

Proving Productivity Losses

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When a contractor bids and is awarded a fixed priced contract, it is betting that it can achieve a certain level of productivity in performing the work such that the contract will be financially successful. When losses are suffered, additional labor costs are typically the largest element of those losses.

Although the factors that can cause additional labor costs may greatly vary, they all generally fall into the broad category of lost labor productivity. As discussed below, proving lost productivity claims against the owner can be a difficult task, but provided certain basic fundamentals are present, accepted methods of analysis do exist.

A typical owner criticism of loss of productivity claims is that the calculation of the loss lacks certainty or precision. The irony of this criticism is that, more often than not, the very factors that cause a contractor to suffer productivity losses are the precise reasons why detailed direct cause and effect records cannot be accurately maintained to calculate damages on a discrete impact by impact basis. For example, generally, a contractor's accounting and project records do not separately isolate costs for productivity losses from other costs of the project because the work impacted by the loss is integral with base contract work. That is, even though a contractor may be able to create hundreds of specific line items in a cost coded accounting system, base contract work and the inefficiency component are often so intertwined that it prevents a clear delineation of the costs attributable to each.

In *Appeal of Clark Construction Group, Inc.* (2000 WL 37542) VABCA No. 5674, 00-1 BCA ¶ 30,870 (i Clark), the Board of Contract Appeals noted, with regard to the inherently perplexing nature of calculating damages in loss of productivity claims, that: *Quantification of loss of efficiency or impact claims is a particularly vexing and complex problem. We have recognized that maintaining cost records identifying and separating inefficiency costs to be both impractical and essentially impossible.*

Most jurisdictions similarly recognize that, once liability for a loss is established, difficulty in establishing the precise amount of the loss does not allow the responsible party to escape paying damages. In this regard, the courts have established a real-world recognition that once it is established that a party has caused damages, preciseness in calculating those damages is not required for recovery. (*See, e.g., Hanlon D&S Co. v. S.Pac. Co. (1928) 92 Cal.App. 230, 235* [The fact that the amount of damages cannot be precisely measured by a damaged party does not prevent the recovery of damages by that party.]; *Elte, Inc. S.S. Mullen, Inc. (9th Cir. 1972) 469 F.2d 1127* [The difficulty of ascertainment of the amount of damages is not to be confused with the right of recovery].)

Notwithstanding the above, for a contractor to prove a productivity loss, it must first recognize that a loss is occurring. To recognize that a loss is occurring, a base-line plan is necessary, as well as a means for measuring productivity against that base-line during the

project. Because most contractor accounting systems allow for detailed line items of material and labor costs to be tracked, costs on some type of man hours per unit may be examined during a project as an indicator that inefficiencies are being suffered. However, it should be recognized that measuring unit costs per labor hour based upon actual cost records without consideration of other factors, such as over-time or wage rate variances, will not reflect actual productivity, but will merely serve as a means to alert project management that inefficiencies may be being experienced. Likewise, because cost data is typically segregated by task in the field by foremen, variation in what work falls into a particular cost code may vary, thereby impacting the data. Nonetheless, once a contractor has a reasonable plan, and a general means for recognizing that some type of impact is occurring, it will have the ability to provide general notice to the owner as early as practical on the project, and, most importantly, to seek to reserve its rights to recover such losses at a later date. This later point is important because if change orders are being executed without a recognition that labor inefficiencies are being experienced, and no reservations of rights are recorded, the contractual defenses of notice and accord and satisfaction may become a hurdle to a contractor's recovery, despite there being actual losses.

Assuming a contractor recognizes it is experiencing productivity losses, how does that contractor quantify its losses? If a contractor has no practical method to prove its actual labor inefficiencies directly, as those inefficiencies relate to specific and discrete project impacts, a contractor must resort to a less direct method to quantify its losses. If a contractor can implement a method during construction to directly track its increased labor costs due to specific project events, it should do so as the direct or actual cost method of proving damages is always the preferred method. Absent a direct method to prove damages, there are several alternatives used within the industry.

One alternative method is known as a measured mile analysis. This method is best used when a project has a clearly defined un-impacted portion, versus an impacted portion, of similar work. The normal productivity and unit costs of the un-impacted portion of the project serve as the base-line to compare to the actual costs and productivity achieved during the impacted portion of the project. If a contractor can establish that the owner was legally responsible for the causes of the disruptions, the cost differences between the normal productivity and the impacted productivity can serve as a useful measure of the damages. In fact, if the base-line period of the project itself had some disruptions, a comparison to the impacted portion of the project may actually under estimate the actual cost impacts incurred. An advantage of this approach is that it does not solely rely upon the contractor's original estimated productivity as it focuses on actual unit costs for both the base-line period and the impacted period. Expert analysis is typically best to establish damages under this approach as other variables that can affect productivity unrelated to owner caused impacts should be considered, such as weather, changes in management, overtime, and even specific changes in work crews or mixes.

Another method to estimate the losses caused by owner disruptions include what is generally known as industry studies. Indeed, industry studies may be one of the only ways to calculate labor inefficiency damages on a construction project where, due to the

particular nature of the project, e.g., the actions of the owner, it is impractical to calculate damages in a more direct method such as through a measured mile analysis. While there are some more well-known studies, including the Mechanical Contractors Association of America cost manual (the MCAA manual), Charles Leonard's thesis on the effects of change orders on productivity, and, more recently, the Construction Industry Institute studies, there are a host of other studies or guidelines, including the U.S. Army Corps of Engineers Modification Impact Guide, The Business Roundtables Measuring Productivity In Construction, the Associated General Contractors of America's National Joint Guidelines, the National Electrical Contractors Association's Manual for Labor Units, the Electronics Industry Cost Estimating Data Booklet, and the Means Estimating Guide.

The common thread running through decisions and cases in which construction industry studies are approved when the claimant uses such studies in conjunction with qualified expert opinion testimony; as opposed to the blind application of such studies in a vacuum, e.g., without regard to the facts of the particular construction project. Indeed, academics and construction law practitioners have noted that a mere expression of an estimate is not sufficient but, instead, a claimant must establish a sufficient basis for making a reasonable approximation of the amount of damages incurred. In other words, application of a labor productivity study, whether well-known or obscure, by a qualified expert in a reasonable manner, can, in the right circumstances, be a legitimate means to calculate damages.

In *Appeal of P.J. Dick, Inc.* (2001 WL 1219552) VABCA No. 5597, 01-2 BCA ¶ 31,647, (P.J. Dick), the contractor's expert opined that the labor productivity was impacted because of continuous revisions to design. This opinion was based upon interviews with project personnel and the review of project documents, including the drawings, estimate, cost records and man-hour reports. The contractor's expert explained that, while a measured mile analysis is generally the preferred method, in this instance, there was no period during installation of the work during which the work was unaffected by design problems or acceleration. Thus, as an alternative to a pure measured mile analysis, the contractor's expert provided a damages opinion based upon the MCAA manual. The Board found that the contractor's approach to quantification of the owner-caused productivity loss was reasonable and valid, and that it constituted a reasonable approximation of the owner-caused inefficiencies.

In the recent case of *Hensel Phelps Construction Co. v. General Services Admin.*, (2001 WL 43961) GSBICA 01-1 BCA ¶ 31,249 (Hensel Phelps), the Board strongly endorsed the claimant's utilization of the standard factors affecting labor productivity as set forth in the MCAA manual for calculating lost labor productivity damages. The mechanical contractor claimant offered the testimony of an expert who relied on six (6) of the sixteen MCAA factors to calculate the productivity loss. The expert assigned his own relatively conservative percentages of impact to these factors based upon his experience in the construction industry to arrive at the conclusion that more than 25,000 man-hours of labor productivity were lost on the project. The Board found the expert's testimony to be highly credible and his use of the MCAA factors entirely rational. The Board conceded

that the measured mile analysis is often used in assessing labor productivity losses, but noted that it simply would not have worked in this instance, given the complex nature of the case. Instead, as the Board stated, it believed the MCAA analysis produced a more accurate valuation of lost productivity in this instance, and awarded damages for labor productivity losses.

In *S. Leo Harmonay, Inc. v. Binks Mfg. Co.* (S.D.N.Y. 1984) 597 F.Supp. 1014 (Harmonay), the U.S. District Court endorsed use of the MCAA manual inefficiency factors as corroborative evidence of a lost productivity claim. Although the claimant's damages were calculated using a measured mile approach, testimony was admitted regarding portions of the MCAA manual that buttressed the measured mile analysis. In Harmonay, the claimant contended that it incurred various types of damages, including lack of productivity or efficiency damages. Such damages were allegedly:

... due to excessive working hours, overly crowded conditions, the unavailability of tools, materials and storage, defendant's delay in supplying drawings and equipment, and the constant revision in the contract drawings, all of which resulted in confusion and interruption of the orderly progress of work. (Emphasis added.)

(Harmonay, supra, at 1029.) The claimant presented testimony of an on-site project witness as well as expert testimony. The expert based his opinions on his observations of the project as well as his review of the project records and concluded that a 30% labor productivity loss had been suffered by the claimant. The expert's opinion was equal to the amount set forth in the MCAA manual and the expert testified regarding the MCAA manual as supporting his finding of a 30% loss, despite the expert having apparently not utilized the MCAA manual previously in calculating productivity damages. The court found the testimony of the claimant's witnesses highly credible and uncontradicted by the defendant.

In the end, it is ironic that the very factors that cause inefficiency losses to occur often prevent the contractor from directly quantifying its losses with precision on a direct impact-by-impact basis. Recognizing these situations, most jurisdictions allow a contractor to use the best evidence available to calculate damages, provided liability is established, proof that actual damages were suffered is established, and the method used to calculate damages is based upon a reasonable analysis and is not mere speculation.