

REACHING NEW HEIGHTS AT FSUE "SALUT"



New Gleason Phoenix®II 600 G Bevel Gear Grinding Machine and advanced Gleason metrology system propel bevel gear production forward for Russian aircraft engine pioneer FSUE Gas Turbine Engineering Research and Production Centre "Salut".

The world's aerospace leaders are applying new manufacturing technology and production methods on a scale not seen since the dawn of the jet age.

But for FSUE Gas Turbine Engineering Research and Production Centre "Salut", the application of advanced new technologies to produce aircraft engine components is nothing new. In fact, "Salut" is Russia's oldest aircraft engine builder, with a history of innovation that dates back to 1912. It was one of their engines, in fact, that the famed Russian aviator Pyotr Nesterov used in 1913 to power his Nieuport-IV to perform the world's first loop maneuver. In the 1930s, Soviet aviators performed some 110 record-breaking flights in aircraft powered by "Salut" engines, including the first non-stop flight from Moscow to the United States via the North Pole, and a world record-breaking flight from Moscow to

Beijing. Today, "Salut" is the Russian Federation's largest aircraft engine builder, specializing in the development, production and maintenance of engines for many of the country's advanced fighter aircraft and helicopters.

Gleason Total Gear Solutions at Salut. FSUE "Salut" and Gleason began partnering on solutions for the production of aircraft gears as far back as 1938, with their purchase of a Gleason straight bevel gear cutting machine. Since then, Gleason machines have been employed for the full range of cylindrical and bevel gear production, including hobbing, cutting, shaping, grinding, honing, testing and measuring. Most recently, "Salut" has again turned to Gleason, this time to deliver faster, higher quality hard finishing of its high-hardness alloy bevel gears. "These gears must operate dependably in the most extreme conditions





“Salut” personnel, from left to right: Pavlenko M. Yuri, leading gear specialist; Novikov S. Valentin, chief of laboratory; Chuvirov Y. Andrei, gear grinding specialist; Savushkin N. Yuri, leading technologist.

imaginable, so quality and reliability are very important for us,” says Novikov S. Valentin, the well-known chief of the “Salut” laboratory for engine research. “The recently acquired Gleason Phoenix® II 600 G Bevel Gear Grinding Machine is meeting the challenge, and producing DIN 3 quality gears faster and easier than ever before.”

In addition, “Salut” is using Gleason WINDOWS® based bevel-gear design software (CAGE™, G-AGE™, and Summary Manager) to enable their gear designers to quickly design and refine bevel gears in a fraction of the time it would normally take using the conventional trial and error approach. Lead times for summary calculations for the 600 G can also be greatly reduced, making the machine more productive and easier to use – all of which translates into reduced production costs.

Finally, a Gleason 650GMM Analytical Gear Inspection System is being used for the complete inspection of gears with diameters up to 650 mm. According to “Salut”, the system excels in speed, accuracy and ease of operation. The powerful GAMA™ 2.0 Windows® “object oriented” applications software suite, for example, offers users not only significantly faster cycle times, but also a highly

desirable menu-driven human/machine interface that greatly simplifies day-to-day operation.

“Lives literally depend on the quality of the work done on Gleason machines,” concludes Mr. Novikov. “Gleason gives us the best opportunity to achieve the highest possible quality – and maximum results.”

Complete inspection of all critical ring gear features is completed with a Gleason 650GMM Analytical Gear Inspection System using a Renishaw SP80H scanning probe. Equipped with a powerful Windows® applications software suite, the Gleason system delivers significantly faster cycle times and a highly desirable menu-driven human/machine interface that greatly simplifies day-to-day operation.

