

Why the PERT Method Should Be Avoided or Closely Monitored

The Program Evaluation and Review Technique (PERT) earned value calculation method, or as some refer to it, the PERT formula, was developed in 1958, nine years before the advent of the Cost/Schedule Planning and Control Specification (C/SPCS)¹. Because it was considered the forerunner of the earned value concept and involved a very simple calculation of the budgeted cost for work performed (BCWP), it became ingrained as an acceptable BCWP calculation method.

The PERT method of BCWP calculation is as follows:

Divide the actual cost of work performed (ACWP) by the estimate at complete (EAC), then multiply the quotient by the budget at completion (BAC) or:

$$BCWP = (ACWP/EAC) \times BAC.$$

The downside to using the PERT method to calculate BCWP occurs when the EAC is not updated in a timely manner and the ACWP is allowed to rapidly accumulate. The result is an inaccurate BCWP that overstates the amount of work being accomplished.

In the late 1970's, the U.S. Department of Defense (DoD) EVMS review teams found that the use of the PERT method on critical path tasks or high dollar materiel was blindsiding both higher level management and the customer. The BCWP being claimed, while holding the EAC constant on an ever increasing overrun condition, was misleading and resulted in invalid performance reports and meaningless variance analysis.

As a result, government EVMS review teams and customer surveillance representatives began accepting the technique only on low dollar, firm fixed price material. It was not considered acceptable to use the PERT method for high dollar materiel or on critical path tasks.

Unfortunately, the use of the PERT method has resurfaced in recent years. The reason for this renewed practice falls into various categories:

1. The enticement to "buy BCWP" on award fee type contracts where the fee is determined on the strength of the cost performance index (CPI).
2. Customers who encourage contractors to maintain very high CPIs until decision points have passed.
3. Inexperienced contractor EVMS project teams, customer review teams, and surveillance teams.

The PERT method should never be used on any critical path task or for high dollar material. If used at all, it should only be used on low dollar, firm fixed price material. The improper use of the PERT method sends a serious signal to senior management and to the customer that the

¹ The Cost/Schedule Planning and Control Specification (CSPCS) later resulted in the Cost/Schedule Control Systems Criteria (C/SCSC) which is the precursor to the current EIA-748 Standard for Earned Value Management Systems.



performance data will be misleading. This, in turn, could lead to subsequent customer agency involvement regarding the performance data and continued EVM system acceptance.