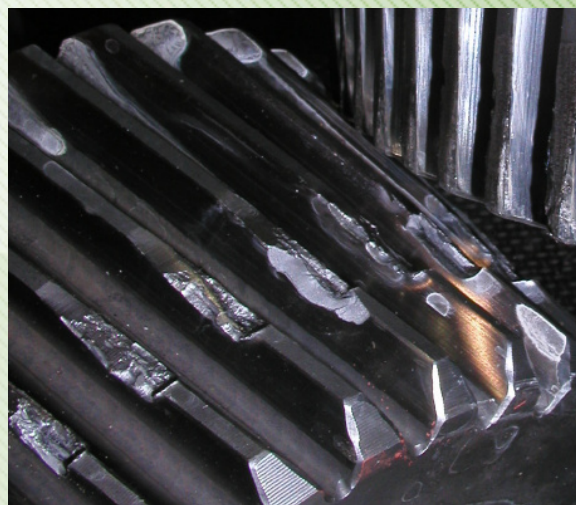


TROUBLESHOOTING

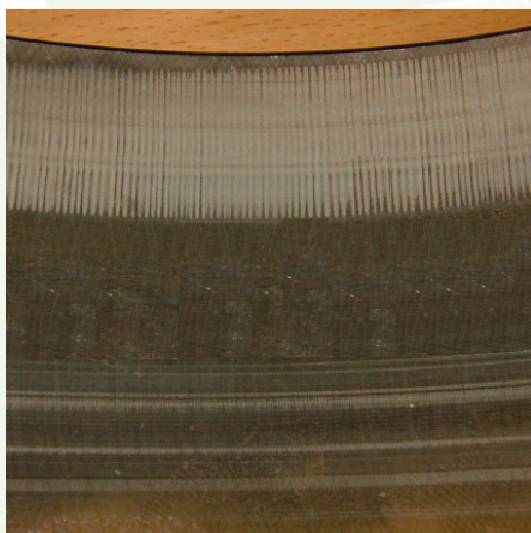
Root causes of failures are often left unnoticed and faults are thought to be caused by normal wear. The life cycle of heavy machinery is normally several years and the factors that decrease it should be carefully analyzed.

The goal for troubleshooting is to study and point out the root cause of the failure. The best situation is when problems are detected before they cause the first failure. Following symptoms often indicate problems:

- abnormal noise
- changes in vibration level
- increased temperature
- power loss
- other abnormalities



Gearwheel failure caused by overload



Outer race of a bearing. Failure pattern caused by stray current.

It is possible to prevent further failures by detecting and analyzing the faults. The main tool for the troubleshooting service by Nome Ltd. is vibration measurements. Other important tools are:

- visual inspection
- failure analysis
- analysis of history data and information
- run up and coast down- tests
- cooperation with OEM's
- oil analysis
- material tests

The methods used in troubleshooting are always decided depending on the case. The results and recommended actions are clearly written in the report.