Written by Ken Bannister, Contributing Editor
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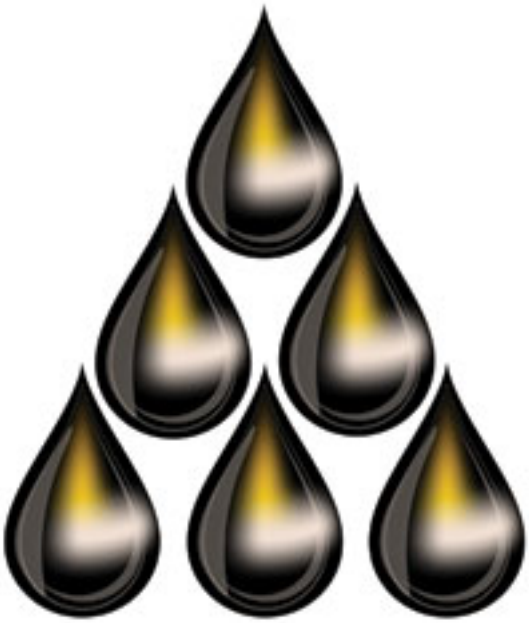


Certification matters. The more certified lube professionals there are, the stronger the 'voice' of lubrication will be throughout industry.

The topic of lubrication can be easily divided into two specific areas, 1) the science and chemistry of lubricating materials, and 2) the practical application of lubrication knowledge and materials to effectively reduce the friction, wear and energy loss of moving parts. *LMT*'s mandate is to inform its readers, from those who are highly experienced to those who are less so, not just about what's new in the world of lubrication, but about the basic concepts and principles that guide GLP (Good Lubrication Practices). These fundamentals—*or "Elements"*—are what make up the International Council of Machinery Lubrication (ICML) Domain of Knowledge. They're also the focus of a new 12-part series that kicks off in this issue.

Keep in mind that the articles in this series aren't meant to replace requisite formal preparatory training. The goal is to introduce (or refresh readers on) the fundamental knowledge requirements for working in a best-practice lubrication environment, spur them to pursue a certification path (if they haven't already) and give the lubrication community a stronger voice in the world of asset reliability.

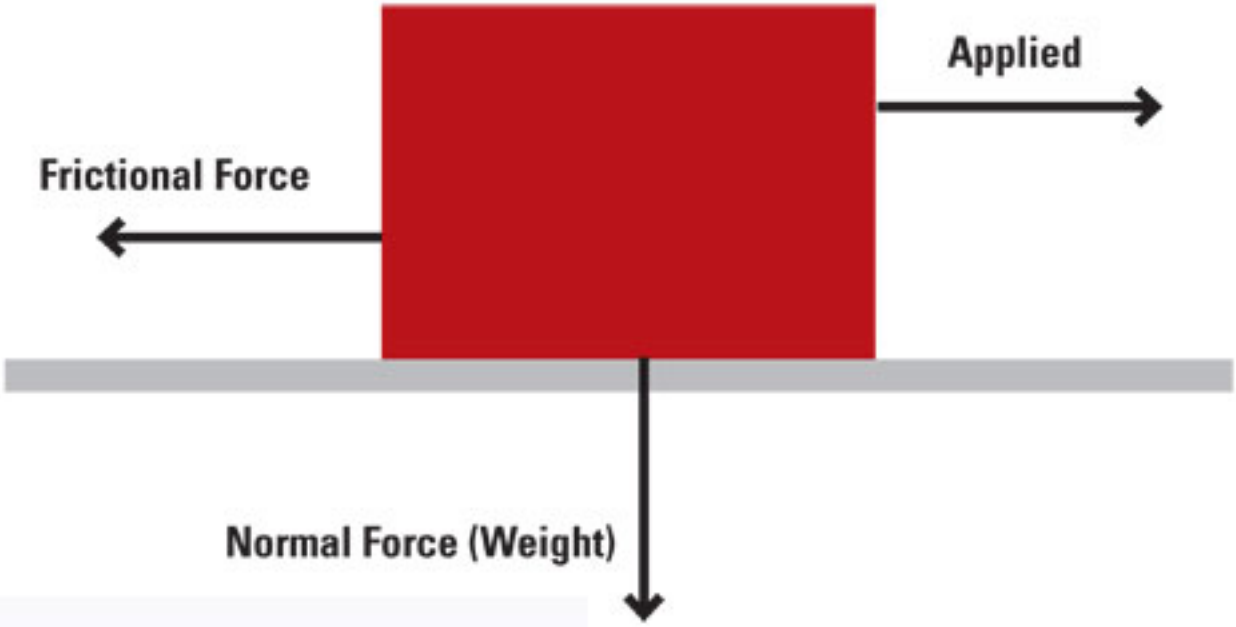
Friction is why we lubricate

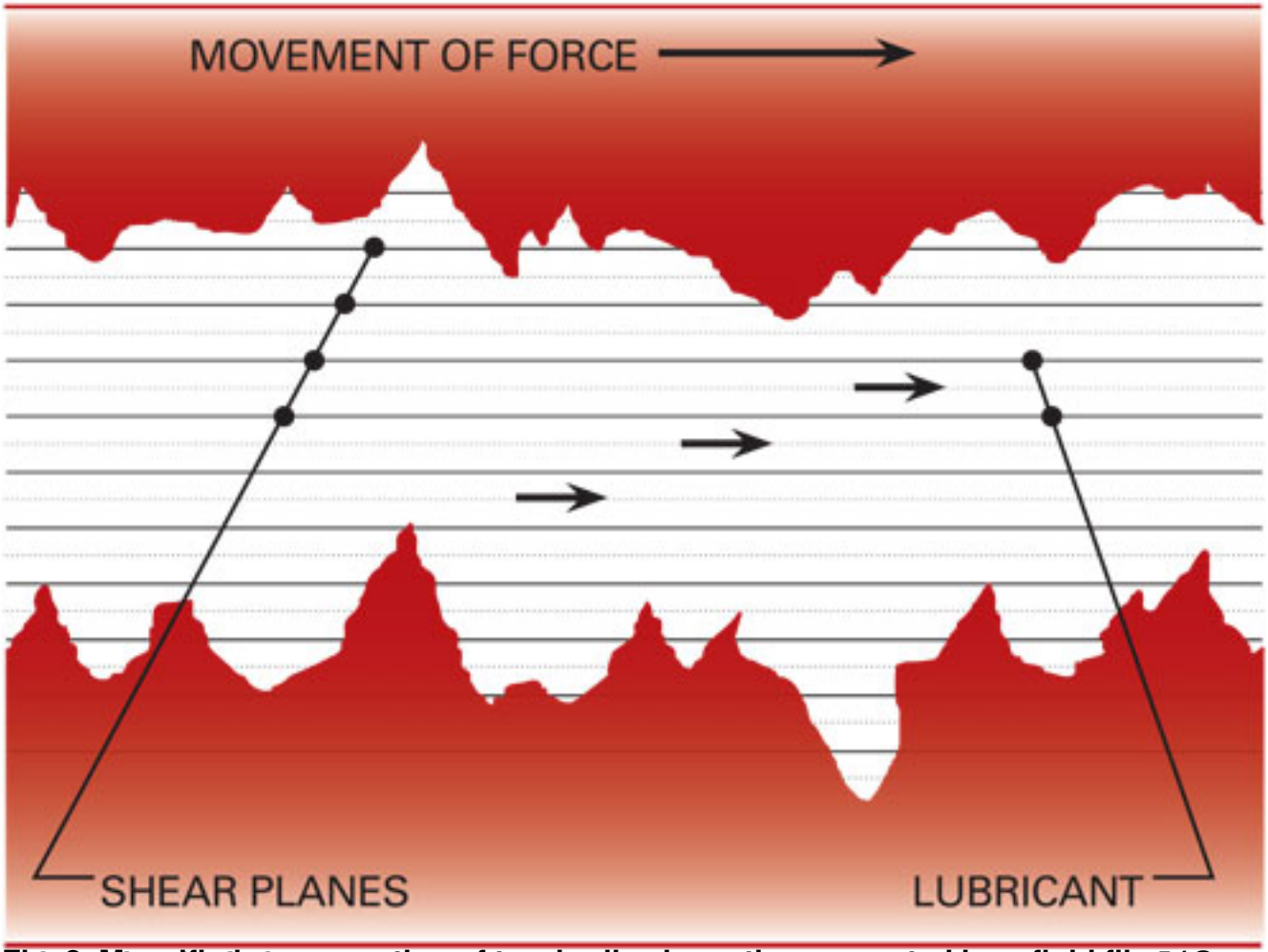
The word “tribology,” coined by Sir H. Peter Jost (see Sidebar below), comes from the Greek word *tribos,* meaning “to rub,” and is used to describe what happens when two hard surfaces move over one another. The resistive force causing this “rubbing” action is known as friction, and was first recognized by Sir Isaac Newton in his laws of motion as an external force to motion.

Webster’s describes friction as “the force, which opposes the movement of one surface sliding or rolling over another with which it is in contact.” Simply put, friction is the resistive force that retards motion. And it’s not necessarily a bad force: We employ frictional forces when we want to intentionally slow a body in motion (i.e., retarding the movement of a rotating machine or automobile by applying a rough and soft consumable braking material with a high coefficient of friction against a smooth, hard [less-consumable] surface).

Friction becomes an undesirable force when it robs energy from an applied force used to intentionally move an object. Frictional forces have, in fact, been estimated to consume over one-third of the world’s energy. When ignored in such cases, friction causes heat, wear and, sometimes, catastrophic failure of the moving body. To understand friction we must recognize that there are two unchanging fundamental laws that govern it:

- Friction varies directly with load.
- Friction is independent of surface area.





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A Brief History of Lubrication Certification

In the mid-1960s, a groundbreaking study by the British government (under the charge of Sir H. Peter Jost) quantified the tangible effects of poor lubrication practices on the nation's gross national product. That study, now referred to as the ***Jost Report***, introduced us to the word “tribology” (the science of lubrication, friction and wear). For the first time, lubrication was recognized for its role as a bone fide science in the area of asset reliability, and for its fiscal impact on industry when practiced poorly.

Once awakened, sleeping giants take time to stir and get moving. Unfortunately, it wasn’t until the turn of the new millennium that a heightened awareness surrounding the field of lubrication began to emerge on a global scale. This has been emphasized through industry’s rapidly growing recognition of—*and demand for*—certified lubrication specialists in the practical application and lubricant diagnostic/analysis fields.

Although there are no specific apprenticed trade designations for lubrication specialists, over the past two decades many of the world’s leading lubrication experts and proponents (including scientists, engineers, consultants, suppliers and practitioners) have worked to develop certification programs backed by a body and domain of knowledge. Today, there are three lubrication certifying bodies: STLE (Society of Tribologists and Lubrication Engineers); ICML (International Council of Machinery Lubrication); and ISO (International Organization for Standardization).

Originally designed for engineers, the STLE Certified Lubrication Specialist (CLS) program has been in place since 1993. ICML has developed two certifications for “hands-on” lubrication practitioners: the MLT (Machine Lubrication Technician) and MLA (Machine Lubrication Analyst) designations.

A relative newcomer, ISO’s lubrication certification program has chosen to adopt the ICML model and, in fact, has collaborated with the ICML to use its body of knowledge. Participants who attend the requisite preparatory formal training associated with ICML certification are also eligible to take corresponding ISO exams (upon payment of the appropriate examination fees).

Of these three programs, ICML’s (currently offered in nine languages) has issued the most certifications around the world. For information on the ICML program, please visit: www.lubeco

uncil.org .

For more info, enter 02 at www.LMTfreeinfo.com