

TO THE HONORABLE GEORGE FOUCH
MEMBERS OF GOVERNMENT AND OF INDUSTRY

Make no mistake --- in Value Engineering is significant new technology --
not a wrap-up under a new name.

The DC 6 is not a new name for the DC 3.

The jetliner is not a new name for the DC 6.

Although they have much in common and common objectives, each is a
different creation --- different in operation --- different in results.

Likewise, Value Engineering is a new system, a new way to more efficiently
accomplish a familiar type of results.

If the jetliner still looks to you like the DC 6 -- get a closer view. You will
then understand the difference.

If the path of incentive value engineering contract changes looks hazardous,
remember well that every large success in either military or business strategy
was based in part upon knowledge, in part upon faith, and filled with the pain
of birth.

History records the doubts and the mental pain which preceded the construction
of the steel Monitor and the Merrimac, and their surprising record of effectiveness.

Today we are a part of the uncertainty, and the stress which precedes the
evolutionary use of the Value Engineering approach.

You have learned not to act on proof alone --- proof is sometimes fraudulent.
You require proof of results, plus understanding, in your frame of reference.

If this meeting provides sufficient proof and understanding --- you will act.
If it does not, search out more. As your professional witness, I tell you that the
depth of the Value Engineering technology goes far beyond the obvious.

Use of Value Engineering is change. Change is your job. Change is confusion, irritation, discomfort, distress.

I am often asked: "We see the benefits of the value engineering system but where and how do you do it without disrupting the work of our organization?"

I grew up on a farm in Nebraska. We used certain facilities in a small building 100 ft. to the rear of the house. One day my father returned from town with something he called a "water closet." He said: "We'll put this in the house. Think of the advantages when the temperature is 20° below zero and snow drifts are three feet deep!"

But where do we put it? Farm kitchens were large and bedrooms very small. The obvious place was the corner of the kitchen. Mother made a curtain to go around it. This solved basic problems but created others. It was sometimes disturbing. The blend of the kitchen aromas was less than the best and to the sensitive ear the blend of sound with the music of the gramophone was inharmonious.

To minimize these disadvantages, Dad moved it into the large closet in the kitchen. In this closet we kept our farm and barnyard clothes at one end and our "good" clothes at the other. We now had to crowd both into one end which badly wrinkled the good clothes and transferred more of the barnyard fragrance to them.

This did minimize the two problems but it was now frustrating to try to find a needed garment in the over-crowded closet.

This equilibrium of frustrations continued a few years until happily Dad designed and built a new house. Lo and behold! There was room in it for the water closet!

At once all of the compromises and frustrations disappeared, while even more benefits continued.

Organization problems will disappear when the "room in the house" is provided, with "uses" and "doorways" made known.

UNEASINESS ABOUT MEASUREMENT IS UNDERSTANDABLE. How do we safely start?

In utilizing a new tool or process or procedure --- always start first where conditions are most favorable. For example, the first automobile did not start on the muddy up-hill road. It lacked power! The wheels cut into the mud. It lacked control. Furthermore, it competed with the horses. Start on the level road. Later, add tires, add power, add control, pave roads.

Always start small but solid. Plant one acre of potatoes but get good seed, good fertilizer, good cultivation; then plant 10 acres, and then 100.

Start now with good value engineering.

START WITH THE SIMPLEST, PERHAPS HARDWARE OF PREVIOUS DESIGN, WITH PREVIOUS COSTS.

Proceed to the difficult. Put some water flow through the fire hose, then, instead of fearing its gyrations, we can quickly learn how to handle it.

Measurement problems will be progressively solved. A combination of three types of measurement can be used: counting \$, indicators, and expert opinion.

1. Count the dollars

Dollars actually saved

Dollars of changes approved, useful --- on the next order but too

late for this one

2. Indicators

Competence, training, experience, number, and use of men.

Environment factors of organization, procedures, spot on the PERT diagram, inclusion in the business planning and communication system, etc.

3. Expert opinion. Expert opinion is valid -- where it fits.

Evaluation of indicators and environment, strengths and weaknesses, and results by experts.

But you may rightly ask: "If the original wording or measurements are imperfect, won't there be some who will take advantage of it for unearned profits and unmerited cost to the government?"

Yes. These fringe cases always appear in the new. As soon as they show their faces, measurements will be made more perfect and the downward movement of costs to the military accelerated.

Again you ask: "Suppose I take a contract and the unforeseen imperfections are disastrous to me? What appeal do I have?"

Ask this question of the authoritative panel to follow.

IN CONCLUSION

Compare Value Engineering to jetliner.

Trained crew.

Changed environment -- runways

Ultimately measure of jetliner

tons of load, distance, time, cost/ton mile

But to start

training

environment

CONCLUSION

A review of history shows individual wrong decisions, often by inaction, by the score which have resulted in "lost victories" of colossal magnitude, even controlling the world's history. Today, when high cost threatens to limit the adequacy of our minimum defense, and when self-liquidating Value Engineering is available to correct it, knowledgeable men in both government and industry have determined that a "lost victory" must not happen. It remains for us to start using, continuously modify, and promptly benefit from these new tools.

Gentlemen --- if I can contribute further on any specific point, I will be in the audience and at your command.

TO SECRETARY FOUCH

Businessmen... a new opportunity is being presented to you... an increased source of profit.

Make no mistake -- in Value Engineering is significant new technology -- not a wrap-up under a new name.

The DC-6 is not a new name for the DC-3;

Nor the jetliner a new name for the DC-6.

Although they have much in common, and common objectives, each is a different creation -- different in operation --- different in results.

Likewise, Value Engineering is a new system, a new way to more efficiently accomplish a familiar type of results.

If the Value Engineering jetliner still looks to you like the DC-6 -- get a closer view. You will then understand the difference.

If the path to more profit through incentive value engineering contract changes looks hazardous, remember well that every large success in either military or business strategy was based in part upon knowledge, in part upon faith, and filled with the pain of birth.

History records the doubt and the mental pain which preceded the construction of the steel Monitor and the Merrimac, and their surprising record of effectiveness.

Today we are a part of the uncertainty, and the stress which precedes the evolutionary use of the Value Engineering approach.

You, as managers, are seeing proof, but you have learned not to act on proof alone --- proof is sometimes fraudulent. You require proof of results, plus understanding, in your frame of reference.

If this meeting provides sufficient proof and understanding --- you will act. If it does not, search out more. As your professional witness, I tell you that the depth of the Value Engineering technology goes far beyond the obvious.

My topic today is not techniques--but Organization and Measurement.

I am often asked: "We see the benefits of the value engineering system but where and how do you do it without disrupting the work of our organization?"

I grew up on a farm in Nebraska. We used certain facilities in a small building 100 ft. to the rear of the house. One day my father returned from town with something he called a "water closet". He said: "We'll put this in the house. Think of the advantages when the temperature is 20° below zero and snow drifts are three feet deep!"

But where do we put it? Farm kitchens were large and bedrooms very small. The obvious place was the corner of the kitchen. Mother made a curtain to go around it. This solved basic problems but created others. It was sometimes disturbing. The blend of the kitchen aromas was less than the best and to the sensitive ear the blend of sound with the music of the gramophone was inharmonious.

To minimize these disadvantages, Dad moved it into the large closet in the kitchen. In this closet we kept our farm and barnyard clothes at one end and our "good" clothes at the other. We now had to crowd both into one end which badly wrinkled the good clothes and transferred more of the barnyard fragrance to them.

This did minimize the two problems but it was now frustrating to try to find a needed garment in the over-crowded closet.

This equilibrium of frustrations continued a few years until happily Dad designed and built a new house. Lo and behold! There was room in it for the water closet!

At once all of the compromises and frustrations disappeared, while even more benefits continued.

Organization problems will disappear when the "room in the house" is provided, with "uses" and "doorways" made known.

 UNEASINESS ABOUT MEASUREMENT IS UNDERSTANDABLE. How do we safely start?

In utilizing a new tool or process or procedure --- always start first where conditions are most favorable. For example, the first automobile did not start on the muddy up-hill road. It lacked power. The wheels cut into the mud. It lacked control. Furthermore, it competed with the horses. Start on the level road. Later, add tires, add power, add control, pave roads.

When in doubt, start small but solid. Plant one acre of potatoes but get good seed, good fertilizer, good cultivation; then plant 10 acres, and then 100.

Start now making profit with good value engineering.
 START WITH THE SIMPLEST, PERHAPS HARDWARE OF PREVIOUS DESIGN,
 WITH PREVIOUS COSTS.

Proceed to the difficult. Put some water flow through the fire hose, then, instead of fearing its gyrations, we can quickly learn how to handle it.

Measurement problems will be progressively solved.

A combination of three types of measurement can be used for various types of contracts: counting \$, indicators, and expert opinion.

1. Count the dollars

Dollars actually saved.

Dollars of changes approved, useful --- on the next order but too late for this one.

2. Indicators

Competence, training, experience, number, and use of men.

Environment factors of organization, procedures, spot on the PERT diagram, inclusion in the business planning and communication system, etc.

3. Expert opinion. Expert opinion is valid -- where it fits.

Evaluation of indicators, of environment, of strengths and weaknesses, and of results by experts.

But you may rightly ask: "If the original wording or measurements are imperfect, won't there be some who will take advantage of it for unearned profits and unmerited cost to the government?"

Yes. These fringe cases always appear in the new. As soon as they show their faces, measurements will be made more perfect and the downward movement of military costs accelerated.

Again you ask: "Suppose I take a contract and the unforeseen imperfections are disastrous to me? What appeal do I have?"

Ask this question of the authoritative panel to follow.

A few days ago I held a metal box. It was made of light metal about 4" square and 6" long. It had a hole in one end and a switch on the side. It contained two flashlight batteries, a flashlight bulb and a switch handle on the side.

It was used to provide an occasional light source for viewing transparencies. Under the specification of "R&D", each of its special pieces had been designed, drawn, specified and detailed. It was a repetitive item which cost \$52.25 each to say nothing of the large expenditure for so-called research and development which created its specification.

It was not as appropriate for the application as would be a \$2 flashlight.

Again, the \$500,000 of equipment to drag a few tons of concrete eight feet for maintenance purposes. Think for a moment of the enormous "research and development" cost to make this complicated special electronic mule which, incidentally, did not even work reliably--for this simple function. But we may say, "That was yesterday."

Yes, two years ago that was "R&D". Today...at this minute, 10,000 draftsmen, under the name of "R&D" are designing similar gear for us to buy next year and the year after.

Are we caught in a people, procedures, habit trap? We can and must do something to stop it.

IN CONCLUSION

Compare the Value Engineering system to the jetliner... a special creation for one purpose which accomplishes that specific purpose with extreme efficiency but, as with the jetliner, there must be a trained crew who know how to develop its capabilities and also, as with the jetliner, there must be a changed environment, longer runways. To endeavor to develop the efficiencies of the jet in the environment--on the runways--of the DC-3 would be worse than useless-- would be disaster. So in value engineering is a new, complete system for identifying

and eliminating unnecessary cost effectively. It requires specially trained people and a changed environment. You gentlemen, the managers, are the environment and this is your part.

One more word of caution would be, "Don't look at the system and decide to try it out by using only a part; don't try to fly only a part of an airplane."

Measure the system--the parts--the quality of each part.

Measure the training.

Measure the environment.

Later, measure the cost per ton mile.

A review of history shows individual wrong decisions, often by inaction, by the score which have resulted in "lost victories" of colossal magnitude, even controlling the world's history. Today, when high cost threatens to limit the adequacy of our minimum defense and when self-liquidating Value Engineering is available to correct it, knowledgeable men in both government and industry have determined that a "lost victory" must not happen.