



The Parting Shot Jack Champaigne

Shot peening keeps pace with technology

The Boeing Company is unveiling its long-awaited 787 Dreamliner this summer. It will be the first jet in 13 years from the commercial jet world leader that introduced the 707 in 1954. The company is betting heavily on the need for a technically-advanced aircraft that will provide 20% increased fuel economy.

The gamble seems to be paying off—Boeing has sold out production through 2013 and yet the Dreamliner has never been off the ground. The early success of this aircraft is largely due to international alliances with manufacturers in 135 countries on four continents. Our industry will be part of this new aircraft because Boeing, and many of its suppliers, are evaluating conventional shot peening as well as laser peening, micro-media peening, ultra-sonic peening and composite peening as viable resources.

The demand for lighter, stronger, and environmentally-friendly materials and processes are requirements to ensure the success of most manufacturing today. The social, political and Individual responsibilities demand it! On page four, we highlight a developing technology that could reduce the costs to produce titanium. How will this effect shot peening? Would the stronger material replace conventional steel and eliminate the need for shot peening or would cheaper titanium create more opportunity for shot peening and surface enhancement? I believe the latter and have seen over the years how changing technology has improved and benefited our industry. Every new development opens doors to explore how we can optimize the results through shot peening.

Another example: The EI staff was recently invited to attend a medical company's think tank on shot peening. The company's manufacturing section was given the directive to shot peen the company's titanium implants for strength and longer part life. Their manufacturing engineers had attended the Electronics Inc. Shot Peening Workshop and Trade Show in Indianapolis this past fall to learn more about shot peening. They were so impressed with one of the OEMs exhibiting at the trade show that they ordered a multi-axis shot peening machine with plans to order three more. The engineers are going to great lengths to ensure that they use the shot peening process correctly and can validate results every cycle from every operator, every shift and at every physical location a part is processed.

In March, Electronics Inc. was part of an education workshop in Nagya, Japan. The material was presented in Japanese and attended by a cross-section of industry. The workshop was a collective effort by the Japan Society for Shot Peening (JSSP), Sintokogio, Toyo Seiko and Electronics Inc. Dr. John Cammett, Tom Brickley and myself were greeted by our host, Hitoski Takeda, at the Sintokogio world headquarters. The opening by



This picture, taken June 13, shows the horizontal stabilizers attached to the tailcone with the vertical fin in the background. Final assembly of the first 787 began on May 21 at the Boeing facility in Everett, Wash. The Dreamliner was scheduled to roll out on July 8, 2007. Image provided by The Boeing Company.

Dr. Kisuke Iida, Past Chairman JSSP, was well-received by the large group. Dr. Yoshihiro Watanabe, Managing Director Toyo Seiko Co., Ltd., was not only responsible for all translations, but was also a presenter. Other speakers included Juji Kobayashi, Hitoski Takeda, and Dr. Katsuji Tosha, the current JSSP Chairman. Due to the success of this event, it has been agreed to hold a second meeting next year. After witnessing the high level of shot peening technology for aerospace and automotive applications, it is clear to us that Japan continues to develop shot peening research, equipment and processes that are a leading example for the world. ●



Attendees to the EI Japanese workshop. Top row, left to right: Hali Diep, Boeing; Jack Champaigne, Electronics Inc. Bottom row: Dr. John Cammett, Electronics Inc.; and Dr. Kisuke Iida, Past Chairman JSSP.