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Visiting a classic car show recently, I was stopped in my tracks by a magnificent stainless steel DeLorean, the car immortalized in the *Back to the Future* movies starring Michael J. Fox in the 1980s.

This particular vehicle was really special, as the owner had added a "Flux Capacitor" unit just like the one in the movies! I remember watching the original movie well over 20 years ago and wondering, at the time, how life would be in the near future.

Today, I see that many of us have become a lot older and grayer, but that the maintenance industry really hasn't changed much at all—*except that more is expected from fewer people*. I sense this trend will continue to grow as more and more maintainers reach retirement age.

As machinery design has evolved, so has the maintenance skill set requirement relative to the design of buildings, systems and equipment. Thirty years ago—*and beyond*—most equipment employed simple designs incorporating clockwork-controlled basic mechanical and electrical components that could be easily adjusted, modified and repaired by any competent maintenance department. Today's equipment, however, employs infinitely more complex computerized electronic control systems, with lighter-built, modular sub-assemblies that are not adjustable or repairable—
just replaceable
. Virtually every maintenance department now has a plethora of high-tech diagnostic tools whose primary purpose is to detect, trend and predict potential, and hopefully stave off the need to interfere with equipment operation.

Fifty years ago—*and beyond*—we hired craftsmen who could manually pour and scrape a bearing to fit. Then, as bearing technology advanced, we hired tradespersons who replaced, shimmed and aligned newer designed rolling element bearings. With the advent of the latest style of "drop-in sub-assembled bearing cartridge" design, fitting can now be achieved by a semi-skilled worker who is able to follow the manufacturer's assemble-and-replace instructions. Future plants are likely to only require the services of a good diagnostic technician and a number of semi-skilled associates to replace the "pick-and-place" sub-assembly modules—
a scenario that is already evident in the automotive-repair industry
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With over 50% of the current maintenance tradesperson workforce set to retire in the next 5-10 years, the closing of many vocational schools and apprenticeship programs in decline, today's personnel-challenged maintenance industry with its already diminishing pool of well-trained skilled-trades workers is about to face even more serious staffing problems in the very near future. One thing we can count on going forward is that mechanical equipment will still fail for exactly the same reasons it did 100 years ago: lack of cleanliness and ineffective lubrication practices.

Understanding all this, we can mitigate a high degree of maintenance risk and considerably increase reliability around a facility simply by implementing both a "back to basics" preventive program that focuses on effective lubrication practices, and a "contamination-free" program that will help alleviate numerous electronic and electrical problems. By doing so, we can be confident that a trip "back to the future" will credit a "back-to-basics" approach for our maintenance success.

What about your future and that of your operations? Good luck! **LMT**

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