

Contributed by:
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At a recent sub-committee meeting of the *Surface Enhancement Division* working on updating SAE J-442 Almen strips, gages and block specification, the question came up, "Why isn't there a "B" strip?"

We all know that there are three strips used to qualify the intensity of a shot peening machine. Each of the strips has a different thickness. The "A" strip .050" thick was probably named for J.O. Almen who conceived the idea of using a strip of C-1070 cold rolled spring steel to qualify the intensity of peening on coil springs. The "N" strip .030" thick was developed by Charles Noble as the "A" strip was not sensitive enough to measure low intensities used on jet engine parts. The "C" strip is .094" thick and used to measure high intensity shot peening.

I recalled attending a dinner at an *SAE Fatigue, Design & Evaluation Committee* meeting some years ago. The entertainment for the evening was an amateur magician named John Straub. What some of you may not know is that John Straub was J.O. Almen's assistant at the GM laboratories, and was involved in much of the early experimental shot peening. Later on he directed the Wheelabrator R&D shot testing laboratory, where he developed the Wheelabrator shot testing machine. Among other things, John was a proponent of excluding fines in operating shot mix for optimum peening results. He also authored many papers in the late 1940's and also holds a patented dual intensity peening process.

When he finished his astounding demonstration of magic, being on center stage, John was asked by Dr. Ralph Stevens, University of Iowa, to relate some of the early events of shot peening in which he was involved. The question was asked why there was no "B" strip. John replied that during World War II the government was investigating the attributes of the German "Tiger" tank over U.S. tanks at the Aberdeen proving grounds. It was found the Tiger had shot peened torsion bars, which gave them a greater fatigue life over U.S. tanks. A deep depth of compression was required in the surface of the bar. The peening intensity was too high for the "A" strip, which warped under the shot impact. So a "B" strip of approximately .078" thick was tried. But it was also too thin. The "C" strip of .094 was finally developed for the application. The "B" strip was superfluous as the "A" and "C" strips cover the intensify range. The "B" strip was discarded and not used again. There was another "B" strip used by the Douglas Aircraft Company. However, it was made from aluminum and used primary to determine coverage on aluminum aircraft parts.