



# Moving Ahead Nadcap Training, SAE Specs

I was pleased to be invited by Richard Sovich and Arshad Hafeez with Performance Review Institute (PRI) to the annual Nadcap Task Group meeting in Pittsburgh, Pennsylvania in October. A special meeting was held for Partners in Education to explore the expansion of training opportunities in non-traditional surface treatments as it relates to shot peening (Electronics Inc. Education Division is a Partner in Education with Nadcap). This should be a great help to aerospace primes and their contractors to facilitate consistent training requirements and curriculum materials. PRI presently has training programs in other interest areas and several aerospace primes were requesting assistance in specialized shot peening training.

I was also asked to give a presentation on shot peening that I called "Shot Peening State of the Union." It was well-attended and participants asked good questions. All in all, the Nadcap meeting suggests that the aerospace industry is continually placing more importance on quality shot peening processes.

Regarding SAE, the annual winter meeting of the Surface Enhancement Committee of AMEC will take place January 26-27 in Pacific Grove, California. The hot topics include AMS 2430 and AMS 2432 and, would you believe, the revised cancellation notice for AMS-S-13165, the old Mil spec? Several changes are proposed for AMS 2430 to help those transitioning from AMS-S-13165. The table of recommended peening intensities for various materials and thicknesses will be upgraded and included along with several other significant issues. For more information, or if you wish to join the sub-committee, contact me (574-256-5001) or Al Patterson at Lockheed Marietta (770-793-0239).

Another meeting topic will be for the aerospace primes that are deeply concerned that their parts might be peened in a job shop in a batch processing manner, such as barrel or tumble type equipment. We have some individuals that claim manual peening is

permitted in 13165 because it doesn't specifically say it's not allowed. AMS 2430 specifically states that manual peening shall not be used. A special notice for AMS 2430 was initiated that would require special permission to use such equipment. It's interesting to note that AMS-S-13165 specifically requires use of automatic equipment. As I read the paragraph from 13165, I conclude that manual peening is not allowed. I'll report. You decide.

Other issues on the table:

- Amount of material retained on the top sieve screen for glass bead
- Table of appropriate Intensity when not specified by customer
- Method of coverage determination for high-hardness parts
- Permission to substitute cut wire media for cast steel shot
- Permission to substitute shot size up or down one level
- Allow use of sub-size strips for intensity determination
- Procedure for in-machine media maintenance
- High hardness shot to be required for parts over 200 KSI
- Hardness requirement when using a scrap part for Almen fixture
- Media velocity measurements for process control
- Hardness testing of ceramic bead, methods and limits

You might be surprised at the length of the list of items under consideration, especially since AMS 2430 was first published in 1948, five years before MIL-S-13165 hit the streets. We'll keep trying. I won't retire until we get it right. ●

## AMS 2430

3.2.1.2 The peening machine shall provide means of propelling, at a controlled rate, dry metallic shot by air pressure or centrifugal force, or propelling dry or wet glass beads or ceramic shot by air pressure, against the work, and means of uniformly moving the work through the shot or bead stream in either translation, rotation, or both as required. The nozzles and the work shall be held and moved mechanically.

8.5 Manual peening is not directly addressed by this specification. Prior and future applications should be as agreed upon between processor and the cognizant engineering organization.

## AMS-S-13165

3.2.1 Automatic shot peening: The machine used for shot peening shall provide means for propelling shot by air pressure or centrifugal force against the work, and mechanical means for moving the work through the shot stream or moving the shot stream through the work in either translation or rotation, or both, as required.