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World-Class Simplicity, a term that we coined in 1996 to describe what a top NASCAR Race Team was doing to achieve the highest levels of performance and reliability, is based on the teachings of a 14th century English logician and Franciscan monk, William of Ockham (1285-1349).

Known as "Occam's razor," these teachings stated, in part, that the explanation of any phenomenon should make as few assumptions as possible. This principle also is known as "the law of parsimony," "the law of simplicity," or just plain "keep it simple." Interestingly, William of Ockham's 14th century thinking and writing, considered to have laid the groundwork for modern scientific inquiry, makes sense for today's maintenance and reliability.

Our world of maintenance and reliability, manufacturing reliability and lean production systems often becomes unnecessarily complicated, confusing, fragmented and costly.Countless attempts to improve performance are based on opinions, assumptions and gimmicks rather than objectivity, evidence and facts. Improvement programs requiring "a leap of faith" frequently prevail over fact-based, simple solutions. Too often, complex solutions are developed to address relatively simple problems ("accidental complexity"). But, sometimes "simple solutions"will not adequately solve complex problems as well as more complex solutions ("essential complexity").

Now is the time to seek "world-class simplicity" as a response to exponentially accelerating global competition. In an era of growing skills shortages, nations that embrace "world-class

simplicity" of their advanced manufacturing systems and equipment reliability rise to the top.

Our ability to anticipate, innovate, think outside the box, be flexible and respond quickly have made our nation and economy strong.Yet, today, foreign competition and outsourcing to offshore manufacturing are all too common. More and more companies, however, are discovering (to their great dismay) that outsourcing is NOT a benefit when delivery times are slower, domestic inventory levels are higher, defects are more difficult to resolve and lead time to make improvements is huge and costly. *Accidental complexity?*

We have to get back in step with our heritage of a well-trained workforce, experienced leadership, focusing on results, using the right tools and doing things right the first time.History shows that we know how to do it.We just have to make a conscious effort to do it now. And we CAN do it!

Why is it that an American workforce in 27 foreign auto plants and hundreds of suppliers operating in the U.S. can out-produce the traditional "American" auto makers and suppliers? Why are so many of our traditional manufacturing plants over-capitalized and underutilized, operating flat out, but only at 50% efficiency due to quality issues, unreliable equipment, inefficient work methods, old work rules and complex processes?

The answer is itself quite simple. The principles underlying the Toyota Production System, Lean Manufacturing, Total Quality and Total Productive Maintenance are ALL based on the concept of "world-class simplicity"-*not on assumptions or accidental complexity*.

Beware the "Tool heads," those purveyors of tools, silver bullets and cookbook approaches to reaching world-class levels of performance. If proposed solutions require a leap of faith and are not focused on fast and sustainable results, back away.

Assess the facts. Define the problem. Seek the simplest solution–*then try it*. Measure the results. If it works, learn from it. Leverage the new solution and the processes that got you there to solve other problems.

In other words, if you hear hoof beats, think horses, not zebras. Likewise, when your competitive advantage slips, look at your maintenance, reliability and manufacturing processes, not offshore outsourcing. That's "*world-class simplicity!*" **MT**