

Multi-Disciplined Does It!!

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There are good reasons for every element of the Value Methodology, but every once in a while even very seasoned Value practitioners are absolutely (and pleasantly) surprised by some of our VE Team results.

Several years ago, a heavy rain brought all sorts of debris down the Santa Margarita River, and some of it lodged against the pilings of the Basilone Bridge, USMC Camp Pendleton, CA. Raging waters then eroded the base of these pilings, causing the bridge to collapse on its side into the river, forming a dam. Enough water backed upstream to breach a dike protecting the USMC airfield, flooding it and many buildings in the area at 2AM, so very little warning was given, little could be done to close the break, and helicopters and other equipment were caught in the open. It took months to restore the area, and a new bridge was designed to replace a “quick-fix” that was used for many months during a relatively dry spell.

To preclude a repeat of the same circumstances, the new bridge was an additional 15’ higher off the river surface, and the pilings were spaced further apart, and protected by deflectors. Since the bridge alignment crossed the flight path for the airfield, and the ADS (Air Departure Surface) could not be violated, the new bridge required a new alignment some 600’ or more upstream. This was being driven by the flight path of a fully loaded C5A, which required one (1) foot of vertical rise clearance for every forty (40) horizontal feet. This flight path over the bridge also had to provide clearance for the largest truck with the highest load to pass the bridge mid-point at exactly the same time as a C5A landing or taking off. The height of the truck and load was on the order of 20’.

During the *Information Phase* of the VE Job Plan, the Team found out that C5A visits to this airfield were infrequent, and mainly special supply runs or dignitary visits. It was primarily a helicopter airfield, with an active fixed wing jet operations support. The Team also noted that the realignment of the bridge would also require realignment of all the approach roads to the bridge, and a new EIR (Environmental Impact Report), both very expensive and time consuming project elements.

While these main concerns were being addressed by the civil, environmental and structural members of our Team, our electrical Team member had very little to address, other than some roadway lighting and items relating to communication. When the Team got into the Brainstorming session, we kept coming back to that very nagging bit of information that the C5A visits were infrequent, and the ONLY time an accident could occur would be the unlikely circumstance of BOTH the largest truck (with the largest load) getting to the bridge mid-point at exactly the same time as the C5A.

The Electrical engineer on our Team asked “What if I could stop ALL vehicles from crossing the bridge when the C5A was landing or taking off? That would give us more than 20’ of additional clearance, and we could solve the problem with a signalized gate, operated from the control tower!” Total cost of that simple installation: under \$30,000. Costs avoided: on the order of \$2 Million for the EIR work, new roads and alignments, plus approximately 8 months saved over the construction schedule. It was accepted, and the synergistic multi-disciplined Team approach once again proved that the whole is MORE than “the sum of its parts”, using VE Methodology .