



The Parting Shot Jack Champaigne

What specs say about our industry

Shot peening's ancestor, hammering, can be traced back as far as 2700 B.C. to a gold helmet in Mesopotamia. As city-states began to develop in ancient Mesopotamia, conflicts developed among them. Warfare often arose as the result of wealth, control of the Tigris and Euphrates for transportation and irrigation, boundary disputes, and the need to acquire luxury goods such as timber, stone and metals. The almost constant occurrence of war among the city-states of Sumer for two thousand years spurred the development of military technology and technique far beyond that found elsewhere at the time.¹

Localized wars were likely the impetus for many of the first hammering/peening projects, and the techniques were developed in isolation due to the lack of communication channels and the craftsman's desire to protect his trade secrets. Car manufacturers in the 1930s began using shot peening techniques similar to ours today and they developed proprietary specifications. It took a world war to provide the impetus to improve, quantify and standardize the process. Shot peening became so widely used to improve fatigue life on high-performance metals in World War II that specifications were needed to provide a structure for the control and quality of the process. (See page 12 for a look at the history of specifications.)

Today, even though the innovators in our industry must still protect their trade secrets and patent their inventions,

we have never distributed information so freely. Workshops, tradeshow, on-site training programs, publications, the internet, and even manufacturers, share information on proper shot peening processes and spec conformance.

Specifications are under the magnifying glass more than ever due to the increased emphasis on FAA and Nadcap audits in the aerospace industry. At the EI Asian Shot Peening workshop in Singapore this February, specifications and audits were a big topic in and out of the classroom. Daryll McKinley, an engineering consultant, gave a class on audit preparation and inspections and Kumar Balan, Wheelabrator Group, presented information on machine design and spec conformance. These topics will be presented again at the EI workshop in Canada in May and the USA workshop in Indianapolis in late October.

To me, it is critical to appreciate that the reason we have specifications is because shot peening is a viable metal treatment process with a big future in automotive, aerospace and medical fields. Our specifications, while not a perfect system at this time, will support the growth of quality shot peening practices in a global community. That's why I'm so committed to the specification development work of the Surface Enhancement Division of the Society of Automotive Engineers (SAE) and the sharing of information through training, the internet and this magazine. ●

¹http://joseph_berrigan.tripod.com/id46.html



The EI Asian Shot Peening workshop in Singapore this February attracted many companies from the aerospace industry. The workshop offered a full curriculum on shot peening processes and the classes on audit preparation, inspections, and machine design and spec conformance were especially well-received.