Henry O. Fuchs, internationally known expert on fatigue in materials, died Tuesday, Jan. 17, at Stanford University Hospital following heart surgery. He was 81.

A Stanford professor of mechanical engineering since 1964, Fuchs and John Almen of General Motors pioneered the process known as shot peening, where metal parts are bombarded with thousands of pellets.

This process has been widely used to strengthen car bodies, springs and engines. It also led to the use of aluminum wings in B-52 bombers and other aircraft.

Between 1936 and 1978, Fuchs obtained 24 patents for shock absorbers, steering linkages, power take-off mechanisms, car doors, coil springs and shot peening devices.

Fuchs was co-author with R. I. Stephens of a widely used text, *Metal Fatigue in Engineering*, published in 1980. He also wrote, edited or supervised the production of more than 200 case studies now used in engineering schools across the country. Case studies help students learn that "engineering is not a neat and concise profession," he once observed. Case studies show "the lack of information, unexpected conclusions and the extreme importance of non-technical and illogical aspects which face an engineer every day."

Born May 27, 1907, Fuchs received his diploma in Latin and languages at the University of Strasbourg, France, in 1929 and his diploma in philosophy there in 1924. He received his diploma in engineering in 1929 and his doctorate in 1932 from the Technical University of Karlsruhe, Germany. His thesis was on "The Effect of Shock Absorbers on Ride."

He was an engineer with General Motors from 1933 to 1945, designing shock absorbers used in Buicks for many years. He was president of Metal Improvement Co. in Los Angeles from 1946 to 1960, where he made many important contributions to the shot peening process. He became professor emeritus in 1973, but continued lecturing until the mid-1980's and advised students on design projects and research until shortly before his death.

Following is a list of Dr. Fuch's publications and patents in the area of shot peening. Copies of those publications marked with an "*" are available through The Shot Peener library. The Shot Peener library welcomes additions of those publications not currently on file.

"Model Laws and Tests for Predicting Performance" Product Engineering, October, 1942


"Volute Spring Design Data" Product Engineering, February, 1944


"Three Methods of Spring Stress Calculation" The Mainspring, February, 1948

"What Goes on in a Spring During Presetting?" The Mainspring, April, 1949

"Research and Development in a Peening Job Shop" Reprint of a paper, presented at meeting of Division XX of the SAE, ISTC Committee, Homestead, Virginia, October 25, 1956

Continued on Page 3...