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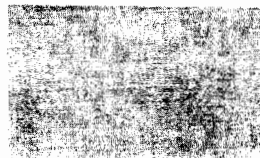
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XVI

Value Engineering and the Specialty Manufacturer

JACK H. SCHEINMAN

Willor Manufacturing Company
Bronx, New York

By the time I have come upon this scene, you have been thoroughly indoctrinated as to what Value Engineering is: the internal problems inherent in its introduction into the framework of your companies: and why it is so urgently needed. These facets, among others, have pretty much given you the why and the what and the how of Value Engineering. Most of us, however, have been brought up on the definition of value in conjunction with what are we getting for what we are spending.

We, all of us, are not in a business of whims or fashions. Ours is a functional type of enterprise. Its success is dependent solely on performance. If what you are making does a better job or does a job better, that is the important fact. It is on that basis that we exist or fade off into an oblivion.

Performance does not begin on an assembly line. It begins in the remote fastness of someone's brain. It then moves out to the furrowed brow. Is then translated to paper: first, white and then blue. A prototype is made, remade and then finalized. And that is the last time our unit is one composite until production equipments come off the production line.

When the paper has turned from the white stage to the blue, engineers of great book learning and of various degrees of practical knowledge, usually ranging from slight to infinitesimal, descend upon the child and dissect it into its myriad of components. And in this complex, highly specialized era it becomes one big walloping glob of myriad. Each one of the components is made in a factory which is especially organized and staffed to make it better than non-specialists, since this is the only conceivable reason to exist.

So that every day, of every week, of every year, these specialty manufacturers are breeding a whole new race of ulcers battling to learn every intricacy of their science; to eliminate "bugs" which constantly poke their heads through anticipated no-problem areas; to be alert to change and improvements. It is to these people that the results of the dissection come. And they come as accomplished facts.

Now, we must remember that the equipment we are talking about is really and truly the sum of its parts: both in terms of conjunctive utility and price.

The bulk of my training has been in the field of metal fabrication, particularly in sheet metal. I have spent upwards of 18 years at it. In the course of this period I have tried to learn the function of presses, brakes, shears, and other pertinent equipment. Early in the game I determined the irrevocable fact that presses come down and then they go up. The same inexorable fact applies to brakes and shears.

Then came the business of short runs and long runs: dies for different functions; continental tools; Whistlers; and Wiedemanns; when a run is economical and when it isn't; what are the limits of what; how do I meet a decimal tolerance on a formed piece; when do I draw and do I hydroform, or use Kirksite or steel dies. Without getting silly about it, these are enough to indicate the fact that it is not just a thing that you develop in a classroom or trotting through a shop dreamy-eyed for 20 minutes just before graduating college.

What is more, I am now only six weeks behind on my trade magazines and I have a pile of data on new equipment that I hope to get to before the year is up. And then comes along a round-shouldered mailman trudging bravely through all kinds of weather on complaining arches and brings with him, among the bills, a package or packages of blueprints.

Now, up to the point where the Value Engineer has entered the stage, the prints were the result of the work of the design group. Honest attempts at evaluation were made. But I think we can all admit that the progenitor is the last person in the world you would ask for an objective opinion.

Let's get back to our mailman who has just been relieved of his burden. The prints we now look at are unquestionably what is wanted and any deviation from the specifications on the prints is rejectable without recourse. The easiest thing is to bid on the prints, and if you made a mistake on the bidding and got the order, you make that piece exactly as the man said.

Well, I do not think that that makes much sense. You wouldn't permit a surgical diagnosis and plan of operation by a person who never had a scalpel in his hand or see a psychiatrist (present

company excepted) who never underwent psychoanalysis. How then can you send a specification to a purported expert without calling him in for consultation. Your doctor calls in a specialist; your lawyer calls in a tax man; your dentist calls in an exodontist.

Here is where we believe the Value Engineer can save his company real money, maintain or improve the quality of his equipment, and avail himself of a huge reservoir of engineering and scientific knowledge. For purposes of example let us take the mechanical parts of your product since that is a subject with which I am not as unfamiliar as I am with others.

With their eyes in the heavens, spurred on by the flight of genius, the design has come into being and it is now performing beautifully. As with most prototypes, the components are close to perfection but extemporized and made to fit. Because of lack of time or a reluctance to disturb the serene majestic perfection of the unit, the prints emanating therefrom duplicate the model. Perhaps a change is made here and there, but nothing objectively analytical. I think that it has been well recognized here, subjectively or objectively, that the Value Engineer steps into the picture with his microscopic eye focussed for saving.

We recognize his interpolation at this point because the design group has not been conditioned to look for savings, but rather for performance. We also realize that the design group are not omniscient, and are not the full well of knowledge on every mechanical and electrical component that goes into the equipment. And we would like to feel that the Value Engineer can, with his well-conditioned microscopic eye, pick up the sore spots intuitively. We also get the erroneous impression that the Value Engineer knows more about more things than any other type of Engineer. This is unfair and it is an unwarranted assumption.

Actually, the Value Engineer is a diagnostician. He discovers where he believes function can be maintained and economies engendered. He checks, he probes, he evaluates. But like our doctor friend, once he has localized the problem, he ought to call in a specialist.

At this juncture we can bypass the parables and the generalities and get down to specifics. The specifics deal with those areas where you and your specialists can team up. Every firm has suppliers who have been performing well for them and for whom they have a high regard.

Let us say, for example, that the equipment under analysis has a number of chassis, panels, and weldments. Each has its own need and each indirectly or directly complements the other. You could unquestionably call in these vendors and show them what you contemplate, the quantity involved and what you are trying to achieve. You will, in conjunction with these specialists, find

decimals where fractions will do. You will find that holes are called for which are a miniscule over or under punches or dies in the vendor's stock and which could be used. You might find material specified which are mill specials, but which can be replaced by materials which can do the job and which don't cost a king's ransom to buy.

In innumerable instances the vendor's suggestions will not be adaptable. But in many cases they will. And in each case of the latter nature, you will save pennies and dimes and dollars. You could not possibly know everything that the specialists know and he does not know what to suggest until you lay your problem or your preliminary concept before him. Take an instance like a chassis, develop the method into die castings, screw machine parts, deep draws, transformers, terminal boards of special types, and so on. Just get a few ideas and recommendations on each and you have a real cliff to push your costs over.

This cannot be done by imprinting your bid request with the legend "should you have any suggestions as to how savings can be made, please advise." Usually the engineer won't pay any heed to what you tell him or you (the bidder) won't tell him because you are fearful of resentment (and believe you me, this is a whopping big point), or you won't tell him because you have not a realization of the big picture. Several elements introduce themselves which need a little clarifying since they are not operating from Cloud 9.

1. The Value Engineer may feel that he is obligating himself by calling in a supplier. This can be mitigated by selecting actual vendors and by making clear the condition of your request. Furthermore, businessmen spend a good deal of money advertising and promoting. It is thus hard to visualize a sensible one who would want to miss an opportunity of laying his talents on the line.

2. A certain amount of discretion must be used in not taking advantage of your vendor's time. Do not call him in on anything half-baked or trivial. Make certain it is a real problem or that you have several real problems. If our Value Engineer shouts "Wolf" too often, the response will suddenly cause him a sense of loneliness and frustration.

3. Your design and production engineering people should be prepared for the supplier's visit. A feeling could easily be engendered where resentment would rule and constructive effort left stranded behind some figurative or literal pouting. Furthermore, just because he (the vendor) is your guest does not mean that he is to be fawned over or that every recommendation he makes must be accepted per se or rejected per se. Analyze, use in total or part and/or discard.

The more allies you are able to rally, the greater will be result, the lower the ultimate cost, and the stronger your position.

5. To supplement his visit you should request a listing of your vendor's tools and dies and special equipment. You will find that prints can be drawn around these dies with little effect on anything but the price.

Remember, too, that you are only attempting to engender a degree of mutual understanding. Your vendor is not a member of your organization. He has his own subjective outlook on life. And this outlook when stripped of its outer coating revolves on the theme of whether his relationship with you can show a profit. To be honest, that is the only reason you want him. Efforts have been made which were, to my mind, clothed in the raiments of potential failure.

One organization attempted a periodic series of meetings with the theme of "Teamwork." They had all the flavor of a college rally and you had the uneasy feeling that at any moment a cheerleader would spring up and ask the audience to give three rahs for molybdenum. Many firms continue to ask on their bids for suggestions. Only the newest supplier would be naive enough to take the trouble.

Lest we belabor the points too assiduously, let us say this. You are advertising for engineering and technical people constantly—and you need them. In matter of fact the devices you turn out are ingenious and noteworthy, and you should feel good about it. But you have thousands of rivers flowing into the main sea which is your equipment. The rivers find their release in the sea. The sea fails to exist without the rivers. The specialty manufacturer needs you for his very life and you do need him desperately.

With intelligence and discretion and foresight you can adroitly merge your thoughts and your efforts to do a better job for less money with less fuss and more warmth of understanding.