

# CDR.02

## Calculation and Recovery of Home Office Overhead

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Owner-caused delay is common on construction projects. It may have many sources, including directed or constructive changes, delays in furnishing owner-provided equipment or materials, differing site conditions, slow responses to shop drawing submittals or requests for information, etc. Despite the number of reasons for owner-caused delay, the result is almost always the same. Contractors typically request an equitable adjustment to the contract to compensate them for both time and cost. It is often difficult for owners and contractors to reach agreement on the cause(s) of delay. Contractors tend to view most delays as the responsibility of the owner. Owners, on the other hand, often try to label delay as either third party-caused or concurrent delay, either of which results in excusable, noncompensable delay. Delay analysis usually sorts out this argument.

Once agreement is reached concerning the cause of the delay, the argument turns more technical. What is the extent of the delay? Due to the complexity of modern scheduling and multiple ways to perform delay analysis, negotiations over the extent of a delay are often difficult. Delay analyses performed by two different parties, on the same incident, can yield results substantially at odds with one another. Generally, however, if both the owner and the contractor stay focused on resolution, some agreement can be reached on both the extent of delay and quantification (i.e., non-excusable, excusable, compensable, and concurrent).

The issue is now settled, right? Wrong! The argument now turns to financial impact. That is, what is the cost of a day of compensable delay? Provided that the contractor maintains reasonably good job cost records, determining daily field office overhead (FOOH) costs is not difficult. However, in owner-caused delay situations, contractors frequently seek recovery of extended or unabsorbed home office overhead (HOOH). This is where negotiations often deadlock. Why? There is no standard accepted way of calculating HOOH. Most contractors want to use formulas to calculate their damage. Most owners, on the other hand, want to see “real damage” based on some sort of audit—“prove that your overhead increased as a result of my delay!”

This paper discusses the HOOH issue. What is HOOH? What are typical cost elements of HOOH? How is HOOH generated or recaptured under normal circumstances? The paper identifies eight different formulas that have been used in construction litigation in the US and Canada and applies all eight formulas to the same delay situation to demonstrate the wide variance in cost results. The paper also discusses some new rules developed by US

federal courts for use on US government contracts concerning the recovery of unabsorbed HOOH.

### HOME OFFICE OVERHEAD—WHAT IS IT?

HOOH is generally described as company costs incurred by the contractor for the benefit of all projects in progress. This is the actual cost, which is an essential part of the cost of doing business. [1]. These are costs that cannot be directly allocated to a project. This definition excludes those costs incurred by the contractor solely in support of a single project or group of projects. Typical examples of HOOH discussed in the industry include the following.

- Executive and administrative salaries.
- Legal and accounting expenses.
- Home office rent and expenses.
- Advertising.
- Company insurance.
- Recruiting costs.
- Utilities, telephone, fax, and computers for the home office.
- Human relations costs.
- Interest on company borrowings.
- Travel for home office staff.
- Bad debt.
- Depreciation of company assets.
- Entertainment.
- Professional fees.
- Contributions.
- Bid costs.

There are few regulations concerning accounting for HOOH costs. Contractors are reasonably free to account for such costs in whatever manner they choose. They must, however, use the same system at all times and on all contracts. While Federal Acquisition Regulations (FAR) limit the recoverability of some types of HOOH costs, these limitations apply only to contracts directly with agencies of the federal government [2].

Based on this discussion, when analyzing delay costs, one must distinguish between HOOH costs (those that support all projects) and FOOH costs (those that support a single project or group of projects). In performing such cost analysis, one also has to guard against the possibility of “double-dipping.” An example is

a home office estimator who is assigned to a project for a few weeks to resolve a series of changes. If the estimator is typically accounted for in home office costs, they should not be charged to the project. If the estimator is charged to the project, over recovery will occur if the normal HOOH rate is applied since the estimator's cost will be included twice.

- A contractor is entitled to compensation for unabsorbed HOOH resulting from owner-caused delay, if it meets certain criteria.
- There is no exact accounting method for calculating unabsorbed HOOH.
- A fair, realistic cost estimating formula is necessary to determine the compensation owed.

**NORMAL RECOVERY OF HOME OFFICE OVERHEAD**

HOOH costs are added during bidding to the contractor's estimate of direct costs and field overhead costs. HOOH is typically added as a single percentage number—"Let's use 7.5 percent!" Of course this single multiplier actually includes home office costs, contingency, and profit, unless another line item is added to the bid takeoff to account for these other numbers. That is how HOOH enters the budget.

How is HOOH recovered on the normal job? Few contracts have a pay item for overhead and profit. Most contracts tell the contractor to spread or allocate the overhead and profit costs across all pay items in the schedule of values. Setting aside the issue of unbalanced bid breakdowns, the contractor is expected to spread overhead and profit cost uniformly across all pay items in the contract. Thus, when contractors accomplish pay item work, they recapture both the cost of the work and the overhead and profit associated with that work.

That gets the overhead and profit into the contractor's job cost accounts. But, one step in this financial transaction remains. The contractor must move part of the money received from the project job cost records to the corporate accounts in order to pay for HOOH costs. This is typically accomplished by cost adjustments moving funds from project costs to corporate overhead. This completes the financial transaction.

**HISTORY OF HOME OFFICE OVERHEAD RECOVERY IN DELAY SITUATIONS**

The recovery of HOOH as a result of compensable delay is not a new law. In fact, as far back as 1941, US federal courts awarded recovery of HOOH to a contractor for a government-caused delay in *Herbert M. Baruch v. United States*. The court did not, however, discuss how the HOOH costs were calculated [3]. In 1945, a federal court again addressed the issue of HOOH in *Fred R. Comb Co. v. United States*. Here, as a result of a government-caused delay, the court awarded "increased office overhead" as part of the damages due to site unavailability. In this case, the decision did include a formula for calculating HOOH [4].

The landmark case in the area of HOOH is the Eichleay Corporation case decided in 1960 [5]. In this case, the Armed Services Board of Contract Appeals (ASBCA) concluded that there were multiple work stoppages for which the government was responsible. The ASBCA concluded also that HOOH costs continued during the suspension periods; that the Eichleay Corporation was unable to take on new work during these periods to replace lost project revenue; and they thus had to absorb the unrecovered HOOH costs. The keys to the Eichleay decision appear to be as follows.

Thus, the Eichleay formula was born, a creature of the boards of contract appeals. There has been continuous controversy concerning this formula almost from the outset. Some courts have accepted it at face value, Virginia, for example [6]. Other state courts have adamantly refused to use Eichleay—New York, for example [7]. Many have tried to substitute other formulas in place of Eichleay.

**DOES IT MATTER?**

As a result, there are at least eight formulas that have been used, with varying degrees of success, in litigation in the US and Canada. Now, if these formulas are all "fair, realistic methods" of estimating damages then it should not matter which formula is used, should it? To get an answer to this question, let's look at the same case using all eight formulas. For the purposes of this paper, we will use a case as set forth below.

Let's look at the same case using all eight formulas to see if the results are reasonably close. The Eichleay formula [8] is given below (see tables 1 and 2).

**Table 1—ABC Construction, Inc., Contract and Financial Data**

Total Firm Revenue: Original Period	\$247,711,967
Total Firm Revenue: Actual Period	\$381,095,333
Original Contract Value	\$68,500,000
Total Contract Value (before claim)	\$76,866,128
Billings: Original Period	\$69,753,854
Billings: Actual Period	\$76,866,128
Billings: Delay Period	\$7,112,274
Company Overhead: Original Period	\$16,265,000
Company Overhead: Actual Period	\$28,918,417
Total Overhead and Profit: Actual Period	\$37,156,795

**Table 2—ABC Construction, Inc., Scheduling Information**

Planned Contract Duration	365 calendar days
Actual Duration	655 calendar days
Extended Duration	290 calendar days
Owner-Caused Delay	235 calendar days
Planned Overhead & Profit % at Bid	7.0%
Normal Home Office Overhead %	4.5%
Actual Home Office Overhead %	5.3%
Actual Home Office Overhead %: Delay Period	6.1%

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$$\frac{\text{contract billings}}{\text{total billings for actual contract period}} \times \text{total company overhead during actual contract period}$$

$$\$13,828 \times 235 \text{ cd's} = \$3,249,580.$$

**Modified Eichleay Formula—Variation 2 [10]**

$$\frac{\text{allocable overhead}}{\text{actual days of contract performance}} = \text{overhead allocable to contract/day}$$

$$\frac{\text{contract billings}}{\text{total billings for original contract period} + \text{contract billings for extended period}} \times \text{total company overhead during original contract period}$$

$$= \text{overhead allocable to contract}$$

$$\text{daily overhead} \times \text{days of owner-caused delay} = \text{home office overhead owed}$$

$$\frac{\text{allocable overhead}}{\text{original days of contract performance}} \times \text{overhead allocable to contract/day}$$

$$\text{daily overhead} \times \text{days of owner-caused delay} = \text{home office overhead owed.}$$

This formula attempts to allocate HOOH for the entire contract period first to the project and then recalculate it on a daily basis to determine the compensation owed. Using the numbers, here are the results.

Like the first variation to Eichleay, this formula attempts to allocate HOOH for the original contract period first to the project and then on a daily basis to determine the compensation owed. It adds into the calculation the value of contract billings during the extended period in an attempt to compensate for overhead costs spread over a longer period of time. With the real numbers from the above referenced case, here are the results.

$$\frac{\$76,866,128}{\$381,095,333} \times \$28,918,417 = \$5,832,787$$

$$\frac{\$76,866,128}{\$254,824,241} \times \$16,265,000 = \$4,906,240$$

$$\frac{\$5,832,787}{655 \text{ calendar days}} = \$8,905/\text{cd}$$

$$\frac{\$4,906,240}{365 \text{ cd's}} = \$13,442/\text{cd}$$

$$\$8,905 \times 235 \text{ cd's} = \$2,092,675.$$

$$\$13,442 \times 235 \text{ cd's} = \$3,158,870.$$

**Modified Eichleay Formula—Variation 1 [9]**

**Hudson Formula [11]**

$$\frac{\text{contract billings}}{\text{total billings for original contract period}} \times \text{total company overhead during original contract period}$$

planned home office overhead and profit percentage

$$= \text{overhead allocable to contract}$$

$$\times \frac{\text{original contract sum}}{\text{original contract period}}$$

$$\frac{\text{allocable overhead}}{\text{original days of contract performance}} = \text{overhead allocable to contract/day}$$

$$= \text{allocable overhead per day} \times \text{period of owner-caused delay} = \text{home office overhead owed.}$$

$$\text{daily overhead} \times \text{days of owner-caused delay} = \text{home office overhead owed.}$$

This formula attempts to allocate HOOH for the original contract period first to the project and then on a daily basis to determine the compensation owed. It assumes that the HOOH rate from the original contract period should hold the same even during the delayed period. Using the numbers referenced above, here are the results.

This formula was created by the courts in the United Kingdom and later exported to Canada. It derives its daily HOOH rate on the basis of the as-bid calculations and assumes that the bid rate should hold constant throughout the life of the project. Using the information above, we have the following.

$$\frac{\$76,866,128}{\$247,711,967} \times \$16,265,000 = \$5,047,095$$

$$7.0\% \times \frac{\$68,500,000}{365 \text{ cd's}} = \$13,137/\text{cd}$$

$$\frac{\$5,047,095}{365 \text{ cd's}} = \$13,828/\text{cd}$$

$$\$13,137 \times 235 \text{ cd's} = \$3,087,195.$$

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**Manshul Formula [12]**

$$\text{Cost of work performed during delay period} \times \frac{\text{contract cost \%}}{\text{cost} + \text{markup \%}} = \text{direct cost}$$

$$\text{direct cost incurred during delay period} \times \text{home office overhead \%}^* = \text{home office overhead owed.}$$

\*Estimated or known HOOH % portion of bid markup.

This formula has also referred to as the direct cost allocation method. It is a creature of the courts in the state of New York. When New York courts rejected Eichleay, they were challenged to pose a substitute method of calculating overhead and created this formula. It does not arrive at a daily overhead rate. Rather, it uses the as-bid HOOH rate times the cost of work performed during the delay period to determine the overhead used. Using the information above, we have the following.

$$\$7,112,274 \times \frac{100\%}{107\%} = \$6,646,985$$

$$\$6,646,985 \times 4.5\% = \$299,114.$$

**Carteret Formula [13]**

$$\text{actual overhead rate during delay period} - \text{normal overhead rate} = \text{excess overhead rate}$$

$$\text{excess overhead rate} \times \text{total cost of work during delay period} = \text{home office overhead owed.}$$

Carteret is a formula that comes out of the manufacturing sector, but some have attempted to apply the formula to construction delay cases. It assumes that there is a differential in overhead rates during a delay period and calculates this difference. The formula then multiplies this rate differential times the cost of work performed during the delay period. Since this is a cost-based formula, like Manshul, it does not derive a daily rate. The problem with this approach is that if no rate differential can be shown, then no HOOH is owed. Let's take a look at the hypothetical case numbers.

$$6.1\% - 4.5\% = 1.6\%$$

$$1.6\% \times \$7,112,274 = \$113,796.$$

**Allegheny Formula [14]**

$$\begin{aligned} &\text{actual overhead rate during delay period} \\ &- \text{actual overhead rate during entire project performance period} \\ &= \text{excess overhead rate} \end{aligned}$$

$$\text{excess overhead rate} \times \text{contract base cost} = \text{home office overhead rate owed.}$$

Like Carteret, this formula comes to the construction industry from the manufacturing sector. Like Carteret and Manshul, it is cost based, not time based. Thus, it does not derive a daily overhead rate but calculates overhead from the rate differential times the base bid cost. Again, if no rate differential can be demonstrated, then no HOOH is owed, even if owner-caused delay is present. Let's see how the numbers work out.

$$6.1\% - 5.3\% = 0.8\%$$

$$0.8\% \times \$68,500,000 = \$548,000.$$

**Emden Formula [15]**

$$\frac{\text{total overhead and profit}^*/\text{total company turnover}^{**}}{100}$$

$$\times \frac{\text{gross contract sum}}{\text{planned contract period}} \times \text{owner-caused delay period} = \text{home office overhead owed.}$$

\*Total company overhead and profit during contract period.

\*\*Total company revenue for contract period.

This formula is a creature of the Canadian courts. Its approach is similar to Eichleay in that it attempts to allocate total company overhead to a project on first a proportionate basis and then a daily basis. It uses both overhead and profit costs as a part of the calculation and then multiplies the result times the amount of owner-caused delay incurred. Looking at our hypothetical case we find the following.

$$\frac{\$37,156,795/\$381,095,333}{100} \times \frac{\$68,500,000}{365 \text{ cd's}} = \$18,298/\text{cd}$$

$$\$18,298 \times 235 \text{ cd's} = \$4,300,030.$$

**Overhead Formulas—Results**

To determine whether these eight formulas deliver approximately the same results, the final outcome of each is shown in table 3.

**Table 3**

Formula	Daily Rate	HOOH Recoverable
Eichleay Formula	\$ 8,905	\$2,092,675
Modified Eichleay Formula-Variation 1	\$13,828	\$3,249,580
Modified Eichleay Formula-Variation 2	\$13,442	\$3,158,870
Hudson Formula	\$13,137	\$3,087,195
Manshul Formula	N/A	\$ 299,114
Carteret Formula	N/A	\$ 113,796
Allegheny Formula	N/A	\$ 548,000
Emden Formula	\$18,298	\$4,300,030

Based on the above analysis, it would appear that the answer to the original question of whether an owner should care which formula is used is clearly "Yes!" What is generally presented as an accounting technique is obviously an estimating approach that yields wildly different results, even when applied to the same case.

### NEW DEFINITIONS

In some recent court cases (cited below) US federal courts have started using familiar terms, but giving them different meaning. This obviously adds to the confusion surrounding the issue of HOOH. Three terms that need to be understood to participate in today's debate on HOOH are given below.

#### Unabsorbed Overhead

When a project's cash flow is substantially diminished due to an owner-caused delay, the contractor's fixed HOOH costs are not absorbed by the project, and must therefore be absorbed by other projects. This is the amount of overhead that occurs during this period.

#### Delay Period

Although a term long used in construction, the new use of this term in the context of the HOOH issue is the period of time when the project's cash flow has been substantially diminished.

#### Extended Period

This is the period of time beyond the original contract date due solely to owner-caused delays.

### EXTENDED VERSUS UNABSORBED HOME OFFICE OVERHEAD

Based on current court rulings at the federal level, there is now a clear distinction between extended and unabsorbed HOOH, as follows. Extended HOOH stands for the proposition that for every day of owner-caused delay, the owner owes the contractor HOOH based on a rate derived from one of the formulas outlined above. In contrast to this approach, unabsorbed overhead arises when a contractor's cash flow on a project is substantially diminished as a result of an owner-caused delay of unknown duration at the outset. The unknown duration at the start of the delay prevents the contractor from replacing the stopped work with other work, which could help support the overhead costs.

The keys to the recent unabsorbed HOOH cases at the federal level can be summarized as follows.

- A contractor is entitled to recover unabsorbed HOOH if it arises due to owner-caused delay and if the contractor can meet certain other criteria.
- There is no exact method of accounting for unabsorbed HOOH costs.
- Therefore, a reasonable "estimating formula" is necessary.

### PREREQUISITES FOR RECOVERING UNABSORBED HOME OFFICE OVERHEAD

The prerequisites for recovering unabsorbed HOOH can be derived from reading a number of federal court decisions. The requirements, as they now stand, appear to be the following. The *Capital Electric Company* [16] and the *Savoy Construction Company v. US* cases [17] established the following.

- Compensable delay (owner-caused delay) must be proven.
- The contractor must show a "reduction in the stream of income from payments for direct costs" resulting in a reduction of income available to offset HOOH costs. (For example, a suspension of work order or a differing site condition resulting in stopped work.)
- The contractor must show that it could not mitigate damages by taking on new work during the delay period (thus, the unknown duration rule), denying it the opportunity to replace the lost income.

#### Compensable Delay

Other cases (not cited in this paper due to space limitations) have addressed the issue of unabsorbed HOOH, and the following situations seem to meet the above tests.

- Work stoppages caused by design defects.
- Work suspension caused by resolution of bid protests.
- Work suspension due to owner failure to respond to contractor submittals or inquiries.

It appears clear that the contractor is only entitled to recover when there is pure owner-caused delay. And, it is also clear that no recovery can be had when concurrent delay can be shown.

#### Reduction in Stream of Income

The contractor must demonstrate a clear cause and effect relationship between the owner-caused delay or disruption and the reduction in the stream of income from the project. If a delay occurs but project cash flow is not substantially reduced, then no unabsorbed HOOH can be recovered. The problem, at the time of this writing, is that there is no court decision defining the term *substantial reduction* in project cash flow. Everyone, presumably, would agree that a complete stop work order, which stops all project payments, meets the test. But, what if the owner directs work stopped on only one-half or two-thirds of the project; is this "substantial reduction"?

#### Inability to Mitigate Damages

The contractor must demonstrate that it was impractical to take on new work during the period of the owner-caused delay. The classic argument is that if the contractor does not know the duration of the delay at the outset, it is in no position to contract for new work. Additionally, some courts (cases uncited) have concluded that owner directives to "remain on stand-by" or "be ready to resume work on short notice" also preclude the contractor from

seeking new work to replace lost income. Some examples of a contractor's inability to mitigate damages are the following.

- Numerous sporadic disruptions of the work.
- Exhaustion of a contractor's bonding capacity.
- Uncertainty of the duration of the delay.
- Size and capability of the contractor.
- All available equipment committed to this project.

### Corollary Cases on HOOH Recovery

In *Wickham Contracting Co. v. Fischer* [18], the court determined that the original Eichleay formula is "the exclusive means available for calculating unabsorbed home office overhead" costs. This ruling applies only to contracts with the US federal government and is not, as yet, applicable to any state, except perhaps, Virginia [6]. However, it comes after the court reviewed various formulas and the basis for each. In *Community Heating & Plumbing Co. v. Kelso* [19], the court decided that if the delay to the project grows solely out of change orders (contract modifications) rather than a work suspension, the contractor is not entitled to recover unabsorbed HOOH. This court took the position that delay caused by changes to the work is properly compensated through application of the contract's overhead and profit rates, and no unabsorbed overhead is owed.

### General Rules of Recovery for Unabsorbed HOOH

Based on the above, the general rules for recovering unabsorbed HOOH on federal contracts are the following.

- Owner-caused delay must be proven.
- The owner-caused delay must result in a substantial reduction in project cash flow.
- The contractor must show it was unable to take on new work due to the unknown duration of the delay and was unable to perform other work on this project to support HOOH costs.
- The contractor must show the owner required it to remain on stand-by, ready to resume work quickly once the problem were resolved.
- The contractor must show that the project delay did not result from directed changes or modifications.
- The contractor must calculate the unabsorbed HOOH cost using the original Eichleay formula.

While most state courts have not, as yet, adopted these rules, it is reasonable to assume that owners will urge adoption when litigation arises that contains a claim for HOOH costs.

**H**OOH is recoverable in certain delay situations and has been so for more than half a century. HOOH costs are hard to calculate. While numerous formulas have been put forth over the years, they give wildly varying results even when applied to the same fact setting. The issue is still unsettled, especially in state and local contracts. Owners seeking predictability with regard to HOOH damages in the event of owner-caused delay have a few choices. Contract language can be included that sets forth the rules outlined above, or

something substantially similar, and specifies which formula is to be used if such delay arises. In the alternative, the owner may seek to limit recovery of such costs through use of a no damage for delay clause if the project is located in a state where such clauses are still enforced. Or, the owner may insert the new American Institute of Architects clause concerning mutual waiver of consequential damages [20] and preclude this claim all together.

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