

process control in the production environment. Ongoing projects at the facility will further this research work and investigate other aspects of gear peening, together with the measurement and control of the peening process.

As part of the USF Surface Preparation Group's support package, the facility has been equipped with the very latest Vacu-Blast 'Ventus 150P AXT' programmable shot peening machine, which enables the peening process to be very precisely controlled and monitored.

The new gear peening facility was officially "launched" at a champagne reception at the University of Newcastle on Tuesday 3rd December by Andrew Carmichael, the USF Surface Preparation Group's Vice President - UK Distribution and European Business Development.

The Design Unit Gear Technology Centre, part of the School of Mechanical and Systems Engineering at the University of Newcastle upon Tyne, is a self-funding research, development and design group in the field of mechanical power transmission, working for industry and Government. It was founded in 1970 and has 24 full time staff. As well as the new USF-sponsored laboratory, the unit has five other dedicated laboratories and well equipped mechanical, materials and electronics workshops.

USF Surface Prep Group

NEW GEAR PEENING RESEARCH LABORATORY AT THE UNIVERSITY OF NEWCASTLE DESIGN UNIT SPONSORED BY USF SURFACE PREPARATION GROUP

A new laboratory, dedicated to research into the shot peening of automotive gears and transmission systems, has been opened recently at the Gear Technology Centre, operated by the Design Unit of the School of Mechanical and Systems Engineering at the University of Newcastle upon Tyne in the north east of England.

Shot peening (or peening) is a process used widely to enhance the fatigue resistance of metallic components that are subject to cyclic stresses - gears and transmission shafts being typical examples. The process has been employed for many years in the aerospace industry for treating highly stressed parts to prolong their operating life and is being utilized increasingly in both the motor sport and performance production car fields. It is the modern-day technological equivalent of the use of a ball peen hammer to increase the strength of armour and swords, favoured by medieval blacksmiths.

The new facility is sponsored and part funded by the USF Surface Preparation Group, with additional support from the Engineering and Physical Sciences Research Council (EPSRC). Two USF Surface Preparation Group companies in particular - Impact Finishers and Vacu-Blast International - have worked closely over the past two years with Dr Brian Shaw, head of Materials Engineering at the Newcastle Design Unit, on the optimisation of shot peening parameters. The result of this project, which was under the leadership of Impact Finishers' technical specialist, Franck Petit-Renaud, is expected to prove of immense value for



Dr. Brian Shaw (left), head of Materials Engineering at the University of Newcastle Design Unit, and Andrew Carmichael, the USF Surface Preparation Group's Vice President - UK Distribution and European Business Development, "launching" the new USF Vacu-Blast programmable shot peening machine, which forms a vital part of the Design Unit's new gear peening laboratory.