

# Predictive Maintenance

The OIL SERVICES GROUP: SYSTEM SOLUTIONS & EDUCATION

**T**HROUGH ITS  
Oil Services Group

(OSG), BC Bearing

provides customers with oil

and grease lubrication solu-

tions coupled with on-site

educational seminars and

plant or mill audits. The

goal for Oil Services is to

eliminate costly unscheduled

downtime and support better

maintenance practices.

“Based at Technical Services in the Edmonton South location of BC Bearing, Oil Services Group works with all 23 branches,” commented Stuart Hamilton of OSG. “I handle the Contamination Control, the Schroeder Filtration and Oil Analysis side, and Rene Gulinosky is responsible for the automated lubrication, the Safematic side. BC Bearing started Oil Services Group about a year and a half ago, after taking on a couple of key products, Schroeder filtration and Safematic automated lubrication. OSG was developed based on the needs of the customers. The customers recognized that they needed to push away from reactive maintenance and improve their maintenance philosophies to move forward into predictive maintenance. Right now, the three areas that we concentrate on are Contamination Control/Filtration, Automated Lubrication, and Oil Analysis.

“It all starts with education. Our seminar on Contamination Control/Filtration addresses why you need to improve the level of contamination in your oils, stop the ingress of contaminate into the oils, and how filtration and quality filtration need to be applied. When working with a customer, we act as a facilitator in the support of improving maintenance practices in regards to oils and greases. In order for us to do that, we must understand what the customer is doing today, so I do an audit. I look at all the filtration media in all the hydraulic oils, lubrication oils, critical gearboxes and large gearboxes. The whole idea is to get the oil to the targeted cleanliness class and do it for less money than it costs the customer today.

“What’s driving contamination control is how technology has improved the manufacturing and the tolerance of components. They can no longer tolerate high amounts of contamination. In the past, a hydraulic gear pump was about 50% efficient, whereas now you take a piston pump—it’s at 97% efficiency. That kind of efficiency means that tolerances are very

## ON-SITE SEMINARS AVAILABLE

The Oil Services Group brings educational seminars directly to BCB customers. The topics addressed are: Contamination Control/Filtration, Oil Analysis, and Lubrication Fundamentals.

These 90-minute modules are conducted at the customer’s place of business. To arrange for a seminar at a plant or mill audit, contact Stuart Hamilton at [shamilton@bearings.com](mailto:shamilton@bearings.com) or call: (780) 720-7866. 🇨🇦

tight between the piston and the barrel. That fact, combined with increasing hydraulic system pressure, means that contaminated oil becomes a very big problem.

“The biggest misconception people have is that new oil is clean. In most cases, on hydraulic systems and definitely on bearings, you need to filter that oil, because it’s not clean enough for the components to run on. What we talk about is the Cleanliness Class Code. It’s an ISO standard for oil cleanliness. Every component manufacturer, whether it’s for a gearbox or bearing or hydraulic pump, has a Cleanliness Class Code from the OEM that states that you must maintain that cleanliness class to have any kind of warranty consideration, and of course, to get any kind of life out of that component.”

Hamilton noted that many end-users are at risk because of improper storage of oil. “You’ll see it on a fairly regular basis. People are letting the oil storage reservoirs breathe to atmosphere. There may be a downpipe that has no filtration on it, or it has a very shoddy breather on it. A ‘desiccant breather’ should be used on bulk storage reservoirs, because the oil heats up or cools over the course of a day. It expands and contracts, so of course, some air is going to move in and out. When you are taking the oil out, you are pulling the air in, so if you don’t have a quality breather, you are breathing in all the contaminants and moisture that are in the air. You want



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**Stuart Hamilton, Oil Services Group, BC Bearing Engineers Ltd.**

to remove all of that so you don’t add contaminated oil to your system reservoir.

“So now, we’ve got customers that are cleaning up their oils. We have improved their maintenance practices when it comes to dispensing the oils into their system, and we have stopped the ingress of contaminants into oil. We’ve gotten that under control now, so the next step is to start doing an oil analysis program.”

According to Hamilton, a key component of predictive maintenance today is a quality Oil Analysis report, which, at a minimum, should include tests for viscosity, ISO Cleanliness Class, water contamination, and spectro-chemical testing. “The biggest hurdle to overcome when starting an oil analysis program is commitment to the program and taking ownership of the program. If an oil analysis program is to be truly successful, it must give the plant or mill more than just the condition of the oil. It needs to give a very good picture of the condition of the equipment. Too many oil analysis programs are discontinued because management sees very little benefit or cost payback. Not seeing a benefit to oil analysis can always be blamed on the lack of education. I heavily promote education for everyone involved in the plant or mill maintenance.

“A lot of operations are at risk because they do not have an adequate oil analysis program. I was with one particular customer who does oil analysis, and they had an identical plant in the US that was *not*

doing analysis. The US plant had a gearbox that failed under running conditions, which put the plant down. However, the company doing the oil analysis was able to avoid that kind of trouble, because they started to see metal coming into their oils. They started to increase the frequency of how often they do their testing, so they could monitor it more closely. They put the plant down by having their scheduled shutdown a little earlier in order to deal with it and rebuild the box. The sister company in the US that went down under operating conditions—it cost them a million dollars more to get that plant up and running after that gearbox failure. That shows why predictive maintenance is much more cost-effective than reactive maintenance.

They could have saved a million dollars by putting the plant down under controlled conditions to rebuild the box, instead of having to respond to a catastrophic failure.”

On the automated lubrication side of the equation, education is key as many end-user customers in Canada have yet to take advantage of opportunities to improve equipment performance and increase productivity. “When it comes to automated lubrication, most plants and mills in North America are just manually greasing the points,” said Hamilton. “Automated lubrication in Europe is nearing 90%, while North America has barely reached 10%. Efficient lubrication significantly boosts producti-

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