Enviro-SAVE® products inc.

TECHNICAL INFORMATION

The Enviro-Save Metal Treatment process comprises the impregnation of all friction surfaces with TETRA FLUOR ETHYLENE (TFE) resin to minimize friction/drag, wear, and corrosion.

Figures 1 & 2 show the top and cross sectional surface views of an engine crankshaft bearing shell under 4,500 times magnification. This view consists of peaks and valleys, not the smooth polished surfaces we see with the naked eye. The roughness of the asperity induces turbulence in the oil film between the bearing surfaces and in the boundary (marginal) lubrication mode. This turbulence encourages oil film breakdown, allowing the bearing surfaces to contact each other.

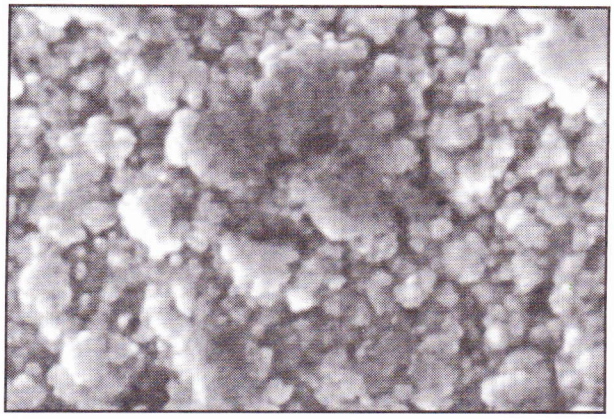

Figure 1: Top View

Figure 3 shows the same bearing surfaces now filled with TFE resin (in green) to the height of the peaks (only), thus not laying a film or coating which would reduce running clearance, but forming an impregnation. Subsequent (periodic) monitoring by oil analysis confirms that the single Enviro-Save TFE treatment remains in the bearing surface indefinitely, without repeat applications.

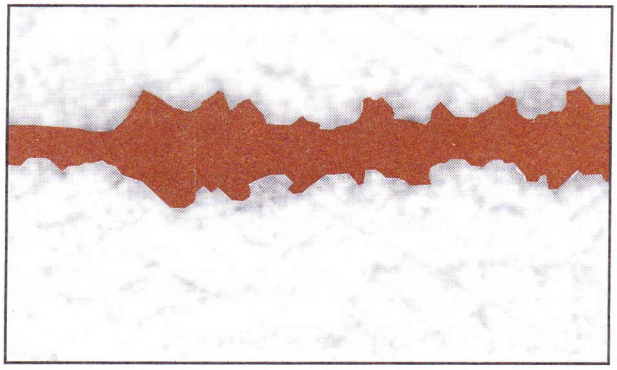

Figure 2: Cross Section

With the peaks and valleys changed to a smooth plane of TFE resin, oil film breakdown by asperity induced turbulence is greatly reduced in the boundary lubrication mode, and in the dry start and extreme adverse modes (loss of oil pressure/lubrication source) where the surfaces touch, damage is minimized when only the peaks of the asperity may touch. The bearing load/pressure is now taken by the resin-to-resin filled surfaces, which have the lowest coefficient of friction known. (See Guinness Book of World Records, 1994, page 75).

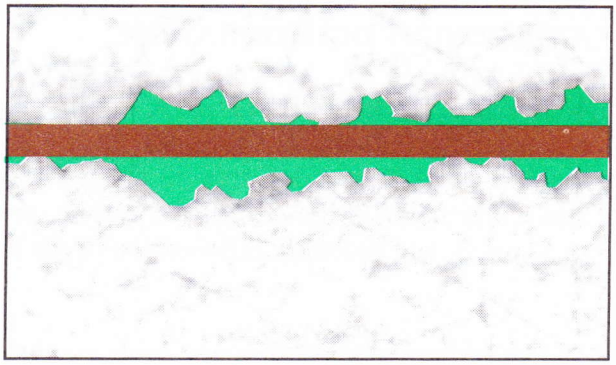

Figure 3: Resin Filled

The TFE impregnation, being inert, will provide long term corrosion protection of all relative engine/equipment components.