

## Get Where You Want To Go: Operator-Driven Reliability

Written by Heinz Bloch, P.E. Process Machinery Consulting  
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**ODR is not an overnight trip. Success requires all parties to be using the same road map.**

For decades, maintenance professionals have advocated and used information management systems, planned maintenance activities, emphasized preventive maintenance and assessed equipment utilization to eliminate non-essential assets (reducing numbers of equipment). These professionals also have been aware of the need for operator and mechanic training and, to some extent, decentralizing asset responsibility. Accordingly, they have been striving to build operator-ownership of equipment through basic care.

That said, specialists in asset management and reliability have spent years in various relevant pursuits. Over the past decade, these pursuits have been joined by an approach called Operator-Driven Reliability, or ODR. Yet, while commendable in its aims, ODR is not capable of standing alone. It must be supported by related endeavors that involve management philosophies and “buy-in” from all levels—including those within maintenance. In and of itself, ODR is not an off-the-shelf approach that can be implemented on short notice.

### **Cooperative efforts needed**

Any write-up or technical presentation would be incomplete if we neglected to recognize our limitations. Thus, we know that in the “real world” even the most competent reliability professional is rarely in a position to implement best practices without the cooperation of others. There always will be a management component involved. Regrettably, others (including managers) sometimes pursue only short-term interests. Short-term interests are destined to be repair-focused, whereas long-term interests are (generally) reliability-focused.

Consistently achieving good performance and high profitability requires long-term pursuits. It calls for industrial enterprises to totally abandon their repair focus and unequivocally embrace

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the reliability-focused approach. To what extent this focus has been transferred or carried over into your equipment repairs can be determined by carefully reading the following point-by-point summary based on the philosophy of W. Edwards Deming.



It is especially important that modern, reliability-focused plants be consistent in adhering to a well-formulated or even formalized management philosophy. Continually adhering to such a philosophy is an indispensable requirement if tangible and lasting equipment reliability improvement results are expected from ODR.

### **Acknowledging Deming's work**

Adapting the thinking of W. Edwards Deming, the noted American statistician whose teachings on quality and profitability were often neglected at home, but venerated in post-WW II Japan, we give the following experience-based advice to the manager whose facility would profit from equipment uptime extension and failure risk reduction. It is a guide that not only will strengthen your traditional reliability efforts, but also help lead you to where you want to go in your journey to Operator-Driven Reliability. While these points, in various iterations and combinations, may have appeared previously in this publication, their importance can't be overstated. Suffice it to say, for reliability-focused professionals, it's impossible to consult this type of "road map" too often.

- Create constancy of purpose for improvement of product, equipment and service.

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Implement whatever organizational setup is needed to move from being a repair-focused facility to a reliability-focused facility. Do this by teaching your reliability workforce to view every maintenance event as an opportunity to upgrade and letting the most competent equipment repair shop assist in defining these opportunities.

- Take time to determine if the OEM or the competent non-OEM repair shop is in a better position to assist you in achieving plant uptime and profitability goals. Realize that this determination may well be outside the normal limits of a purchasing group. In fact, a Purchasing Department may have made it a practice to award contracts only on the basis of tangible first-cost and schedule commitments.

It follows that your reliability professionals may need to be tasked with the development of rigorous specifications that are driven only by safety and the ultimate life cycle cost. These professionals may have to be given a written role statement so as not to leave any doubt as to the nature of their involvement. Also, this role statement needs to be disseminated to other job functions. It is well known that the expectations of “others” as to the duties and achievements of reliability professionals may have to be corrected.

- Never allow costly experimentation by anyone in your workforce. Do not let them “re-invent the wheel,” when there is proof that a good technical text or an experienced mentor or shop could point the way to a proven solution.

- Unless your problem pump or other machine is indeed the only one in the world delivering a particular product from point “X” to point “Y,” insist on determining the operating and failure experience of satisfactory (!) machines, pumps or mechanical seals elsewhere. Never accept an “alliance” partner’s claim that disclosing such experience violates ethics or the law, or that this information is in any way confidential and proprietary.

- Upgrading must result in downtime avoidance and/or maintenance cost reductions. Insist on being apprised of both feasibility and cost justification of suitable equipment upgrade measures.

- Adopt a new philosophy that makes mistakes and negativism unacceptable. Ask some serious questions when a critical process machinery repair is done incorrectly three times in a row.

- Ask the responsible worker to certify that his or her work meets the quality and accuracy requirements stipulated in your work procedures and checklists.

- Again, end the practice of awarding business to outside shops and service providers on price alone. Ask your reliability staff to use, acquire or develop, technical specifications for critical or high-reliability components. These specifications must be used by your Purchasing Department. Accept less costly (or “cheaper”) substitutes only if it can be proven that their life-cycle costs are lower than those of the high-reliability and lower failure risk components specified by a competent reliability professional.

- Constantly and forever improve the system of maintenance quality—and improve the responsiveness of your outsourced services providers. You must groom in-house reliability specialists competent to gage the adequacy of all maintenance quality and of the various outsourcing services.

Insist on daily interaction of process/operating, mechanical/ maintenance, and

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reliability/technical workforces (the “PMT” concept). Institutionalize root cause failure analysis and make joint RCFA (root cause failure analysis) sessions mandatory for these three job functions. Do not accept this interaction to exist via e-mail alone!

- Institute a vigorous program of training and education. As an example, for decades, the industrial mechanic/machinist has been allowed to find and replace a defective pump component. Unfortunately, he or she has thus become a skilled parts-changer and many machinists, mechanics and technicians have become entirely repair-focused. Train your engineers, technicians, maintenance workforce—and operators—to become reliability- focused! Let a competent repair shop assist you in achieving these training goals and do accept the premise that repair-focused plants will go out of existence.
- Require your reliability professionals to develop their own training plans. Insist on stewardship and on reaching the training goals. Subsidize this training!
- Institute leadership. Give guidance and direction. Impart resourcefulness to your reliability professionals. Become that leader or appoint that leader. The leader must be in a position to delineate the approach to be followed by the reliability professional in, say, achieving extended pump run lengths or general equipment uptime extension—the subject of thousands of articles and hundreds of books!
- Drive out fear. Initiate guidance and action steps that show personal ethics and evenhandedness that will be valued and respected by your workforce.
- Break down barriers between staff areas. Never tolerate the ill-advised competition among staff groups that causes them to withhold pertinent information from each other.
- Eliminate numerical quotas. No reasonable person will be able to solve 20 elusive equipment problems in a 40-hour week. If a problem is worth solving, it’s worth spending time to solve the problem. Until you have groomed a competent and well-trained failure analysis team, consider engaging an outside expert on an incentive-pay basis.
- Regardless of who’s involved— your shop or an outside shop— remove barriers to pride of workmanship. Don’t convey the message that jobs must be done quickly. Instead, instill the drive to do it right the first time and every time. To that end, work with companies and individuals that will utilize the physical tools, written procedures, work process definitions and checklists found at Best-of-Class companies. To the extent that these tools and procedures would benefit your company, take steps to make them available to your staff.
- Institute both fairness and accountability at all levels. As a manager, take the lead. Eliminate roadblocks and impediments to progress. Realize that what you are trying to do—increasing plant-wide equipment MTBF— has long since been accomplished elsewhere. You, too, can achieve this goal.

In summary, then, accept the fact that the quality and dependability of any business entity or shop is only as good as the knowledge base its personnel will allow. The various aspects of people based quality and dependability pertain to contractors and inhouse staff—that means everybody, including engineering, maintenance and operations. They pertain to your shop, just as they do to the OEM and non-OEM shop. This knowledge base changes over time; therefore it needs to be periodically re-assessed.

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In a recent series of articles, we used the term “Competent Pump Repair Shop” (CPRS) to indicate that your diligent efforts to find and work only with the competent ones will be rewarded. Once you have taken steps to work with diligent and capable outsiders, all of your reliability initiatives—including those related to Operator-Driven Reliability— will bear more fruit. **MT**

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