonds from graphite, and for the concept and design of a super high pressure apparatus which not only made the synthesis possible, but brought about a whole new era of high pressure research."

The earliest G. E. patent on diamond synthesis is #2947608 and is in Dr. Hall's name only. The belt patent also is in Tracy Hall's name alone. The G. E. "belt" which produced the first man-made diamond was not invented by the "team" listed in your article, but was the sole invention and work of Dr. Hall. Though G. E. researchers have done considerable research and experimentation in high pressure since that first diamond synthesis, they still use the original "belt" design in both production and experimentation.

That thousand-ton hydraulic press that "got away" was never a part of the original diamond synthesis and was part of a G.E. public relations facade. A research manager had invested heavily in that press at the suggestion of other researchers who scoffed at Hall's claim that it could be done otherwise. Embarrassed when Dr. Hall produced synthetic diamonds in confirmed experiments with his "belt" (without the huge hydraulic press), G. E. management tried to save face by featuring the huge press in all its news releases, giving credit to a "team" effort while steering reporters away from the soft-spoken Dr. Hall to other researchers quite willing to take credit.

For obvious reasons, G. E. arranged with the U. S. Department of Commerce to have a secrecy order slapped on the "belt," thus limiting Hall's ability to publish his invention and research. Shortly thereafter, Dr. Hall left G.E. for Brigham Young University. With a \$10,000 grant from the Carnegie Institute and a \$25,000 grant from the National Science Foundation, Dr. Hall was able to invent a second high-pressure apparatus called the "Tetrahedral Anvil Press" which also produced diamonds, yet was different enough to acquire a new patent. But the government placed an additional secrecy order on that, requiring Hall to contact over 100 scientists, many from foreign countries who had already seen his work and tell them it was now "secret." Fortunately, Dr. Hall finally won his battle for scientific freedom and the first diamond producing high pressure equipment was introduced to the world as the Tetrahedral Anvil Press. It was later that the scientific article describing the belt was finally published after being held up seven years due to secrecy orders. It was published in Review of Scientific Instruments Vol. 31, pp. 125-131, February, 1960 and was also in H. Tracy Hall's name only.

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The American Institute of Chemists presented Dr. Hall with its Chemical Pioneer Award on May 16, 1970 at which time he was invited to step forth and finally tell the true story of diamond synthesis. G. E. officials and "the team" were invited to attend the Pittsburgh event, but they declined to attend. The speech was published in the American Institute of Chemists periodical The Chemist XLVII, pp. 276-279, July, 1970.

As a direct result of Tracy Hall's pioneer research, Brigham Young University has become known as the center of high-pressure research among scientists and industrialists throughout the world. No university in the world has the high-pressure research facilities available at B.Y.U. In addition, the University maintains the "High Pressure Data Center," a repository of technical information from researchers throughout the world supported by the National Bureau of Standards.

In addition to his diamonds synthesis and Megadiamond accomplishments, Dr. Hall is credited with at least five other major scientific firsts in high-pressure/high temperature. These include development of the first high pressure X-ray diffraction apparatus with Dr. J. Dean Barnett in 1962 and first postulation of the concept of "periodic compounds" in 1965.

If POPULAR SCIENCE wants to do an article about what's really happening in high-pressure-temperature, I suggest you consult the world authority: Dr. H. Tracy Hall, 1711 N. Lambert Lane, Provo, Utah 84601 (801) 374-0300. When he tells you he's too busy, tell him his daughter said you should call. I think it's high time the diamond synthesis record is made straight. It is appalling that after all Dr. Hall went through and after all this time that the original G. E. conglomerate P. R. job is still believed and retold.

I frankly think my Dad was cheated of a Nobel Prize. But he'd rather keep inventing than try to fight the system for the credit. Maybe that's why I'm writing this letter. He never would.

Sincerely,

Mrs. D. R. (Sherlene Hall) Bartholmew

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