



**Reducing Tribological Losses and Failures –
Workshop and Panel Discussion
STLE TORONTO SECTION
Wednesday, November 14, 2018**

**Lubricant End Users, Equipment OEM'S, Oil Analysis
Personnel, Consultants, Lubricant Suppliers, and Other
Lubrication Related Suppliers**

Today, manufacturing and service sector companies have to become more reliability focused to remain competitive in a global economy. Proper lubrication and reducing tribological failures are the cornerstones of any reliability focused programs.

Industry does not capture full value from the assets due to tribological losses that lead to damaged equipment, energy loss, and premature disposal of the assets and lubricants used in their operation. Billions of dollars are wasted every year, but industry can often do better by implementing simple solutions. All it takes is a little planning, proper maintenance procedures, and most importantly, letting everyone know that doing it the way it was always done before is not the way to progress.

STLE is a not-for-profit organization with a mission "To advance the science of tribology and the practice of lubrication engineering in order to foster innovation, improve the performance of equipment and products, conserve resources, and protect the environment."

Our speakers have been selected to provide you a better understanding of the challenges facing industry but more importantly, provide some solutions. These speakers are well established experts in their field with many years of experience and practical know how.

The STLE Toronto Section has a goal to help companies address these problems with a series of workshops on cost savings. This can be accomplished with the better application of existing technologies, by improved condition monitoring and by improved awareness. Do not miss out so come to this great event and learn so that you can return to your respective companies better equipped to make a difference.

Location: Kinectrics Auditorium, 800 Kipling Ave, Toronto, M8Z 6C4

Reducing Tribological Losses and Failures – Workshop and Panel Discussion Program

8:00 Registration and coffee

8:30 ‘Welcome and Safety’

Jim Arner, Pirr Tribology Solutions, STLE Toronto Section Chair

8.45 ‘Tribological Friction and Wear Loses – We Need to do Better’

**Ken J. Brown, CLS, P.Eng, STLE Fellow
Eco Fluid Center Ltd.**

Abstract: With the 1964 UK Jost report, the Good Ship Tribology set sail. Did it sink in Canada? Studies have shown that about 2% of a nation's GDP is spend on friction and wear. In Canada, we had the 1986 NRC report that over that \$5 billion is lost annually. This had 10 recommendations that including more research but also better training and education as well as improving both information sources and co-ordination. It was also found that 25% of the losses could be saved with the application of existing technology. Actual saving could be much higher given that 90% of rolling element bearings reportedly do not reach their design life. The presentation will cover studies, what others have done, and what can be done in Canada. Savings can be relatively easy with the appreciation of all costs. In addition, ‘greening’ can include longer life, energy saving and/or wear reducing products.

Bio: Ken was with Ontario Hydro for 17 years leaving in 1993 as a Senior Design Engineer. Worked on bearings, lube, seals and couplings for all forms of rotating equipment in fossil and nuclear stations. Formed Utility Service Associates and now Eco Fluid Center Ltd. They provide specialty products and services to clients and power stations. Products include MOV Long Life for motor operated valves and VSG a canola oil-based grease for hydro stations. Clients include the Electric Power Research Institute and Canoil Canada. Ken has given numerous presentations at STLE Annual Meetings, Sections and Education Workshops as well as to EPRI and Noria. Most recently to PEMAC Maintrain 2018.

9:15 ‘Lubrication Best Practices’

**Bill Quesnel, President
WearCheck Canada Inc.**

Abstract: Lubrication is the cornerstone of any reliability driven maintenance improvements for rotating machinery. Proper lubricant procedures will eliminate failures and increase reliability and machine uptime. Implementing a world-class lubrication program can cut maintenance costs by 30% with a modest investment in new resources and procedures. Put your plant on the path to achieving world-class lubrication.

Bio: Bill Quesnel is a longstanding member of the STLE developing his oil analysis experience within WearCheck International through many roles. Bill is

currently the President of WearCheck Canada, Lubrigard Ltd and CINRG Systems Inc. Over his 30 years in the industry Bill has helped many large companies establish successful oil analysis programs, and having time and time again witnessed the need for lubrication management programs founded Lubrigard to provide clients with the necessary services, training and products to manage their lubricants effectively. Bill is CLS, OMA I, OMA II, MLA-I, MLA-II, MLA-III, MLT-I, MLT-II, LLA-I Certified.

10:00 Break

10: 15 Exploring additive interactions in complex lubricant formulations

Cory MacLeod, Technical Service Manager

Lanxess Solutions US, Inc.

Abstract: Complex lubricant formulations often contain more than 10 components. The additives used to formulate these lubricants encompass a wide range of chemical functionalities. These chemical functionalities may or may not be compatible with one another once blended into the final lubricant formulations. As a result, understanding the interactions of additives in lubricant formulations provides opportunities for synergistic interactions, while avoiding antagonistic interactions, in an effort to maximize the effectiveness of the formulated lubricant. This presentation will describe a number of examples of antagonistic and synergistic interactions found in lubricant formulations. In particular, the interactions involving the anti-wear additive zinc dialkyldithiophosphate (ZDDP) with other lubricant additives will be described in detail, with a focus on the underlying mechanisms involved in these interactions.

Biography: Dr. Cory MacLeod is a Technical Service Manager for the Lubricant Additives Business at LANXESS Solutions US, Inc. Cory earned his Bachelor of Science at the University of Prince Edward Island and his PhD in organometallic chemistry at the University of British Columbia. After completing his PhD, Cory joined the Department of Chemistry at Yale University as a Postdoctoral Research Associate where he conducted mechanistic studies on nitrogen fixation with first-row transition metal complexes. Since joining LANXESS in 2016, Cory's research interests have focused on the development of new lubricant additives designed to improve wear protection, reduce friction, and improve lubricant service lifetimes.

10:45 'Hydraulic Efficiency Improvements'

Lynn Billings, Senior Technical Service Advisor

Petro-Canada Lubricants Inc.

Abstract: Mobile equipment operators in the construction, forestry, mining and transportation industries have been continuing to change their hydraulic fluids for winter and summer use. However, it has been shown that switching to a multi-grade fluid for year-round operations will save time in changing fluids as well as improving fuel efficiency and improvements in productivity. Overall, pump

efficiency relies on obtaining the balance between hydro-mechanical efficiency and volumetric efficiency.

Bio: Lynn Billings is a Sr. Technical Service Advisor with Petro-Canada Lubricants Inc. Lynn has an Honours Chemical Engineering Technology Diploma as well as attending the University of Guelph for a Bachelor of Science. Lynn has over 40 years in the lubricant industry. She has 20 years at R&D (Gulf Canada and Petro-Canada). Prior to joining Petro-Canada Lubricants Inc., she was a Laboratory and Product Development Manager as well as Technical Sales at Forsythe Lubrication.

Lynn has been very much involved with the STLE and served on the STLE Board of Directors for 6 years. She has been a dedicated member of STLE for over 28 years and is the Chair of the Hamilton Section with over 13 years on the Executive Committee. Also, Lynn has given 4 Technical Papers at the Annual STLE meetings in the Power Generation Section regarding Phosphate Esters in Turbines and co-authored a NACE (National Association of Corrosion Engineers) on "The Use of the Scanning Electron Microscope in Failure Analysis".

11:15 'Energy Efficiency in Ontario'

Kim Krieber, Business Advisor, Channel Partner Services
Independent Electricity System Operator (IESO)

Abstract: Kim will be talking about Ontario's electricity conservation landscape, including the Save on Energy incentive programs, which help homes and businesses use energy efficiently and save money.

Bio: Kim Krieber is a business advisor at the Independent Electricity System Operator. She is responsible for supporting supply chain members across the province as they offer, recommend, and implement energy efficient solutions for their customers. Prior to joining the IESO, she worked for the Ontario Power Authority where she was a key account manager to transmission-connected customers, such as those in the mining, steel, and petrochemical sectors. Kim began her career in technical sales at the Canadian distributor of an American specialty oil and grease manufacturer.

11:45 Panel Discussion:

12:00 Wrap Up: Jim Arner

Lunch: Buffet in Auditorium

1:00 - 2:30 Optional Kinectrics Tour: TDT labs (high voltage and other electrical), the chemistry (petroleum) lab and the EQ labs (nuclear environmental qualification and seismic shaker table labs).

Cost: Lunch and refreshments will be provided. Presentations can be downloaded. No payment is required until the Nov 14 check-in but must preregister. **Payment can be made in advance by check or calling in credit card number. Payment at the door can be by cash, check or credit card. Credit cards accepted are Visa and MC.**

Members of STLE, PEMAC and ASRAE (Also, Kinectrics and OPG employees)	\$89.00 before Nov 1 \$119.00 after Nov 1
Nonmembers	\$120.00 before Nov 1 \$140.00 after Nov 1
Students and retirees	\$25 before Nov 1 \$45 after Nov 1

A buffet lunch is optional but included in the price.

Presentations will be available from the Toronto Section website for downloading.

In addition, there will also be an optional tour of the Kinectrics. They are a leading testing, inspection, certification and consulting company with over 25 unique laboratory and testing facilities. With an expertise built on over 100 years of experience, their award-winning team of over 400 engineers and technical experts is recognized worldwide. See www.kinectrics.com.

The STLE Toronto Section uses events like this to help spread the word and also to raise funds. These funds are used to support the section activities and to provide donations and assistance to local universities and colleges. No money raised goes to salaries.

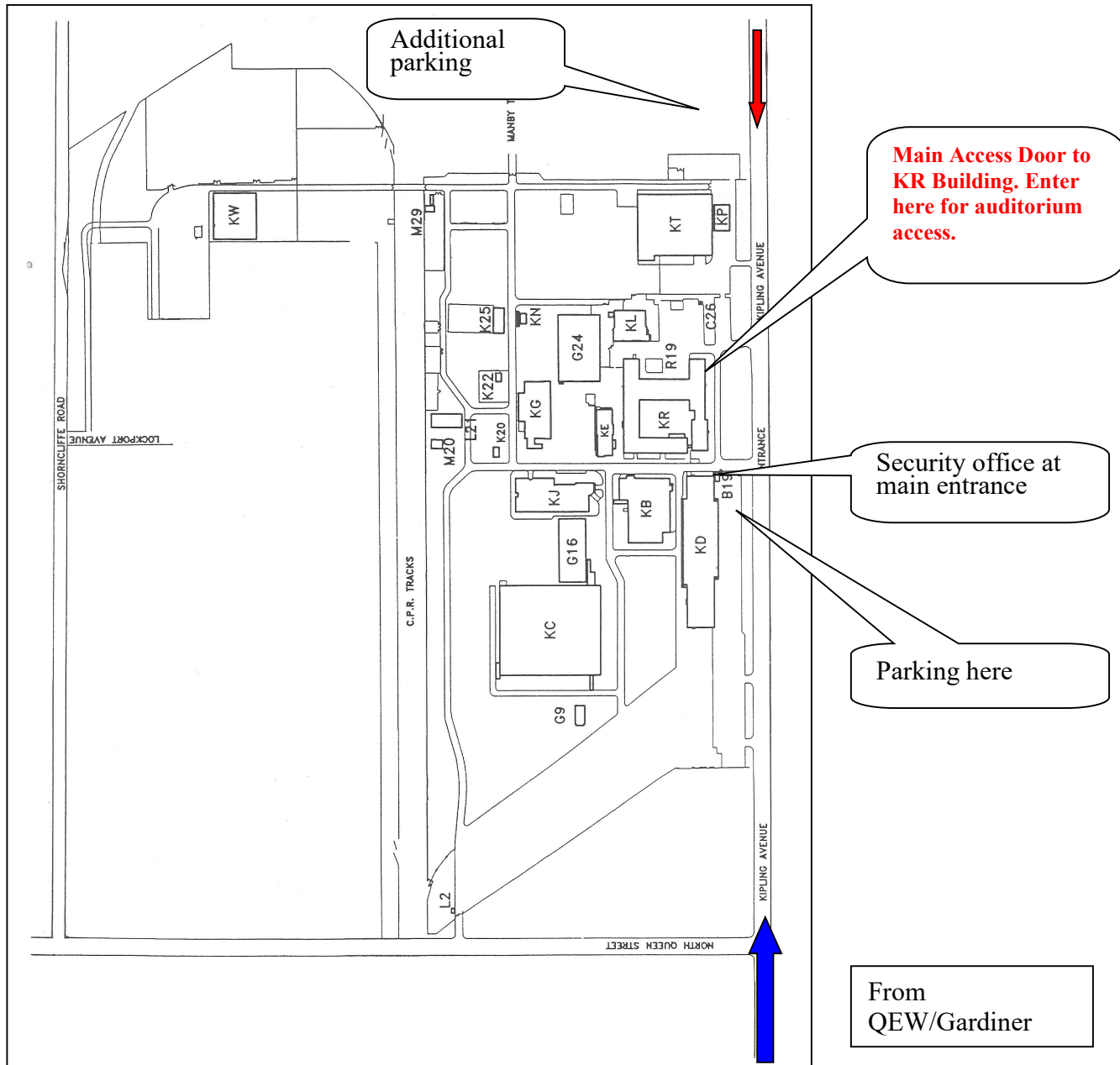
Program can be subject to changes for events outside our direct control.

KR Auditorium

800 Kipling Avenue
Toronto, Ontario
M8Z 5G54

NORTH

From Kipling TTC/GO



TTC Kipling Subway / GO Train Station

Complex is 5-10 minute walk south on west side on Kipling.

Driving Directions:

Exit to Kipling north from QEW/Gardiner.

From 401 take 427 south to QEW/Gardiner West and then Kipling north.

STLE Toronto Section Workshop

November 14, 2018

Name: _____

Company: _____

Address: _____

E-mail: _____

Phone: _____

Will you stay for lunch? ☐ Yes ☐ No

Do you plan to take the tour? ☐ Yes ☐ No

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Payment: ☐ Invoice Before Workshop ☐ Check ☐ Credit Card (MC, Visa)

Registration fees includes attendance, coffee/tea/soft drinks and lunch.

Please complete this form and phone, e-mail or mail to:

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