EDITORIAL

Have a Problem? Just Hire an Expert

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One of my pet peeves and topic of past S&V editorials is the philosophical deterioration of how companies deal with problems involving plant operations and/or products. Having professionally survived several so-called recessions, discouragingly starting with the year of my graduation, I observed a simple commonality – bad economic times dictate that problems be fixed in a timely fashion. Think about it . . . companies cannot afford to prolong problems by jousting with windmills or reinventing the proverbial wheel. Plant effectiveness and customer happiness are individually paramount. Problems have to be corrected. Plants have to run. Products have to be shipped. Customers have to be happy. And so they were.

Under the current state of global affairs, problem resolution seems to be philosophically different than in the past – vastly different. Many companies appear to be faced with so many issues at so many levels that product problems suddenly pale compared to the prospect of corporate survival. Bad times reveal business vulnerabilities. Really bad times expose fatal flaws. Some troubled companies are so overwhelmed and are so poorly run that the highest levels of management are willing to roll the dice and knowingly ship inferior products. Peanuts, for example. Bad decision!

When caught in their dastardly deeds, corporate fall-back is generally to first act confused, followed by blame shifting, all while citing reassurances that some sort of acceptance test has been passed. While this may be loosely construed as being "technically" true, excuses may be patently false when given the fact that the product mysteriously passed for no apparent reason only after a series of repeated failures. Or that it illogically passed because the paint color was changed, or possibly passed because someone waved the proverbial dead chicken in a gesture of ceremonial coronation. Let the die be rolled, ship it, and so they do.

Aside from a desire for plausible deniability, if a more engineered approach is taken, the first step is to accept that the problem does exist. Subsequent identification and correction may necessitate vast engineering resources including use of outside consultants and experts. So, let's embark on a primer of how to find and deal with that outside necessity.

The start of a search could be through review of trade journal advertisements. Possibly you have used the needed consultant before, or maybe you know someone who can give a referral. And yes, there is the Internet. A word of caution about the latter. Be patient. Just because you find a list of potential candidates within five minutes, you do not have to narrow it down and decide in another five minutes. Don't expect that they will be able to start your project last week just because last week was when it should have started. Also, it is a little aggravating to promptly return a telephone message only to find that the project already went somewhere else. Please exercise a little professional courtesy. It is even more aggravating to get a call for the same project when the hastily chosen first group did not exactly work out. Exercise some due diligence in your search. If your goal is simply instant gratification, go buy a fast food burger and some fries. If you need even more gratification, super size it!

When you have assembled a list of candidates, start with a telephone interview. It is best that a responsible engineer do the interviewing rather than a bean-counting purchasing agent. Tell the consultant how you found his name or company. Summarize the nature of the problem, describe your and all other company involvements, your particular responsibility to the project, and the desired project goals, priorities, and time line.

If your problem product is a left-handed widget, it is ok to ask if the consultant has experience in that area. But keep in mind that if you ask, and if he has such esoteric experience, it was probably for your competitor. If that is the case, he most probably signed a nondisclosure agreement and may be cryptic about his experience, or depending on the agreement's wording and the consultant's level of integrity, he may be prohibited from describing any experience.

While prior experience with an esoteric product could be a tie-breaker between credible consultants, lacking such should not be a deal-breaker per se. I say this because failure analysis and troubleshooting simplistically follows such annoying fundamental equations like $m\ddot{x} + c\dot{x} + kx = F\sin\omega t$, $\varepsilon = \Delta x/L$, and $\sigma = \varepsilon E$.

Do not assume that just anyone can simplistically be a consultant, because you also need a secret decoder ring. Without the ring, it's just the same old garbage in/garbage out. Be aware that successful ring holders are known for finding the elusive, proverbial needle in the haystack, and the very successful ones can find the pointy things while the hay is still in the field. It really is magic, really! A Hawthorn wood (magic) wand is also good to keep in the toolbox for very special projects.

Speaking of nondisclosure agreements, some companies demand that a signed agreement be in place before any project details can be revealed. Don't let this pesky bit of corporate bureaucracy cause you to act overly paranoid. If you want to interview a consultant, it is best to have a realistic discussion rather than one that is cryptic and evasive. Is he listening and asking questions, or is he talking and doing a sales job? You can generally gain a feeling if you are comfortable with the consultant in a short interview. A credible consultant will tell you whether or not he is comfortable with your project, especially if he is a little long in the tooth and has lots of gray hair. If he does not volunteer a level of comfort, ask him.

If an agreement is required, please make it fair. The worst agreement I've ever seen took claim to the consultant's entire inventory of intellectual property. Ironic that the company merely wanted a modal test of a simple flat plate. Via the agreement, the company laid strict claim to all aspects of modal testing with no provision for existing technology nor prior knowledge. When questioned, the corporate lawyer acknowledged full awareness of the agreement's ramifications, would not agree to revisions, and said it could be resolved in court. Oh boy! In court!

Well, having a low tolerance for foolishness, and seeing nothing in particular in need of resolution, I could not convince myself to sign such a dim-witted one-sided document, even though the contract could never be enforced and the project had all the technical appearances of easy money. I am reasonably sure that whomever was hired for the test was jovially laughing aloud when he signed. True, true, but keep in mind that stupid documents, arrogant management, and a strong legal department generally indicate you are dealing with a stupid, arrogant, and litigious company. Easy money? Good luck getting paid without going through the proverbial gauntlet of arm wrestling and other bureaucratic hassles!

Speaking of nondisclosure, this does not mean that you should not fully disclose all aspects of your project, especially when specifically asked. For example, when a consultant is smart enough to figure out that something nasty most probably happened and asks if there was an incident, don't respond that this is just a design exercise to see if it is ok to add another coat of paint. Jeez . . . you really want to hire a consultant that thinks this makes sense? Believe me, you will be found a liar when the consultant talks with on-site worker bees and finds out what is really going on. The typical response is to become very *PO'd*! Even though very thorough in questioning about incidents and hazards, some projects found me working beneath 800,000 pounds of stuff that had previously fallen, environments with powders that would tend to explode if looked at cross-eyed, environments that would turn your skin interesting colors or result in strangely, but artistically patterned rashes. One company advised that we should not eat the cooling tower foam that was blowing in the wind, as if that was on the luncheon menu. What he didn't say was it could harbor Legionnaires' Disease. He got a nasty case of it, and I am pretty sure he didn't eat any. Thankfully, we remained disease free. The worst example was a company's admission that about six contractors are killed every year. They expressed it just like saying it might rain today and looked at it as the cost of doing business. Personally, when something like this happens, I politely decline the job. We're then out of here, and will not return, ever!!!

Some interviewers are compelled to ask for references. Keep in mind that even an incompetent consultant probably has had three successful projects. Furthermore, be aware that if your project is successful, your name will be placed at the top of the list and it will be you receiving calls in the future. Always humorous is the maker of the esoteric left-handed widget that asks for references from similar projects, all the while wanting to keep theirs super secret. Go figure.

Another developing common trend, and one that is personally annoying, seems to be one of companies wanting to hire a "technician" seemingly under the assumption of cost savings. Believe me, it is ok if *your* company wants to design a test and hire a technician to collect data for *your* interpretation. On the other hand, do not hire a consultant, use him as a technician, then "require" the consultant to assume responsibility for *your* bad decisions, interpretation, conclusions, and implemented fixes.

I hope this will be helpful to at least one person. Have a great day!!!! S/V

P.S. – Who is John Galt?

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