The Shot Peener

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Don’t forget to renew your free subscription to The Shot Peener. Fill out the enclosed form today!

News from Workshop ’94:
Students Practice Almen Gage Readings

The 1994 class of students assembled at the Holiday Inn on the beautiful Riverwalk in San Antonio, Texas for five days of instruction, food and fun. This year we had 68 students from five countries, our largest class size in the four year history of the workshop. In addition to the regular lecture-style curriculum, we were able to practice Almen strip readings and measure student performance for gage repeatability and reproducibility (Gage R&R).

Students worked in 18 groups of three, each group having 10 almen strips and one gage. Each student was asked to measure the 10 strips and the data was recorded in a standard R&R chart. After all three students made the measurements the task was repeated twice so that each student had three chances to measure each strip. After all 90 data points were recorded the students were then given a different Almen gage to compare their performance. The data sheets with the two sets of 90 measurements were then collected for computation by the Shot Peener staff. Each student was given a copy of their groups’ performance prior to leaving the workshop.

Most students were able to see a significant difference between “older” Almen gages and “newer” Almen gages. The purpose of the exercise was twofold: First, to introduce the students to the concept of performing an Almen Gage Repeatability Study; second, to introduce them to the newer style Almen gage that meets the AMS 2432 specification and the soon-to-be-released revision of SAE J-442. Both of these specifications require digital indicators with .0001” resolution. End stops are now shown on J-442. These two enhancements provide substantial improvements in reducing Almen gage reading variations.

Conventional practice with gages places limits on gage reading variations. The variations are related to the tolerance band of your process. In other words, how much of your available tolerance is being consumed by variations in gage reading? If you are above 30%, you must stop using the gage until it is corrected. Between 10-30% you may continue using the gage, but you must implement an improvement plan. Below 10% gage reading variation is acceptable practice.

Notice the following from the bar chart:
1. All the “new” gages showed less than .0005 reading variation
2. 15 of the new gages showed less than .0003 reading variation
3. Five of the older gages showed more than .0013 reading variation

The message to the students was “It is difficult to get proper credit for your shot peening performance if your Almen gage is incapable of consistent performance.” If you are interested in learning more about performing an Almen Gage R&R, circle Bingo No. 10.

The Top Five Reasons Why the ’94 Peening Workshop Was Not Held at Electronics Inc.

#5 San Antonio was easier to find than Mishawaka!
#4 San Antonio restaurants permitted the field testing of the relationship between “salsa” and “compressive” stress!
#3 Texas margarita’s get you to saturation quicker!
#2 Jack heard mariachi bands help fight fatigue!
#1 Jack wanted to promote the slogan – “Remember the shot peener!” by John Pokorski, Wheelabrator.
A Salute to Our 1994 Workshop Attendees

We would like to thank the following companies and individuals for participating in the 1994 workshop.

Abrasive Materials, Inc.
  Mike McCarty
Allied Signal Engines
  Paul Eisenmann
Associated Spring
  David B. Kasul
BCP Systems
  Macon Jones
Caterpillar, Inc.
  Tom Kulupka
Clemco Industries Corporation
  Tim Politte
Cooper Industries
  Robert R. Decker
Corpus Christi Army Depot
  Eldon Anderson
  Carol Clark
  Kelly Jackson
  Daniel P. Lazo
  Juan F. Quintana
  Jill Van Vleet
Dearborn Precision Tubular Products
  Dale Mallett
Dee Howard Company
  Keith Ordean
  Tom Young
EMS American Grilon
  Barbara Edwards
Empire Abrasive Equipment Co.
  Ansell MacMillan
  Chris Roberts
Hill Air Force Base
  Gary L. Miller
  Roger A. Simmons
Hilti, Inc.
  Delbert Mayberry
  Dale Schrimshaw
  Troy Wells
Hydro Honing Laboratories, Inc.
  Walter A. Beach, Jr.
Kelly Air Force Base
  Gary Cox
  Richard Gonzalez
  Amador Guadana
  Robert Harris
  Timothy Hinson
  Armando Hernandez
  Jose Quinones
  John Smith
  David Vega

Kelly Air Force Base - Metallurgical Science Section
  Domingo Carrillo
  Mark Syma
  Bret Vogel
Menasco Aerosystems Division
  Bill R. Neely
  Woody Robinson
National Aviation Depot - Jacksonville
  Darrell McKinley
  Jon L. Devereaux
National Metal Abrasive, Inc.
  James L. Flowers
National Metal Finishing
  Gilles Levasseur
Norblast SAS
  Michele Bandini
  Cassoli Valter
Pangborn Corporation
  Lynn Keller
  Mike Krause
  Bill Ward
Potters Industries Inc.
  Bob Mulhall
Rassini S.A. de C.V.
  Ing. Edgar Lopez Del Bosque
Royal Jordanian Airlines
  Dr. Talal Al-Haddid
  Omar Al-Sahhar
Sandvik Rock Tools
  Karl Hilgers
Southwest Research Institute
  Tom Whitney
Superior Shot Peening
  Van Blasingame
Tiilghman Wheelabrator Ltd.
  David Barnes
Vought Aircraft Company
  Silvia Baeza
Wheelabrator Corporation, The
  Tom Warren
  Bob Maurer
  Ted Kostilnik
  John Hawkins
  Dan Diverty
  Greg Allemano
Wheelabrator Sisson Lehmann
  Paul Radulesco
  Dominique Schwab
W.M. Mexicana (Wheelabrator)
  Hector Chavez
Lynn Keller, Mike Krause and Bill Ward practice almen gage readings.

Lunchtime: The food and conversation were greatly enjoyed.

Eugene Tarabek, Dan Diverty and Bob Maurer work on their gage R&R.

Charlie Barrett during his presentation.

Pete Bailey of GE Aircraft Engines during his presentation.

John Pokorski from Wheelabrator relies on an interesting pointer.


John Hawkins, David Barnes, and Paul Radulescu at the display in the Wheelabrator hospitality suite.