

Introducing the Aviation Related Shot Peening Forum in Europe

A FEW WORDS of introduction: I am Ralf Zimmermann and I am the Level 3 for Airfoil Shot Peening at MTU Maintenance in Hannover, Germany. I joined MTU in 2002 and so I will celebrate the 20th anniversary this year. I am a member of the forum and I want to present what the forum does, what it did in the past, and what it will do in the future.

WHO WE ARE

To keep it short, I will use ARSPF instead of “Aviation Related Shot Peening Forum”. We are a group of Level 3 shot peener and process engineers in the aviation industry and our community grew up over the last six years. It's not an exclusive group and we meet without any commercial background. It is an open discussion forum about shot peening and the technology, experience and knowledge behind it. For sure we are all more or less competitors but in matters of shot peening

we share our expertise. All the current members are closely connected to aviation but we are not limited to this.

The forum was established in 2017 and its current members are the following organizations:

- cargolux
- LIEBHERR Aerospace
- Lufthansa Technik
- Lufthansa Technik – AERO Alzey
- mt-Propeller
- MTU
- N3 Engine Overhaul Services
- Nehlsen-BWB Flugzeug-Galvanik Dresden
- Rolls-Royce Deutschland
- sentenso
- SR Technics



Participants of an ARSPF meeting at sentenso in March 2022. Photographed from left to right are: Hinrich Severin, Martin Brötz, Gerd Trefzer, Nadine Goertz, Christian Peutler, Daniel Schmid, Wolfgang Hennig, Steffen Beckert, Manfred Kiser, Volker Schneidau, Holger Polanetzki, Alfred Pirker, Christian Koerbs, Lukas Gerner, Jens Borrmann, and Lea Mainberger. Not photographed is Ralf Zimmermann.

The relationship between members is an important pillar for targeted discussions. The purpose of the group is to create a forum for the exchange of ideas and knowledge related to developments, inventions and also nomenclature in the field of shot peening. To have discussions on a good level a prerequisite to be a member is working as Level 3 process engineer.

Our objectives are to influence OEM design and specifications, to address development issues within the technology field, to present a unified approach to suppliers, and to coordinate development and testing in order to optimize the process.

There's no membership fee for the group and each member is responsible for his/her own costs for attending the meeting.

During the pandemic we missed one meeting and we held another one virtually. In 2022 we followed our intentions to meet together and were supported by sentenso in Datteln to hold the meeting in person. Meetings are held once a year. Each meeting is hosted by a ARSPF member who will organize meeting locations, activities, lunch and refreshments. A meeting coordinator will be appointed to prepare and distribute an agenda prior to each meeting. The task of meeting secretary will rotate among all members. A meeting secretary will write the minutes of each meeting and distribute them to members after the meeting. For each meeting a guest speaker will be invited from suppliers, universities or institutes, if available.

WHAT WE DISCUSS

Our special interests are related to aviation and we always have different discussions about specifications, their interpretations and training from new and experienced staff. Various company specifications describe individual topics; for example, process development tasks or intensity verification methods with varying degree.

Additionally, we discuss manufacturing issues like masking tapes and covers or semi-automated "Masking Just in Time" to protect areas where peening is not allowed. Sometimes it could be an improvement to figure out what is the following process after shot peening, to be able to choose an alternative media for the shot peening process, and to gain savings for the subsequent treatment of the part.

We always have opinions and we discuss new technologies as shown in specific magazines like *The Shot Peener*. Typical examples are solutions to measure media velocity or to measure the peening energy with a weight-based energy absorber in order to achieve continuous process control.

Other topics, for example, are Almen gauges, Almen test strips, test strip holders, test strip simulation, residual stress measurement (X-Ray), staff education, certification, specifications, future process development, machine concepts, equipment and different methods of achieving compressive stress, etc.

Finally, education and training for different functions such as operator, process engineer, and also process authority are part of the discussions as well.

HOW WE WORK TOGETHER

Some may wonder how we can be so open within the group, sharing information and still be competitors. One of the key rules within the group is that the membership is not an opportunity to promote commercial interests. It's very important that all members both "give and take" information. It is necessary to not only to be a listener, but also to be a contributor to discussions in the group and with other members.

For information about the Forum, please contact:

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