DIFA Research Project

Examination and Comparative Treatment of Home Office Overhead in Construction Delay Claims in Canada, the United States, Great Britain, and Australia

Research Project for Emerging Issues/Advanced Topics Course

Diploma in Investigative and Forensic Accounting Program

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Dedication

From an apprentice to the Master Builders he met at the Barrel Makers' Arms

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I wasted time, and now doth time waste me
Richard 11, V.v.49 William Shakespeare

1. EXECUTIVE SUMMARY[1]

Introduction

The construction industry is highly susceptible to disputes between the parties involved in a building project. Many of these disputes concern breach of contract issues revolving around delays. This paper specifically examines and compares, in an international context, the quantification of losses claimed by a contractor for an owner-caused delay with reference to home office overhead expenses.

Damages In Contract Law

The objective of the court in awarding damages is to return the injured party to their original position had the breach of contract not occurred. Therefore, it is fundamental that the injured party prove to the court that it has actually incurred a loss and the quantification of that loss. The basis and calculations of the claim need to be fair and reasonable; the injured party cannot be seen to have gained unjustly from their action and "come out ahead".

The Controversy

The recovery of home office overheads as part of an action for delay by a contractor against an owner has been extremely controversial over the years and still is to some extent. On analysis, some of the apparent reasons for this can be discerned.

1. It can be difficult to prove that an actual loss was suffered. As indicated below, home office overheads by their very nature are fixed in the short run and not directly related to specific contracts. Since the contractor would have usually incurred these costs regardless, the question then arises as to how the contractor could be out of pocket**.** To some non-financial professionals it can seem highly improbable.

[1] See main text and Section 8 for references

It then falls to financial experts to explain the cost accounting concept of overhead recovery and to legal counsel to demonstrate not only that the delay was caused by the owner but also that an actual loss was suffered. This is because the cost of the under-recovered overhead could not be mitigated by another contract. (See Charts 2 and 3 in Court Presentations, Section 6).

2. The second reason for controversy is having proved that a loss was incurred, the matter of the quantification of that loss arises. Various formulas have been devised as a basis for calculations in this regard and the main ones concerned are examined and compared in this paper.

Home Office Overheads

Home or head office overheads, sometimes called offsite overheads, are the cost to contractors of maintaining a general business presence, typically but not necessarily including a permanent office. These expenses have two important characteristics from an accounting viewpoint:

- Firstly, by definition they are not directly related to any individual contracts or projects
- Secondly, they are time related as opposed to activity related and fixed in the short term. In fact they are sometimes referred to as fixed overheads. This does not man that they do not vary at all, but that by their basic nature it is impractical to fundamentally change them except in the long run.

Recovery of Home Office Overheads

The question then arises as to how contractors plan to recover their home office overhead costs. A traditional concept in cost accounting is that overhead expenses need to be

absorbed or recovered by the ongoing production that they are associated with. There are several methods of doing this. The longstanding approach, originating in the manufacturing sector, is as a percentage of direct labour. When estimating jobs, some contractors do indeed use this method; others charge a percentage of their total direct costs, i.e. including material; still others simply allocate dollar amounts as they judge necessary or quite frankly what they believe the market will bear. Some for this reason may include no overhead at all in a tender for fear of losing the job due to being a few dollars over.

Apart from other problems, this can give rise to difficulties when claiming home office overhead in an action for delay. This is because the overhead dollar amount included in the bid, and possibly the methodology adopted, can have a direct bearing on the outcome of the claim.

Formulas Used

United States - Eichleay Formula

(See Charts 2 & 4, Court Presentations, Section 6)

In 1960 the landmark *Eichleay* decision by the Armed Services Board of Contract Appeals established unequivocally that a contractor was entitled to compensation for unabsorbed home office overhead as part of a construction delay claim. This formula, the *Eichleay* formula or simply "*Eichleay*", became the basis for the calculation of home office overhead expenses in construction delay claims in the Federal Courts of the United States. *Eichleay* has nevertheless been successfully challenged in court and has gone full circle in being adopted, modified, rejected and then subsequently readopted to varying degrees. It has, however, remained the legal point of reference in the United States concerning home office overhead claims down to this day.

The actual formula is very straight forward, facilitating its use but leaving it open to criticism. It is a time-based formula that calculates a daily overhead rate based upon the actual contract period including the delay.

To counter criticism, at least two variations to *Eichleay* evolved as well as the use of alternative formulas at the state level and below. The State of New York was a particular critic.

It is indeed easy to criticize the "Eichleay Formula" for many reasons – it is too simplistic, mechanical, automatic, etc., an "administrative convenience". It can be argued, however, that the prerequisites or assumptions (see pages 30-31) preclude or at least minimize many of the drawbacks. It has also certainly reduced the level of proof required at common law by the contractor. This in fact is the essential point; once the legal liability has been established, it is an attempt, however rudimentary, to provide a calculation base for damages that would otherwise be almost impractical to demonstrate to a court's satisfaction. Of course with all the vagaries and variables of the construction industry, it is not surprising that there are so many possible formulas and variations. The case for consistency, for more certainty, has to be weighed against other issues.

In conclusion, Eichleay is **the formula** in actions against the United States Government and many other government and quasi government agencies at the state level and below. It is by implication the legal point of reference, whether accepted or not, in all such disputes including those in the private sector.

Great Britain - Hudson/Emden Formulas
(See Charts 3 & 5, Court Presentations, Section 6)

The Hudson formula is derived from a reference text by I. N. Duncan Wallace: *Hudson's Building and Engineering Contracts* (10th Edition 1970). The principle involved to recover unabsorbed home office overhead due to an owner-caused delay, is to use the data from the original bid or proposal that the contractor made to the owner. The tendered or planned overhead percentage, as bid to the Owner, is applied to the original contract sum divided by the original contract period. This gives an allocable overhead monetary amount per unit of time.

The Emden Formula is a variation of Hudson and is in fact sometimes quoted as such. It substitutes the bid overhead percentage with an actual number. The *Emden* formula would appear at first glance to be an improvement on *Eichleay* but there can be anomalies depending on the level of activity.

In terms of comparison *Eichleay* and the *Hudson/Emden* formulas do have similarities, both calculating an overhead recovery rate per unit of time and applying it to the delay period. The crucial differences, however, are:

- *Eichleay* is based upon **actual numbers** including the delay period. The *Hudson* formula is based on the **original bid numbers** with *Emden* using the **actual overhead percentage** of sales
- *Eichleay* is concerned with unabsorbed overhead **in the past** whereas *Hudson/Emden* is concerned with the **lost opportunity in the future** to recover overhead

Canada and Australia - Formulas Used

The *Hudson/Emden* formulas have had a significant influence in the English-speaking world sharing a common law heritage. In both Canada and Australia they are used both in the courts and in arbitrations. There are important differences, however, with Canada also using the *Eichleay* formula when appropriate and having a much higher level of litigation. In Australia, most construction disputes go to arbitration with litigation occurring mainly when arbitrators' decisions are challenged.

Conclusions

In terms of realism in the marketplace, it really does depend on the exact circumstances as to which formula is better or if any formula is justified. The problem is that there is no standard formula that will produce a fair and reasonable result in all circumstances – no "one size fits all" solution. This is the reason for there being so many other minor formulas and variations.

In these circumstances the contributions of financial experts, such as Investigative and Forensic Accountants (IFA's), can be significant in ensuring that proper and defendable calculations are presented to the court to assist it in its deliberations. In this context the use of charts can be highly beneficial in assisting to illustrate and explain the issues involved.

2. PROLOGUE

The temple that King Solomon built for the Lord was sixty cubits long, twenty wide and thirty high. The portico at the front of the main hall of the temple extended the width of the temple, that is twenty cubits, and projected ten cubits from the front of the temple
1 Kings 6:2-3, The Holy Bible, New International Version

This prologue aims to set the scene in terms of the issues relevant to this paper respecting the construction industry.

- **Construction Industry**

  The construction industry provides the physical infrastructure in which business and society in general operate. Since the dawn of history humans have constructed buildings for all kinds of purposes including shelter against the elements, fortifications/security, and display. We can only marvel as to how ancient civilizations built the monuments that still stand to this day. It must have taken very high levels of organization, labour, capital and ingenuity.

  Technology and needs have obviously changed dramatically since those times, but the fundamentals have not. High levels of organization, labour, capital and ingenuity are still prerequisites for any major construction project today. In an age of deskilling and labour saving devices such as robotics and other computer-assisted equipment, construction still comprises one of the major sectors of employment in even the most technologically advanced economies.

  Given its nature requiring very considerable amounts of capital and labour, it might be supposed that there would be a high level of cooperation and teamwork: the various interested groups, stakeholders as it were, would typically come together to

form working joint ventures[2] and partnerships. This would help to minimize the high risks to each one and to the project as a whole. In reality, the contrast is surprising for nothing could be further from the truth. The industry is extremely competitive at all levels, with owners, designers, general contractors, trade contractors, material suppliers and labour unions etc. all struggling to perform their contracts with each other to their best advantage at the highest possible profit. This state of affairs usually exists regardless of the impacts on the other parties and indeed the project as a whole.

- **Propensity for Disputes**[3]

  Because of its organization and the risks alluded to above together with other factors peculiar to the construction industry, there is clearly fertile ground for a myriad of misunderstandings and disputes. And that is the reality; even the best-organized well run projects can experience unexpected problems resulting in disputes between the parties involved[4]. In fact, some construction contracts provide for the calculation of delay charges, should a delay occur, and therefore assist in resolving the issues. Many of these disputes are settled to varying degrees of satisfaction between the parties one way or another, but some of course result in civil actions for damages, sometimes in tort such as for negligence but more often for breach of contract. Naturally these can take many forms. That "time is money" is certainly true in construction; many damage claims hinge on delay.

[2] Cushman, R. F., Jacobsen, C. M., & Trimble, P. J. (Editors) (1996). *Proving and Pricing Construction Claims*. New York: Wiley. Hereinafter Cushman, Jacobsen, & Trimble. Discussion in para. 1.1
[3] Hohns, H. M. (1979). *Preventing and Solving Construction Contract Disputes.* New York: Van Nostrand Reinhold. Chapters 1 & 2
[4] Cushman, Jacobsen, & Trimble. Para. 2.1

3. OBJECTIVES

This paper will consider a contentious element in the quantification of losses when a contractor claims against an owner for nonexcusable or compensable delay. The nature of delays is briefly discussed in Section 4.1. Suffice to say at this point that delays are a fact of life in the construction industry and that there are broadly excusable and nonexcusable delays and compensable and noncompensable delays. Delay costs can be defined as those costs accumulated by one party while it waits for another party to complete its contribution to the project concerned.

Proving liability for delay in law is only one part of the preparation of a claim for damages. It is also necessary to prove the quantification of the losses involved. The two go hand in hand. The preparation of most of the expenses claimed is reasonably straightforward, since they are directly related to the project concerned. An obvious one is the cost of the field overhead comprising such items as the rent of the site trailer or shack, on-site hydro, water, telephone lines etc. as well as the salary of the site supervisor and on-site office staff.

In contrast, however, one expense category that has been frequently challenged in court is that referred to as Home or Head Office Overheads. These overheads also called off-site costs are by definition not directly related to individual contracts and are time related rather than activity related. They are fixed in the short term. See Section 4.2, pages 18-20.

Certain formulas or methods have been devised or used in common law jurisdictions to address the very real difficulties of calculating the losses involved. These, however, are not securely established and are themselves subject to challenge. Sometimes accepted or modified and sometimes rejected, these formulas or methods are nevertheless an important point of reference in this matter.

The *Examination and Comparative Treatment of Home Office Overhead in Construction Delay Claims in Canada, United States, Great Britain, and Australia* aims to:

- **Consider the rationale and logic of the outcomes in leading case law, this being the essence of this paper, as from a legal point of view this matter has generated considerable controversy.**
- **Briefly look at some basic accounting concepts in the context of the construction industry, namely (1) matching of revenues and costs, and (2) cost accounting theory concerning the allocation and recovery of overhead expenses.**
- **Compare the international treatment of this issue with special reference to the formulas or methodology employed in four common law jurisdictions, namely Canada excluding Quebec, the United States of America, Great Britain, and Australia with a passing reference to New Zealand. This subject has become very topical in recent years with the growth of international business.**

4. DELAYS AND CLAIMS FOR HOME OFFICE OVERHEAD

"*Contractors, architects: yellers and liars" Sarah McNally* (on opening a bookstore in New York)
Globe Review

Soaring construction costs in Fort McMurray could lead Imperial Oil Ltd. to axe its plans to build a multibillion–dollar facility in northern Alberta…
Report on Business

The Globe and Mail, December 1st 2004

4.1 Background - Delays

This section aims to continue the introduction of the subject of this paper by very briefly considering delays[5]. Exact definitions of the terms involved and their implications depend upon the wording of the relevant contract.

Lowest Bid Wins the Job

Delays are a fact of life in the construction industry[6]. There can be many uncertainties at the beginning of a project in the best of circumstances. Moreover, if the contract has been awarded through a competitive bid process, the winning contractor will undoubtedly have made many assumptions based upon best-case scenarios. To do otherwise would not have resulted in the lowest bid; a more cautious contractor factoring in the cost of contingencies seriously risks bidding too high and therefore losing the job.

Excusable and Nonexcusable Delay

Delays can be classified as either excusable or nonexcusable. An excusable delay allows for the extension of the contract deadline for reasons beyond the control of the party concerned. These can include, for instance, work stoppages due to labour strikes, bad atmospheric conditions or "inclement weather" as many union agreements state, and other natural occurrences usually termed "Acts of God" in legal language. By contrast,

[5] Bramble, B. B., & Callahan, M. T. (2000/2005). *Construction Delay Claims.* New York: Aspen. Referenced hereafter as Bramble & Callahan. Pages 1-1 to 1-23. Also Cushman, Jacobsen, & Trimble. Para. 4.1 to 4.4

nonexcusable delays are held to be the responsibility of the party concerned and can arise, for example, due to mismanagement. The exact classifications in a particular dispute depend upon the respective contract concerned.

Compensable and Noncompensable Delay

Excusable delays can be broken down further into those that are compensable and noncompensable. An excusable delay can be compensable, for example, if an owner delays the on-site starting date, causing the contractor to work through severe winter conditions.[7] Normally, bad weather is noncompensable. Again as always the exact wording in the contract concerned is largely determinate, although this is subject to interpretation by the court.

4.2 HOME OFFICE OVERHEAD CLAIMS

The recovery of home or head office overheads as part of an action for delay by a contractor against an owner has been extremely controversial over the years and still is to some degree. In the author's view, much of the controversy hinges upon some fundamental principles of law and accounting. These are therefore worthy of a brief examination at this juncture in our discussion.

- **Legal Theory**

    1. **Onus of Proof**

        In civil litigation the onus is on the plaintiff to prove their case. In fact, if in the court's judgement the statement of claim does not even present a superficial case against the defendant, the action may be dismissed forthwith. The standard of

[6] Bramble & Callahan. Page 1-3
[7] Bramble & Callahan. Pages 1-10 & 11

proof in a civil action is on the balance of probabilities or the preponderance of the evidence. Nevertheless, the onus of proof remains on the shoulders of the plaintiff - to prove the liability of the owner/defendant for the delay, that an actual loss was incurred, and the quantification of that loss. This is basic civil law, but it can place a very onerous burden of proof on the plaintiff/contractor.

2. Law of Contract

The general principles of contract law certainly apply to construction. The remedies in theory remain the same although in practice monetary damages are naturally the usual remedy awarded. The terms of the actual contract concerned will clearly have a bearing on proving liability and indeed on the quantum of the damages if the court judges them reasonable in the circumstances.

There are two principles in particular that are highly relevant to our subject:

1. The objective of the remedy of damages awarded by the court is to place the plaintiff back to the position they would have been in if the breach, in this context the delay, had not occurred. The plaintiff cannot take advantage, however, and gain from the situation and "come out ahead"
2. The plaintiff has an obligation to take all reasonable steps to mitigate the damages suffered; if little or no action is taken, this needs to be justified

Both these considerations can severely complicate a claim for delay and the quantification of the losses involved.

First of all, having proved the liability of the defendant for the delay and hence the need to quantify damages, the plaintiff then has to demonstrate to the Court's satisfaction that

an actual loss was incurred in terms of home office overheads and the appropriate methodology to quantify the loss sustained.

This can be hard to demonstrate**.** Home office overheads by their very nature are fixed in the short run and are not directly related to specific contracts. Since the contractor would have usually incurred these costs regardless, the question then arises as to how the contractor could be out of pocket. Spence J. eloquently articulated the theory of home office overhead damages in a delay claim in the *Shore & Horwitz* case of 1964[8] as quoted in *Ellis-Don Ltd. v. Parking Authority of Toronto 28 Build. L.R. 98 (1978):*

"The overhead in a year is figured as a percentage of the direct cost and then that percentage is assigned to the direct cost of each individual job. When the job …occupied 4 ¾ months more of the plaintiff's time then during that 4 ¾ months the overhead costs were continuing to run but it was obtaining no revenue which to defray the overhead costs."

This sounds reasonably straightforward. In practice, though, this can be a very difficult matter to demonstrate to the court and can negate the whole claim. For example, supposing the Contractor had no work following the project concerned. The fact that it was delayed for a while – there was a gap in the middle so to speak – simply replaces one idle period with another, one that was expected at the end of it. The delay may have, most certainly, cost the contractor extra expenses on site. In terms of home office overheads, however, it would be very hard to prove the contractor suffered an actual loss as a result of the delay.

[8] Shore & Horwitz Const. Co. v. Franki of Canada Ltd. S.C.R. 589 (1964)

Secondly, given the liability of the owner for the delay and given that an actual loss incurred can be demonstrated to the court's satisfaction, a contractor then has to explain why it was that during the delay they were unable to find or do other work in order to mitigate their damages. This may not have been practical, for example, if the owner required the contractor to be on continuous standby or if the contractor's bonding capacity was fully utilized. Otherwise, at the very least, part of the responsibility may be apportioned to the contractor and any damages reduced accordingly.

- **Accounting Theory**

1. **Matching of Revenues and Costs**

   One of the fundamental accounting concepts is the principle of matching of revenues and costs to establish the financial result of an entity or a project or a product etc. over a given time period. In most cases this is of course a simple matter of accounting for accruals of revenues and costs and establishing prepaid and deferred items as appropriate. Long-term ventures, however, such as large construction projects taking over a year or even several years to complete are a different and potentially complicated matter in this regard. Revenue recognition is by reference to the various accounting standards and guidelines, which in Canada are contained in the CICA handbook.

   But no matter what policy is in place, the drawing down of revenues against the contract is dependent upon the physical progress of the project towards completion. If due to a delay, there is no progress, then there is as a result no revenue for that time period.

   Therefore, regardless of the exact revenue recognition policy, a prolonged delay in operations will cause the revenue stream to be temporarily

suspended. While variable costs may be similarly suspended, time related fixed costs continue – on site and off site, uncontrollable at least in the short term.

2. Overhead Recovery

Nature of Expenses

Off site or home/head office overheads can indeed be very significant expenses, a "burden" as they are sometimes referred to in management accounting terminology. These can typically but not necessarily include the cost of a contractor's permanent place of business. This is where, with a relatively small nucleus of staff, they can inter alia estimate and bid jobs, monitor all projects in process to ensure they are on track, and administer their bookkeeping and accounting, including the critical functions of billing and collections.

These expenses can therefore routinely include[9] the cost of such items as

1. Home or Head Office premises – rent or lease etc, property taxes, utilities, building and grounds maintenance, etc.
2. Office equipment such as computers, telephones, photocopiers, fax machines, etc.
3. Salary, benefits, and other compensation of the
    - General manager or owner
    - Estimators
    - Senior field supervisors

[9] Examples are generally well known but references include Bramble & Callahan Page 12-29, Cushman, Jacobsen, & Trimble. Para. 4.20, and in case law such as Capital Electric v. United States, 729 F.2d 743 (Fed. Cir. 1984)

- Office manager/accountant
- Bookkeeper/payroll
- Receptionist and other support staff

It should also be noted, however, that smaller contractors may contract out services such as bookkeeping or even have an answering service instead of reception. These too would be considered home office overheads.

Characteristics

As discussed below, although these overheads are also referred to as fixed costs, they are not necessarily constant. Utilities may obviously vary through out the year due to seasonality. Rent or lease costs may increase annually with inflation[10].

During a very busy time some of the permanent office staff may be paid for overtime or temporary help may be hired; alternatively during a slow period, some staff members may work reduced hours.

The key characteristics of home office overheads are:

1. **They are not directly related to specific contracts (by definition).** Certain costs incurred by the home office may be billed out to a contract, but these are then accounted for as project costs and no longer as home office costs
2. **While they may vary somewhat as discussed above, they cannot be substantially reduced except in the long term; being time related as opposed to activity related they are fixed in the short term.** In fact as indicated above they are sometimes referred to as fixed overheads. For example to lay off employees or to break a lease can be expensive in the short term and especially so if they need to be rehired or space re-leased shortly afterwards.

Overhead Absorption/Recovery

This leads into accounting policies regarding the treatment of overhead. The traditional cost or management accounting approach to overhead expenses is called by several terms, the most common being overhead absorption or allocation policies. The long-established underlying theory, originating in the manufacturing sector, is as such fixed overhead costs continue on relentlessly as a function of time, they need to be absorbed by the on-going production (of goods and services). **Simply put, the sale of this production, less the direct or variable production costs (such as material and labour) contribute to the cost of the overhead. Any dollars left over of course represent profit or net income. In cost or management accounting terminology this is called the contribution to overhead and profit. (See Charts 2 & 3 in Court Presentations, Section 6)**

Planned Overhead Recovery

The question arises then as to how construction contractors plan to absorb or recover their home office overheads; what policies do they use to allocate or absorb these costs, specifically when tendering jobs? Formally or informally, it seems the process goes something like this. First of all, contractors estimate as best as they can the amount of work they expect to do looking ahead in a certain time frame, the coming year or so, for example.

1. Depending upon the anticipated level of activity, contractors will, if necessary and practical, adjust their home office overhead costs. Examples include hiring an extra support employee for their office or conversely laying off staff or not replacing support employees when they leave. Fixed overhead in the long term is said to go up

[10] Cushman, Jacobsen, & Trimble. Paragraph 4.20

and down in steps. (See Chart 1 in Court Presentations, Section 6). Successful contractors clearly have to plan ahead and make long-term adjustments to their home office overhead in order to survive in a highly competitive industry

2. Then, estimating the amount of direct costs connected with the expected work level, contractors will calculate an overhead recovery rate or figure depending upon the basis used. The typical traditional method, again originating in the manufacturing sector, is as a percentage on labour. Some contractors do indeed follow this practice. Others calculate a percentage on total direct or prime costs, i.e. including materials as well. Still others will simply plan to allocate overheads to projects on a dollar basis, depending upon what they believe the market will bear. In fact verbal inquiries made by the author in Ontario solicited various replies that simply confirmed the commonly held belief that there is no uniform method or policy that construction companies use in this regard.
3. Contractors then apply their chosen method of overhead recovery when estimating and tendering jobs. It should be borne in mind that many contractors do not distinguish between overhead recovery and profit in this context, combining them together for the purpose of bidding. (Ref. *Hudson's building and engineering contracts*[11] and the *Ellis-Don*[12] case as discussed later).

As a point of general information it is useful to note from *Hudson's building and engineering contracts,* "***The percentage used…in pricing for head-office overheads and profit obviously varies…but…is usually, in a major contract subject to competitive***

[11] Wallace, I. N. D., & Hudson, (1979). *Hudson's building and engineering contracts: including the duties and liabilities of architects, engineers and surveyors.* London: Sweet and Maxwell. Hereinafter Hudson's building and engineering contracts

[12] Ellis-Don Ltd. v. Parking Authority of Toronto 28 Build. L.R. 98 (1978)

tender, between 3 per cent and 7 per cent of total prime cost…" Quoted from *Ellis-Don* para. 67.

As a general comment, the amount of planned overhead and indeed profit that contractors include in their bids appears to be less of an accounting calculation and more of an assessment of market conditions[13]. Indeed some contractors may not specifically include anything for overhead in a bid. The problem is that contractors are concerned about coming in too high and losing a bid because of a few dollars. They may also rationalize in their own minds, for example, that they will be able to obtain better than planned for production rates from their labour or higher volume discounts from material suppliers once they have won the job. In addition, contractors may figure they can turn a profit on the inevitable change orders.

Yet this issue is potentially very important if a delay claim involving home office overheads is eventually necessary. The planned recovery of these overhead costs is highly relevant in demonstrating an actual loss has been incurred and the quantification of this loss in the event of a claim.

- **Quantification of Losses**

  Having demonstrated to the court's satisfaction that an actual loss was suffered, it is then the obligation of the plaintiff contractor to prove the quantification of that loss. This entails explaining, illustrating, and presenting the basis of the calculations and the supporting documentation and back up. It is at least partly because of the difficulties in this regard that courts and arbitrators have resorted to formulas or methodologies as fair and reasonable estimates[14]. It is virtually unworkable to do

[13] 2.1 Sandori. Page 2
[14] Cushman, Jacobsen, & Trimble. Page 16-8. Ref. Fred R. Comb Co. v. U.S. 103 Ct. Cl. 174 (1945)

otherwise, and in practice this would mean the likelihood of damages being proven and therefore awarded would be slim[15]. While courts have grappled with this in various ways and with differing results, as will be discussed in the next section, it is interesting to note the enlightening remarks of Hall J. in *Webb & Knapp (Canada) Ltd. v. City of Edmonton*[16] in 1970. This is as quoted from *Bemar Construction (Ontario) Inc. v. Mississauga (City) [2004] O.J. No. 235.*

"The fact that assessment is difficult is no ground for awarding nominal damages…The broad general rule is that damages which are uncertain, contingent and speculative in their nature cannot be made a basis of recovery; but this rule against recovery of uncertain damages is directed against uncertainty as to the cause rather than as to the extent or measure ….There is no uncertainty as to cause in the instant case".

Having said all the above, however, it has to be pointed out that the difficulties mentioned undoubtedly can facilitate the making of fraudulent claims by unethical contractors. While this is beyond the scope of this study, it should be borne in mind that this can add to the problem of the credibility of these losses.

This therefore serves as an introduction to the following section regarding the treatment of home office overheads in construction delay claims in different common law jurisdictions. As previously discussed, the valuation of the on site expenses generally present few problems, even in an industry notorious for poor record keeping and lack of paperwork. This is typically not the situation regarding home office overheads; in fact quite the opposite is often the case. As discussed previously, for example, it is not

[15] Cushman, Jacobsen, & Trimble. Page 16-15
[16] Webb & Knapp (Canada) Ltd. v. City of Edmonton 11 D.L.R. (3rd) 544, 63 C.P.R. 21 (1970)

uncommon to find that the contractor did not specifically build into their bid a definite amount for these costs.

The Court therefore has to deal with various issues arising in this connection such as:

1. During what period should the home office overheads be taken as a yardstick or a measuring rod in connection with the claim?
2. Precisely which expense categories should be considered and which, if any, should be left out of the calculations?
3. What basis should be used to calculate the damages? For example, should actual or bid numbers be used? Or instead of an historic cost approach, should the claim be based upon the lost opportunity cost instead?

Thus as discussed, because of the many complications and uncertainties, courts and arbitrators in the jurisdictions under review have typically, but not necessarily, resorted to using formulas and these are critically examined and discussed in the ensuing sections. Our subject first appeared in the U.S. Courts and subsequently in those in Britain, Canada, and Australia. Because of the mutual influence of judicial decisions regarding home office overheads between these common law jurisdictions, it makes sense to consider our subject in this order.

5. INTERNATIONAL COMPARISONS

5.1 United States of America[17]

Introduction

The matter of the recovery of home office overheads in construction delay claims was first addressed by the courts in the United States, specifically in terms of claims by contractors against the Federal Government. In the 1940's as a result of court decisions arising from contractors suffering substantial and significant delays in their work for the United States Government, the concept began to be accepted that home office overheads could be recovered as part of a delay claim. Having said that, as discussed above it still had to be proven by the plaintiff that an actual loss involving home office overheads was incurred and the quantification of that loss had to be calculated and demonstrated to the court's satisfaction. So the onus of proof remained upon the contractor, bearing in mind that both of these matters can be extremely difficult to address.

In *Herbert M. Baruch Corp. v. United States* in 1941, the contractor was awarded compensation in this regard as part of the total damages because of government caused delays. Neither the merits of the case nor the question of the basis of the calculation, however, were discussed[18].

Fred R. Comb Co. v. United States followed in 1945. Part of the damages claim was for "increased office overhead[19]." The Court not only allowed this but also devised a formula for its calculation. Although in hindsight this laid the foundation for the future, it was not immediately clear at the time. As discussed in Section 4.2, there was and still is a

[17] Main sources: Cushman, Jacobsen & Trimble and Bramble & Callahan
[18] Cushman, Jacobsen, & Trimble. Page 16-7
[19] Cushman, Jacobsen, & Trimble. Page 16-7

controversy concerning home office overhead damages. The courts can be reluctant to award damages where there is uncertainty regarding the extent of those damages. Partly as a result, subsequent decisions by the courts were not conclusive in terms of endorsing *Comb* or any other basis of home office overhead calculation.

The Eichleay Formula

That all changed in 1960 with the landmark *Eichleay* decision by the Armed Services Board of Contract Appeals.[20] This established unequivocally the principle that a contractor was entitled to compensation for unabsorbed home office overhead as part of a construction delay claim. At the same time, the decision made it clear that there was no precise way of calculating this. Drawing on *Comb,* a formula was devised that was believed to be an equitable and practical method of allocating overhead to the project concerned in order to arrive at the quantum of damages. This formula, the *Eichleay* formula or simply "*Eichleay*", became the basis for the calculation of home office overhead expenses in construction delay claims in the Federal Courts of the United States. *Eichleay* has nevertheless been successfully challenged in court and has gone full circle in being adopted, modified to varying degrees, rejected and then subsequently readopted. It has, however, remained the legal point of reference in the United States concerning home office overhead claims since that time.

The actual formula is very straight forward, facilitating its use but leaving it open to criticism. It is a time-based formula that calculates a daily overhead rate based upon the actual contract period including the delay.

[20] Eichleay Corp., ASBCA No. 5183, 60-2 BCA (1960)

EICHLEAY FORMULA[21]

1) Contract Billings / Total Billings for the Actual Contract Period x Total Overhead (O/H) for Contract Period = O/H Allocable to the Contract

2) Allocable Overhead (O/H) / Actual days of Contract Performance = Daily Contract O/H

3) Daily Contract O/H x number of days delay = **Amount recoverable**

One of the obvious points raised when applying *Eichleay* is exactly which categories of expenses are included in home office overheads. As examined in Section 4, by definition these are expenses that are not allocated to contracts; to do so by including such expenses would be to double count when preparing the delay claim. While they are fixed costs, at least in the short term, as discussed previously that does not mean they cannot vary to some degree. Utilities such as heat and hydro are an obvious example of seasonal expenses and rent and property taxes can be subject to annual inflation[22]. The basic premise is that a contractor is incurring time related fixed expenses to conduct the company's business that is separate from the actual construction operations on the job-sites. The functions include to tender jobs, to monitor at a high level all the projects in process, to bill progress payments and collect money, and to perform all the necessary administrative functions in accordance with the law and commercial protocol. The objective of the court is to reimburse the contractor for any unabsorbed necessary overhead of this nature but not to include controllable, optional or possibly frivolous expenses. So plainly the actual costs to be included are at the Court's discretion.

[21] Cushman, Jacobsen & Trimble. Pages 16-3 & 16-4. Also case law such as Capital Electric
[22] Cushman, Jacobsen & Trimble. Paragraph 4.20

In fact, the Federal Acquisitions Regulations (F.A.R.) disallow certain fixed overhead costs, in effect setting the general criteria to some degree for government related claims at all levels. These disallowed overhead costs include[23]:

1. Bad debts, including the legal costs associated with the collection efforts
2. Contributions and donations
3. Entertainment costs
4. Fines and penalties
5. Interest and finance costs
6. Lobbying costs
7. Losses on other contracts
8. Organization costs
9. Costs in defense of fraud proceedings
10. Most advertising costs

Very briefly the Government's argument in many of the above exclusions is that the expenses concerned either do not relate to Government business or are expenses that the Government should not have to pay for. For example the Government always pays its bills and so it should not have to pay for other customers' bad debts or it should not have to pay for its own lobbying.

Various criticisms have been made of *Eichleay.* To start with, let us examine the underlying **assumptions** (or prerequisites) that are inherent in the formula as articulated ***by US Air Force Major D.G. Anderson[24].***

[23] F.A.R. Paragraph 31.205
[24] D.G. Anderson, Recovery of Indirect Costs (1989) as quoted from Cushman, Jacobsen & Trimble. Page 16-4 & 16-5

- ***A*** (simple linear) ***proportional relationship exists between contract billings and fixed indirect costs.*** This is a simplistic assumption. Allocating overhead in this way is liable to distortion because contract billings will contain overhead recovery and a profit element to varying degrees per project.
- ***The costs incurred during the contract period in question were normal.*** Clearly if the overhead expenses were not normal, this will misconstrue the result either way. A simple review of overheads over the relevant period would reveal if this were so.
- ***No variable costs are included as fixed costs in the overhead pool.*** This should be a matter of fact, which could be easily verified.
- ***The timing of the delay did not change the amount of unabsorbed overhead.*** This tends to be a simplistic assumption due to (a) the seasonality of the construction industry, and (b) the affect on overhead is clearly minimized if the project is near completion.
- ***No work of value was performed during the delay period.*** Very simply put, but really meaning that the spare capacity resulting from the delay was not utilized since in Eichleay itself work was only partly suspended.

  This is less of an assumption and more of a fact since otherwise the damages would be mitigated.
- ***The contractor was otherwise working at full capacity during the period of performance.*** This again should be a matter of fact since otherwise the contractor did not incur an actual loss due to the delay. The overhead concerned was unabsorbed anyway. This was discussed above under Legal Theory in Section 4.2.

As indicated above in the commentary[25], while some of these are unavoidable and necessary assumptions from a practical point of view, others should be matters of fact that a forensic and investigative accountant could verify. When reviewing them it is easy to see why this subject and the *Eichleay* formula are so controversial, especially as regards to the last one.

Nevertheless *Eichleay* based solutions, i.e. *Eichleay* with modifications, were accepted by the courts for many years until criticisms of its simplistic, automatic, and mechanical nature came to the forefront, typifying the anti-Eichleay trend of the mid to late 1970's.

Eichleay Variations

As a result of criticisms, two modified Eichleay formulas in particular were devised. The basic concept of calculating a daily overhead rate remained but with modifications.

MODIFIED EICHLEAY FORMULA – VARIATION 1[26]

1) $\frac{\text{Contract Billings}}{\text{Total Billings for the } \textbf{Original} \text{ Contract Period}} \times \text{Total Overhead } \textbf{During Original Contract Period} = \text{O/H Allocable to the Contract}$

2) $\frac{\text{Allocable Overhead (O/H)}}{\textbf{Original} \text{ days of Contract Performance}} = \text{Overhead allocable to the Contract per day}$

3) Daily Overhead x Number of days delay = **Amount recoverable**

This modification addresses concerns regarding the actual delay period itself and is grounded upon the premise that compensation for the delay should be based solely upon the original contract period. Therefore, the **original** contract period **excluding** the delay has been substituted for the **actual** contract period **including** the delay. Likewise the days of contract performance are the original as opposed to the actual.

[25] Cushman, Jacobsen & Trimble. Paragraph 16.3

[26] Zack, Jr., J.G. (2002) *Calculation and Recovery of Home/ Head Office Overhead.* International Cost Engineering Council, 3rd World Congress on Cost Engineering, Melbourne, VIC, Australia. Retrieved May 10, 2005 from http://www.icoste.org/ZACK.pdf. Pages 6,7. Hereinafter Zack

The second, a variation of the first, was put forward by the plaintiff but rejected in *Capital Electric v. United States*[27] in favour of the original Eichleay formula. This went through the full circle of the overhead claim and *Eichleay* being totally rejected initially but being accepted in principle on appeal. That being said, it is worth noting since it represents a real attempt to address some of the criticisms of the original formula and was also incidentally referenced in the case of *G.S. & L. Mechanical & Construction, Inc*.[28] This variation increases the denominator in step 1 by the contract billings for the extended or delay period. This therefore produces a lower dollar value for the overhead allocable to the contract and hence for the resulting unabsorbed overhead claimed in step 3.

MODIFIED EICHLEAY FORMULA VARIATION 2[29]

1) $\frac{\text{Contract Billings}}{\text{Total Billings for the } \textbf{Original} \text{ Contract Period } \textbf{plus } \textbf{Contract Billings for Extended Period}}$ x Total Overhead For **Original Contract Period** = Overhead Allocable to the Contract

2) $\frac{\text{Allocable Overhead}}{\textbf{Original} \text{ days of Contract Performance}}$ = Overhead allocable to the Contract per day

3) Daily Overhead x Number of days delay = **Amount recoverable**

Other Formulas

The *Eichleay* F*ormula* both in its original form and in its variations produces a daily overhead rate as indicated above. At the state level, while some states such as the Commonwealth of Virginia readily accepted the *Eichleay* F*ormula*, others did not. The State of New York in particular was a harsh critic[30] and rejected *Eichleay* out right.

[27] Capital Electric Co. v. United States 729 F.2d 743 (Fed. Cir. 1984)
[28] G.S. & L. Mechanical & Construction, Inc. DOT CAB No. 1640, 86-3 BCA (1986)
[29] As quoted in Capital Electric and also after Zack
[30] Berley Industries, Inc. v. City of New York 45 N.Y.2^{d} 683, 412 N.Y. 2^{d} 589 (1978)

Other methodologies are of course available. The State of New York favoured a direct cost allocation methodology as indicated below:

MANSHUL FORMULA[31]

1) Cost of Work Performed During Delay Period	x	Contract Cost % / Cost + Mark Up %	=	Direct Cost
2) Direct Cost Incurred Delay Period	x	Home Office Overhead % per Bid	=	**Amount recoverable**

As a passing comment, this has similarities to the *Emden* formula, which will be discussed later in connection with the other jurisdictions under consideration.

In addition, a very longstanding and traditional concept among cost and management accountants is to recover overhead as a percentage of direct labour. This is especially common in manufacturing industry. While the following has not been cited in New York case law, it has nevertheless had an influence.

ERNSTROM FORMULA[32]

1) Total Overhead for Contract Period (All Projects) / Total Labor Costs for Contract Period (All Projects) = General Labor/Overhead Ratio

2) Labor/Overhead Ratio x Labor Costs during Delay = **Overhead Allocable to Delay**

However, following Capital Electric and other cases such as Savoy Construction[33] and Wickham Contracting[34], the original Eichleay Formula was re-established as the methodology to be employed. Indeed at the state level, recent cases have reaffirmed its standing such as Triple R Paving, Inc. v. Broward County, 774 So. 2d 50 (Fla. Dist. Ct. App 2000) and Complete General Construction Co. v. Ohio Department of Transportation, 94 Ohio St. 3d 54, 760 N.E. 2d 364 (2002).

[31] Manshul Construction Corp. v. Dormitory Authority, 436 N.Y.S.2nd 724 (App. Div.) (1981) and Zack
[32] *The Construction Lawyer* Vol. 3 No. 1, Winter 1982 as quoted from Zack
[33] Savoy Construction Co. v. United States, 2 Cl. Ct. 338 (1983)
[34] Wickham Contracting Co. v. Fischer, 12 F.3d 1574 (fed. Cir. 1994)

It is regarded as a fair estimate for these claims from both points of view, i.e. the owner and the contractor. While the owner is usually the federal or a state government or agency, by implication Eichleay has informally had some influence too on private sector disputes such as out of court settlements and arbitrations.

Conclusions

It is easy to criticize the "Eichleay Formula" for many reasons – it is too simplistic, mechanical, automatic, etc., an "administrative convenience[35]". It can, depending upon the circumstances, give misleading and inappropriate results. It can be argued, however, that the prerequisites or assumptions (see page 30-31) preclude or at least minimize many of the drawbacks. It has also certainly reduced the level of proof required at common law by the contractor. This is the essential point; once the legal liability has been established, it is an attempt, however rudimentary, to provide a calculation base for damages that would otherwise be almost impractical to demonstrate to a court's satisfaction.

Of course with all the vagaries and variables of the construction industry it is not surprising there are so many possible formulas and variations. The case for consistency, for more certainty, has to be weighed against other issues.

In closing. the status of *Eichleay* can be expressed no better than by *Cushman, Jacobsen & Trimble* at the beginning of paragraph 16-10 on page 16-18.

"Since the reinstatement of the Eichleay formula by the Capital and Savoy (appeals), *the formula has become the method of choice for determining home office overhead damages in claims against the federal government. In fact, the Court of Appeals for the Federal Circuit has held that the Eichleay formula is* ***the exclusive means*** *available for*

[35] Berley Industries, Inc. v. City of New York 45 N.Y.2d 683, 412 N.Y. 2d 589 (1978)

calculating unabsorbed overhead……". (Emphasis added)

So *Eichleay* is **the formula** in actions against the United States Government and many other government and quasi government agencies at the various levels. It is by implication the legal point of reference, whether accepted or not, in all such disputes including those in the private sector.

5.2 Great Britain

Introduction

It is not unknown for the *Eichleay* formula to be referred to in British cases[36] and disputes, but it tends to be rare and only when the historic cost recovery approach is favoured. The underlying premise in most British claims is not in fact historic cost recovery but **the lost opportunity aspect by the contractor.** The judge in *J.F. Finnegan Ltd. v. Sheffield City Council*[37] summed this up very well as follows:

"It is generally accepted that, on principle, a contractor who is delayed in completing a contract due to the default of his employer (the owner)*, may properly have a claim for head office or offsite overheads during the period of delay, on the basis that the work-force, but for the delay,* ***might have had the opportunity of being employed on another contract*** *which would have had the effect of funding the overheads during the overrun period".* (Emphasis added)

It is therefore the opportunity lost by the contractor to do other work that is central to British thinking and the associated overhead recovery and indeed profit resulting from that work. While this is a slightly different way of looking at this category of claims, the problems associated with them are the same, namely:

- Given that the owner's liability for the delay can be proven, it still has to be demonstrated that an actual loss has been incurred by the contractor.
- Given the liability of the owner and given an actual loss has been suffered by the contractor, the quantification of the loss incurred has to be established to the court's

[36] Alfred McAlpine Homes North Ltd. v. Property & Land Contractors Ltd. 76 BLR 59 (1995). Para 22.5
[37] J.F. Finnegan, Ltd. v. Sheffield City Council, 43 Build L.R. 124 (Q.B. 1989)

satisfaction in order for an award to be made. E.g. in *Tate & Lyle*[38] to quote Mr. Justice Forbes, *"While I am satisfied that this head of damages can properly be claimed, I am not prepared to advance into an area of pure speculation when it comes to quantum. I feel bound to hold that the plaintiffs have failed to prove that any sum was due under this head"*.

So, as mentioned before in the U.S. context, because of the difficulties and indeed the impracticalities in many cases of preparing and proving such claims, the use of formulas has arisen. Having said that, British courts have been more reluctant to embrace formulas than have U.S. courts. But they do appear to have had some influence, especially in out of court settlements and arbitrations, e.g. the arbitration references in *Alfred McAlpine*.

The Hudson Formula

The *Hudson* formula is from a reference text by I. N. Duncan Wallace, *Hudson's building and engineering contracts*[39]. The principle involved in the recovery of unabsorbed home office overhead due to an owner-caused delay is to **use the data from the original bid or proposal that the contractor made to the owner. The tendered or planned overhead percentage as bid to the Owner is applied to the original contract sum divided by the original contract period.** As in *Eichleay*, this gives an allocable overhead monetary amount per unit of time.

[38] Tate & Lyle Food and Distribution Ltd. v. Greater London Council, 3 All ER 716 (1982)
[39] Wallace, I. N. D., & Hudson, (1979). *Hudson's building and engineering contracts: including the duties and liabilities of architects, engineers and surveyors.* London: Sweet and Maxwell. Hereinafter Hudson's building and engineering contracts

HUDSON FORMULA

1) Tendered Home Office Overhead & Profit %	x	Original Contract Sum / Original Contract Period (In Weeks)	=	Allocable O/H (Overhead) Per Week
2) Allocable O/H Per Week	x	Period of Owner Caused Delay (in Weeks)	=	**Amount Recoverable**

So the focus is on the planned or bid overhead rate with the clear assumption that this is the contractor's "normal" or "actual" rate, which as indicated in Sec. 4.2 above can be questionable. Indeed in some bids it is difficult to identify what has been included in this respect. For this reason the actual formula itself is not used extensively and has been modified to address this.

The Emden Formula

For the actual contract period, the *Emden* formula takes the total actual overhead (and profit) as a percentage of the contractor's total actual sales and applies it to the original contract amount divided by the original contract period to give an allocable rate per unit of time. This is usually expressed in weeks. This is then multiplied by the number of weeks delay to give the recovery amount of the unabsorbed home office overhead.

EMDEN FORMULA[40]

1) Total Overhead & Profit % / Total Company Turnover (Sales)	x	Gross Contract Sum / Planned Contract Period (In Weeks)	=	Allocable O/H Per Week
2) Allocable O/H	x	Period of Owner-Caused Delay (in Weeks)	=	**Amount to be Recovered**

As in *Hudson,* profit is included with overhead because…"*it is the practice of most contractors of any substance in major contracts, after making their best estimates of the prime cost of the whole project, to add a single percentage thereto for both items"* [41].

This relates the damages claim back to the original bid while at the same time using an actual overhead percentage. This would appear at first glance to be an improvement on Eichleay but there can be anomalies. Quoting Sandori[42], "*In order to determine the average percentage of overhead, Emden typically looks back at the two- or three year period preceding the contract as well as the contract time. Thus, the project overhead allocation to the delayed project is primarily based on the contractor's performance in the past*". So, even though *Emden* is forward looking conceptually, past history is highly relevant and can distort the calculation's end result as Sandori goes on to say. It depends on the level of activity as discussed below.

As in *Eichleay*, there are assumptions or prerequisites to employ the formula. It has to make sense to use it or a variation; otherwise courts will require a full and proper accounting. Per *Hudson*[43]:

"*The formula…assumes the existence of a favourable market when an adequate profit and fixed overhead percentage will be available to be earned during the delay period..* (It) *also assumes an element of constraint – that is to say the contractor's resources will be limited or stretched so that he will be unable to take on work elsewhere if it offers itself until his working capital and site organisation have been released from the delayed contract*".

While *Eichleay* is proportioning the actual overhead by the ratio of the contract billings divided by the total billings – all for the contract period including the delay, *Emden* is

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[40] Barlett, A. (Editor). (2002) *Emden's Construction Law.* London: LexisNexis UK. Hereinafter Emden's Construction Law. Also Zack, page 11

[41] As per Bramble & Callahan page 12-47

[42] Sandori, P. Contractor's Head Office Overhead – What is the Right Formula? *The Revay Report, 22, 2, June 2003.* Retrieved November 19, 2004 from http://www.revay.com/english/publications.html Hereinafter Sandori

taking the actual combined overhead and profit percentage of revenue and applying it to the bid contract amount divided by the original contract period. It all depends upon the actual time period used – whether business activity was increasing or decreasing or indeed staying flat.

The *Emden* Formula is a variation of *Hudson* and is in fact sometimes quoted as such. Some major British cases referencing *Emden* are:

1. J.F. Finnegan, Ltd. v. Sheffield City Council, 43 Build L.R. 124 (Q.B. 1989)
2. Alfred McAlpine Homes North Ltd. v. Property & Land Contractors Ltd. 76 BLR 59 (1995)
3. St. Modwen Developments Ltd. v. Bowmer & Kirkland (1996)
4. Norwest Holst Construction Ltd. v. Co-operative Wholesale Society (1998)
5. Beechwood Developments Ltd. v. Stuart Mitchell (2001)

The judge in *Finnegan* found in favour of using the *Hudson* formula but he was clearly referring to *Emden.* The *Alfred McAlpine* case is of particular interest to this paper because the method approved by the arbitrator and upheld by the court "*closely resembles*" the *Eichleay* formula as mentioned earlier. (*McAlpine* inter alia pages 31 & 33). The *Emden* formula is, however, mentioned and considered at length.

In *St. Modwen Developments and Norwest Holst Construction*, the use of the *Emden* formula was approved. Again, in the Scottish case of *Beechwood Developments Ltd. v. Stuart Mitchell (2001)* the judge approved the use of *Emden* referring to it, however, as the *Hudson* formula.

[43] Brewer, (1996) Formulating the cost of delay. *Brewer Consulting* newsletter Nov 7, 1996. Retrieved June 1, 2005 from http://www.brewerconsulting.co.uk/cases. Page 1. Hereinafter Brewer.

Conclusions

Although not embraced as such by British Courts, formulas are used as a major point of reference, one way or another. Bearing in mind the considerably lower level of litigation compared to the U.S., there is as a corollary a relatively higher level of arbitrations and out of court settlements. Formulas, particularly *Emden*, are reputedly used in these on a regular basis. (E.g. arbitration references in *Alfred Alpine*).

As indicated above, the *Emden* Formula is a variation of *Hudson* and is in fact sometimes quoted as such. It is frequently referenced in Canada as we shall see (and consequently very occasionally in the United States[44]).

[44] E.g. Eastley, Inc., Synder, Inc. v. Commonwealth of Pennsylvania , Dept of Gen. Servs., Pa Bd. Of Claims , No. 846 (1988). Also Zack page 8

5.3 Canada

Note: This study excludes Quebec

As stated in the objectives, this paper examines and compares the subject of overhead damages in the general context of common law. It therefore does not include a study of the legal position in the Province of Quebec, which with its French heritage administers its own Civil Code, similar to the legal systems of continental Europe.

Introduction

As might be expected, Canadian courts have drawn upon the common case law and jurisprudence of the courts in both the United States and Great Britain and in fact to some extent this has been a two way process with Canadian cases being quoted in both those jurisdictions. For example, in the British case *St. Modwen Developments Ltd. v. Bowmer & Kirkland (1996)*, reference is made to both *Ellis-Don Ltd. v. Parking Authority of Toronto (1978)* and *Shore & Horwitz Const. Co. v. Franki of Canada Ltd. S.C.R. 589 (1964).* In addition, as discussed above, the *Emden* formula is occasionally referenced in U.S. cases sometimes via Canadian case law. (See note 47 above).

Use of Eichleay and Hudson / Emden Formulas

As a general comment, it appears that the Canadian view tends to favour the lost opportunity cost concept of overhead and profit rather than the historic cost concept of underabsorbed overhead, i.e. the *Hudson/ Emden* formulas rather than *Eichleay*. Both, however, are credible in Canada as the following analysis illustrates.

Examining some notable cases will assist in assessing the situation in Canada. The case of *Shore & Horwitz Const. Co. v. Franki of Canada Ltd. S.C.R. 589 (1964)* has already been referred to on page 16 regarding the theory of home office overhead damages from the opportunity cost viewpoint. The *Emden* formula or a variation appears to have been

used in this court case and, although the claim was successful, there was a dissenting opinion. This was based not on the principle of an overhead claim, but on the lack of evidence of an actual loss. This involves the basic assumptions articulated by *Hudson* as mentioned in the Ellis-Don case below.

Webb & Knapp (Canada) Ltd. v. City of Edmonton 11 D.L.R. (3rd) 544 (1970) as mentioned previously makes the point that, *"it is no answer to the claim that the loss is difficult to assess or calculate",* (if the liability is proven) thereby supporting estimates and approximations rather than exact proof.

Lets now examine two important cases in some detail.

Ellis-Don Ltd. v. Parking Authority of Toronto (1978)

A leading Canadian case regarding the claiming of home office overheads is *Ellis-Don Ltd. v. Parking Authority of Toronto* [45]. Ellis-Don, a major general contractor in Ontario, was seriously delayed by the owner, the Parking Authority, and sued for damages. It was a comprehensive claim and the liability for the delay was found by the court to be that of the owner.

As regards the overhead claim, the following quotes from the jurisprudence by O'Leary J. clearly demonstrate the Canadian positions in the matters that have been discussed to date:

- Para.29 "*The plaintiff alleges that if its supervisory engineering and managerial staff had not been tied up for an extra 17 ½ weeks on this project they could have been employed elsewhere ……earning off-site overhead and profit…".* As indicated above, the claim is based upon the lost opportunity to earn off-site overhead and profit.

[45] Ellis-Don Ltd. v. Parking Authority of Toronto 28 Build. L.R. 98 (1978)

- Para.30 *"Ellis-Don in its bid. …calculated and included therein 3.87% of the total bid for its fixed overhead and profit on the work to be done……3.87% was a regular and normal amount for Ellis-Don to include in a bid for such a project for fixed overhead and profit and …regularly achieved such a return on its contracts …".* This is very interesting because reference is made to the original bid data as in the *Hudson* formula. In this case the general criticisms of *Hudson* are plainly invalid, namely that the overhead and profit percentage included in the bid can be difficult to discern and, regardless, the assumption that this approximates to actual is questionable. Paragraph 30 continues, however, and indicates that Ellis-Don's accounting records show a recovery of slightly more than 3.87% on this particular contract, returning $144,279 on a contract tender of $3,727,258. With the actual number for this contract being available, there is no need for estimates or approximations.
- Para.33 "*…it would have taken Ellis-Don 59 weeks to earn overhead and profit of $144,279.00…(*or*) $2,445.40 per week. If the project had not been delayed the 17 ½ weeks…Ellis-Don by putting that same staff to work on other projects would have received extra earnings from them for off-site overhead and profit of 17 ½ x $2,2445.40 = $42, 794.50".* This then is a variation of the *Emden* formula and this is illustrated and discussed later in paragraph 67 with several quotes from *Hudson's building and engineering contracts.* These include a caveat and two (2) related assumptions, which evidently Ellis-Don met.
  1. Caveat*: "…the profit budgeted for by the contractor in his prices was in fact capable of being earned by him elsewhere had the contractor been free to leave the delayed contract at the proper time…".*

2. Assumptions *"…on average the contractor did not habitually underestimate his costs when pricing, so that the profit percentage was a realistic one at that time, and…there was thereafter no change in the market, so that work of at least the same general level of profitability would have been available to him at the end of the contract period."* Again these are necessary assumptions or prerequisites to prove an actual loss was incurred (see the Eichleay assumptions, pages 30-31); if no work was available or only available at prime cost, the opportunity cost of lost overheads and profit is zero.

- Para.62 *"The one area in which there was room for argument, was the claim for $42,794.50 for lost off-site overhead and profit resulting from a 17 ½ week delay…"*. This demonstrates once again the controversy surrounding overhead claims.
- Para.68 *"No attempt was made by the plaintiff to break down the figure of 3.87% of the total contract price, between overhead and profit and I know of no reason why it was necessary to do so. If a contractor is entitled to damages for loss of income to cover head office overhead, why should he not also be entitled to damages for loss of income that would result in normal profit? In argument counsel for the defendant agreed that there was no logical distinction to be drawn between a claim for lost profit and a claim for lost off-site overhead"*. This reinforces *Hudson's* assertion mentioned earlier that contractors in the context of bidding commonly do not make any distinction in this regard.

This case epitomizes the Canadian position regarding home office overhead claims in an action against an owner for delay damages and is often quoted as such.

Bemar Construction (Ontario) Inc. v. Mississauga (City) (2004)[46]

Let us look now at a very recent case where a contractor sues the owner for delay and loses, unable to prove the owner was in any way responsible for the delay. The reasons for this are beyond the scope of this paper but it is interesting to note the arguments and the basis of the calculations put forward in the pleadings concerning home office overheads.

"...Both…… agree that the proper approach is to determine a per diem rate and multiply by the delay period". (para.340). Reading through the case, however, it becomes clear that, while one witness,*"utilized the Eichleay formula"*, (para.362 2.) albeit using budget numbers, the other took an approach and provided calculations, whose basis was not readily apparent as a recognizable or commonly accepted method. In other words an individual approach was taken, which would or would not have been applicable depending upon the unique circumstances of the case. It is also noteworthy that Fragomeni J. does make a passing reference to *Hudson's building and engineering contracts* in paragraph 345.

Continuing at paragraph 363 Fragomeni J. states, *"…the onus is on the plaintiff to demonstrate that the delay prevented it from earning similar amounts elsewhere to recover its ongoing home office expenditures. Bemar Ontario must demonstrate that as a result of the delay, it was not able to obtain other work to absorb the overhead during the period of the delay"*. This plainly relates back to the assumptions or prerequisites of *Eichleay* (see pages 30-31). Unless an actual loss is incurred, there cannot be any damages.

[46] Bemar Construction (Ontario) Inc. v. Mississauga (City) BSCST/2004 –021

Further at paragraph 365 Fragomeni J. states, *"I agree……. that the evidence appears to demonstrate that Bemar Ontario's ability to tender for contracts and generate revenue was not inhibited by the delay……."*. That being said, it cannot be proved that an actual loss was incurred and therefore the overhead claim is rejected (para.368).

Although the basis of the calculations becomes irrelevant to the case, it is significant that *Eichleay* was put forward in the pleadings and considered by the Court.

Conclusions

At common law, civil actions in Canada for delay involving home office overheads share many of the features and problems as those in the United States and Great Britain. The controversy regarding the validity of the damages repeats itself here for the same reasons and likewise the difficulties associated with evaluating these damages are no less problematic.

Both these comparative jurisdictions have provided formulas as bases for these calculations, but these are not automatically accepted and have to be justified to the court on sound logical legal grounds. Depending upon the circumstances, Canada, as it were, takes the best from both.

5.4 Australia

Introduction

The situation in Australia is very different to that in North America. While it is a common law jurisdiction with the same English legal heritage as the others under consideration in this paper, its level of litigation is considerably less. This contrasts especially with the position in the United States but also to a smaller degree with that in Canada and Great Britain. Arbitration is by far the preferred method of settlement in Australia[47].

Use of Eichleay and Hudson/Emden Formulas

The *Hudson* formula is cited in Australian case law and some notable examples are briefly mentioned below, often where an arbitration decision has been challenged. *Eichleay* does not seem to have any standing, and any references to it would appear to be very rare.

1. State of South Australia v. Fricker Carrington Holdings Pty. Ltd. 3 Bldg. & Const. L. 72 (1987)

The *Hudson* formula is mentioned, referencing *Hudson's building and engineering contracts* but the point is made quite strongly that it is not in any statute or regulation and its use has to be justified. This is the same concern as discussed previously regarding other jurisdictions.

2. Hughes Bros Pty. Ltd. v. Minister For Public Works 55011/1991 (Unreported NSWSC 1994)

Part of the claim, *"included off-site costs and loss of profit"*. Reference is made to standard contract provisions, specifically clause C148, which deals with these matters.

[47] Email correspondence attached from David Hollands, mediator, adjudicator, & arbitrator, Auckland, New Zealand. See website http://www.neutral.co.nz. Note 1. Hereinafter Hollands

(See Arbitration below). The *Fricker Carrington* case above is cited and it is stated, *"in principle it must be otherwise shown that a true loss has been suffered"* (as implied above). Rolfe J. then quotes from *Engineering Law and the ICE Contracts* by *Abrahamson* that are in the same vein as *Hudson's building and engineering contracts.*

3. Bulk Materials (Coal Handling) Pty. Ltd. v Compressed Air & Packaging Systems (NSW) Pty. Ltd. 55020/1996 (Unreported NSWSC 1997)

Regarding overhead costs, the plaintiff put forward *"a weighted average of percentages of total operational overheads to sales revenue"* over a four- year period. The *Fricker Carrington* case was cited referencing *Hudson* and the above method judged to be *"plainly inappropriate".* Regardless of the methodology, the overhead claim was rejected.

Other cases referencing *Hudson* in delay claims include *Thiess Watkins White Construction Ltd. v. Commonwealth of Australia (23 April 1992, unreported)* and *Milligan Contractors Pty. Ltd. & Anor v. Jaxon Construction Pty. Ltd. & Anor WASC 134 (2004).*

Arbitration

It appears from jurisprudence in case law that the *Hudson* formula is in general use. Quoting Zelling J. in the *Fricker Carrington* case*: "…there is no doubt (Hudson) is a formula very frequently used in cases of this type"* and *"…I have always understood the formula in Hudson to be a good starting off point in this type of case"*. Moreover *"…I am sure that parties in dispute frequently use the formula"*. He then goes on to make the point as mentioned above that unless both parties agree, the use of the *Hudson* formula has to be justified.

Additionally, references are made to standard contract provisions, specifically clause C148, which deals with offsite overheads and loss of profits. Standards Australia publishes various standards relating to the construction industry including *AS 4000-1997 General conditions of contract* and *AS 4902- 2000 General conditions of contract for design and construct.*

Email correspondence[48] from Geoff Clarke of Standards Australia indicates, "*AS 4000 sets out the procedures for submitting and approving claims, and for resolving disputed claims. But…there is no explicit "formula", nor a proforma for setting out the details of such a claim…*".

Comparison with New Zealand [49]

It is interesting in passing to comment very briefly on the situation in New Zealand. "*There are probably no* (head office overhead) *legal cases in New Zealand, as construction disputes usually go to arbitration."* per David Hollands as referenced in footnotes 47 and 49. Hollands continues, *"The principles for assessing delay claims are included in* (New Zealand Standard) *NZS3910: 2003"*. So there are set formulas for calculating delay claims including home office or offsite overhead. This is plainly derived from *Hudson*. Hollands' correspondence is attached in Section 8.2.4 and is noteworthy for its general interest. Clause numbers refer to New Zealand Standard 3910.

CONCLUSIONS

As discussed earlier, Canada has been considerably influenced by US and UK case law including references to the main formulas involved. So it is interesting to see if there are

[48] Email correspondence attached from G. Clarke, Projects Manager, Management and Business Group, Standards Australia. Website http://www.standards.org.au
[49] Hollands. Notes 2 & 3

any parallels to be drawn with Australia. As mentioned above, the situation is quite different with a heavy emphasis of solving disputes through arbitration rather than litigation. That having been said, the *Hudson* formula appears to be frequently used in overhead claims for delay and is often the initial point of reference regardless of the final outcome.

6. COURT PRESENTATIONS

"A picture is worth a thousand words"
Anonymous

As previously discussed, home office overhead expenses as part of a delay claim by a contractor can be extremely controversial. (See Section 4.2) Accordingly it can present special challenges in explaining or demonstrating how an actual loss was incurred and the quantification of that loss, especially to non-financial people.

Effective presentations in court (or in an arbitration hearing) of a home office overhead claim demonstrating that a real loss was suffered and evaluating it, can therefore make a significant and possibly a crucial contribution to the plaintiff's case.

Some informative generic charts would include:

- The nature of fixed overhead, showing the steps up and down on a long term basis (Chart 1)
- The affect of a delay on a construction schedule, showing (a) the unabsorbed overhead at the time (Chart 2), and (b) the lost opportunity to absorb overhead and earn profit afterwards (Chart 3)
- The Eichleay formula (Chart 4)
- The Hudson and Emden formulas (Chart 5)

These follow at the back of this section.

Chart 1, Court Presentations, Section 6

Fixed Home Office Overhead Expenses - Examples of Steps Up and Down

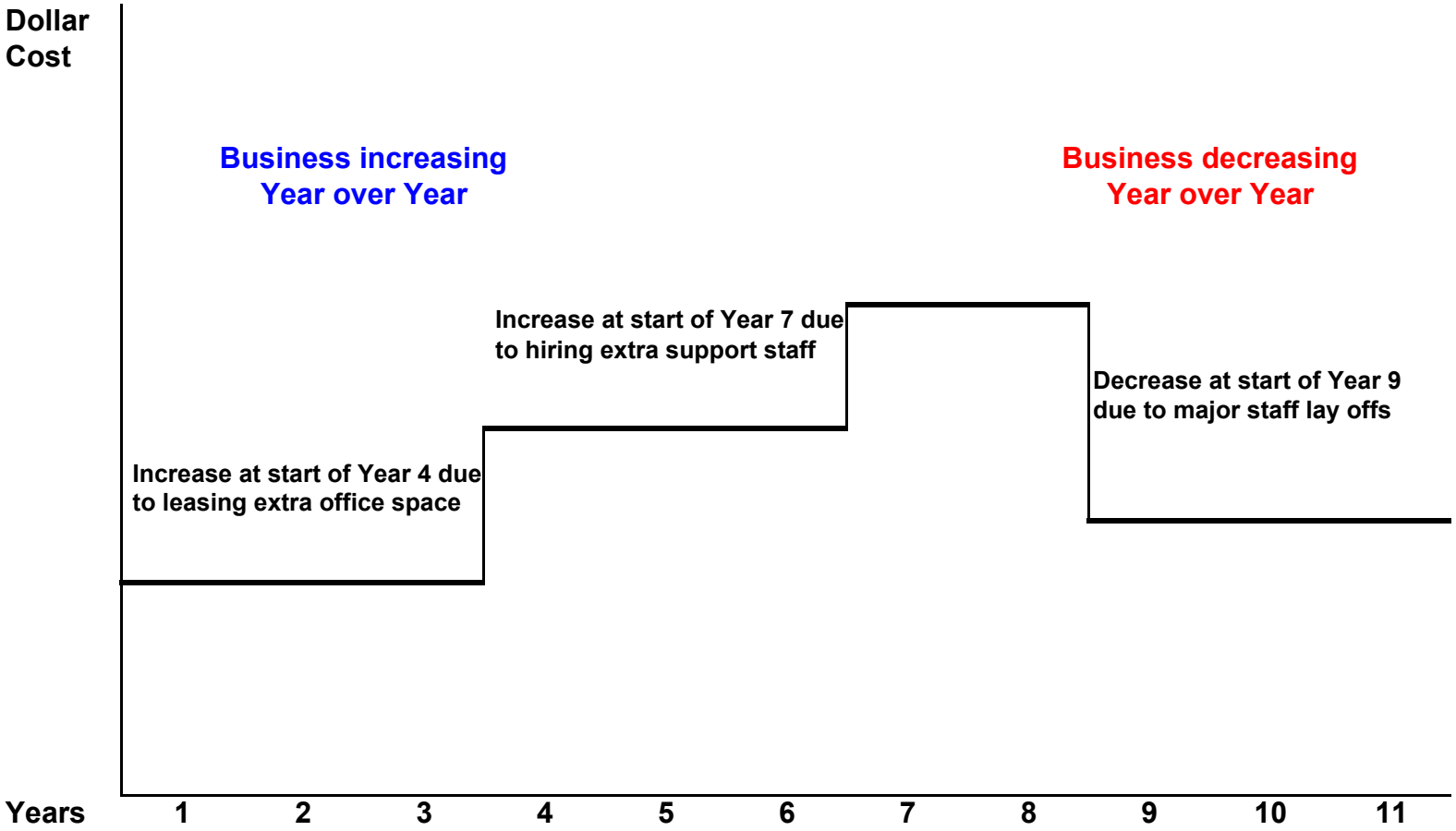
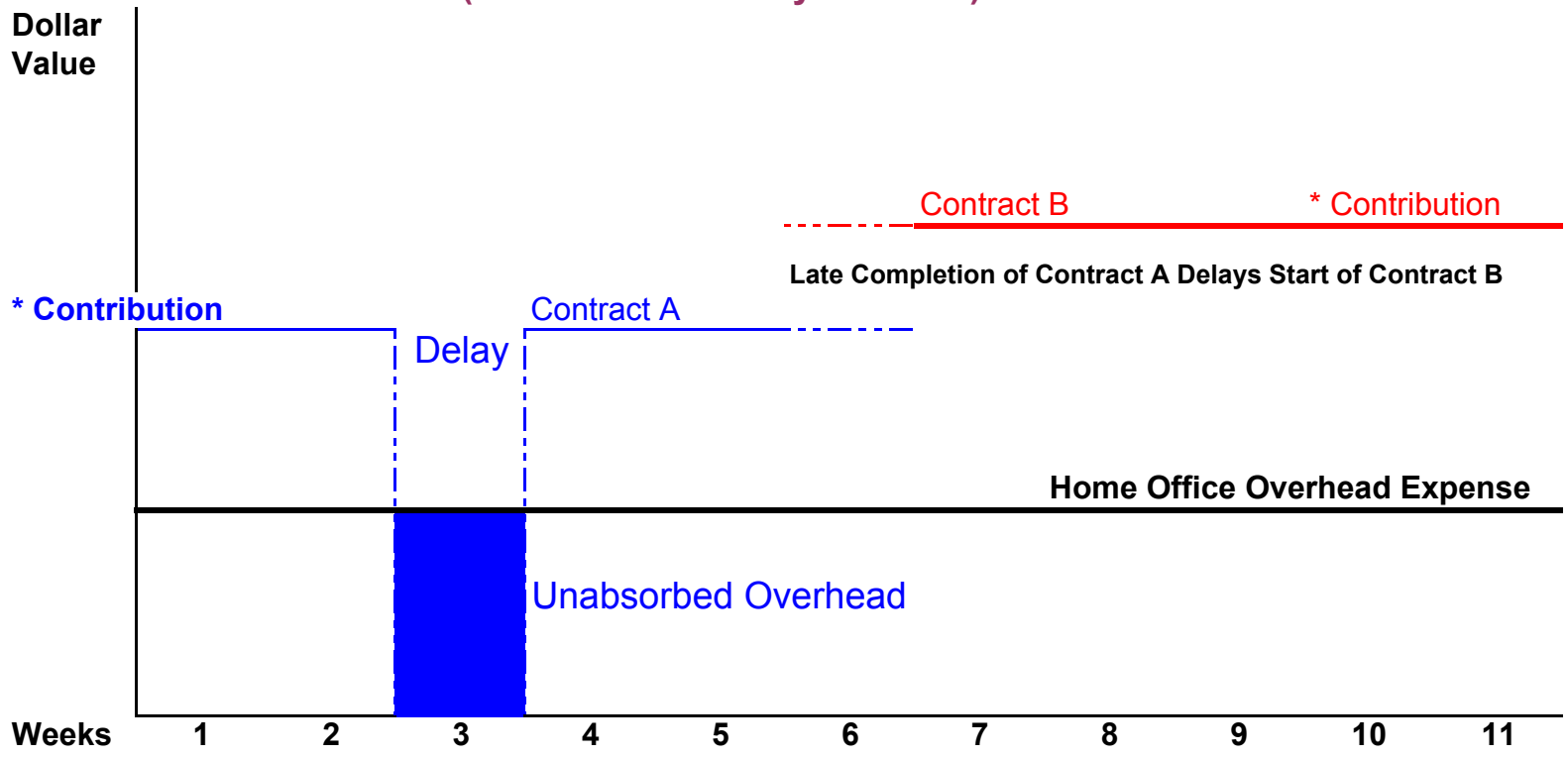


Chart 2, Court Presentations, Section 6

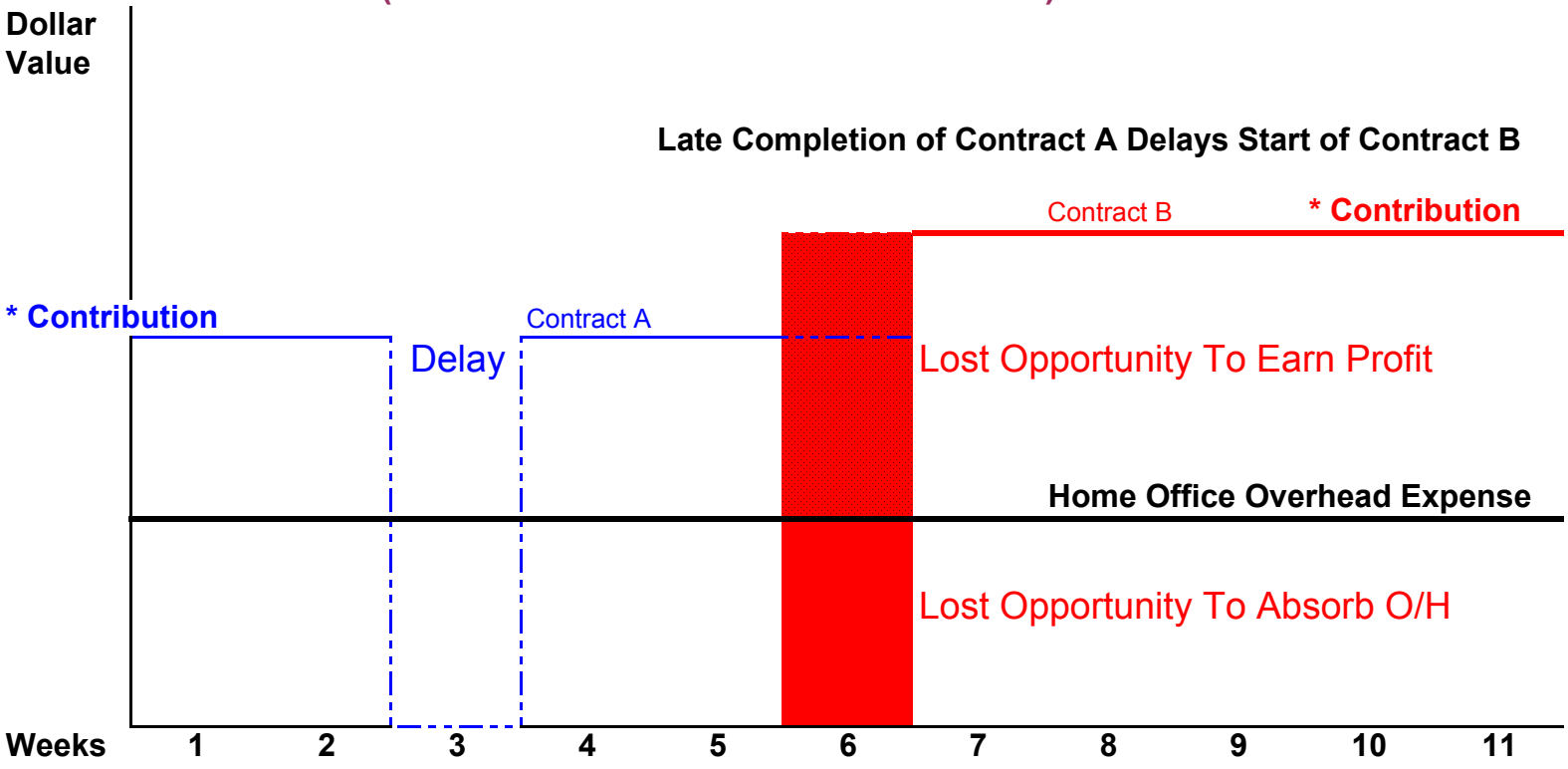
Affect of a Delay on a Construction Schedule Showing the Unabsorbed Overhead (Reference Eichleay Formula)



*** Contibution = the contibution to overhead and profit, that is Sales Revenue less Direct Costs (See Section 4.2 pages 20-21)**

Chart 3, Court Presentations, Section 6

Affect of a Delay on a Construction Schedule Showing The Lost Opportunity to Absorb Overhead and Earn Profit (Reference Hudson/ Emden Formulas)



*** Contibution = the contibution to overhead (O/H) and profit, that is Sales Revenue less Direct Costs (See Section 4.2 pages 20-21)**

Chart 4, Court Presentations, Section 6

Eichleay Formula

1)	Contract Billings Total Billings for the Actual Contract Period	x	Total O/H for Contract Period	=	O/H Allocable to the Contract
2)	Overhead (O/H) Allocable to the Contract Actual Days of Contract Performance			=	Daily Contract Overhead (O/H)
3)	Daily Contract O/H	x	Number of Days Delay	=	Amount Recoverable

Veried with Cushman para 4.20

Chart 5, Court Presentations, Section 6

Hudson and Emden Formulas

Hudson Formula

1)	Tendered Home Office Overhead & Profit as % (As Per Contract)	x	Original Contract Sum / Original Contract Period (in Weeks)	=	Allocable O/H Per Week
2)	Allocable Overhead (O/H)	x	Period of Owner-Caused Delay (in Weeks)	=	Amount Recoverable

Emden Formula

1)	Actual Home Office Overhead & Profit as % of Turnover (Sales)	x	Original Contract Sum / Original Contract Period (in Weeks)	=	Allocable O/H Per Week
2)	Allocable Overhead (O/H)	x	Period of Owner-Caused Delay (in Weeks)	=	Amount Recoverable

CONCLUSIONS

The detailed study of this subject could potentially be a very extensive work indeed. Within the scope of this paper, a reasoned overview has been presented including the major case law that has affected it.

The important points arising from the analysis of the issues are:

1. Home or head office overhead claims for damages regarding owner-caused delays are awarded in principle by the courts and in arbitrations in all four common law jurisdictions under consideration. There can be problems, however, that can result in this category of claims, this head of damages, being extremely controversial.
2. Two (2) fundamental reasons for this controversy are apparent:
   (a) It can be difficult to prove that an actual loss was suffered. Home office overheads by their very nature are fixed in the short run and not directly related to specific contracts. Since the contractor would have usually incurred these costs regardless, the question then arises as to how the contractor could be out of pocket. To some non-financial professionals it seems highly improbable.

   It then falls to financial experts to explain the cost accounting concept of overhead recovery and to legal counsel to demonstrate not only that the delay was caused by the owner but also that an actual loss was suffered and could not be mitigated. If the delay was for an uncertain period of time, for example, and the owner required the contractor to be on standby, this may not be difficult, but it can often be a much more complicated matter.

   (b) The second reason for controversy is having proved that a loss was incurred as above, the matter then arises regarding the quantum of the damages, i.e. the evaluation of the claim, and explaining this to the court's satisfaction. Due to its

potential complexity, this is certainly the arena of the financial expert, the investigative and forensic accountant. Case law does differ here with some jurisprudence supporting estimates, even if approximate, and some considering these claims, even when proven in principle, to be too speculative if their exact amount is uncertain. Further to this, because of the difficulties and the sheer impracticalities in many cases, this has given rise to the use of formulas and their variations.

3. In the United States, case law developed from the 1940's onwards in the construction sector specifically concerning the Federal Government and its agencies. The landmark case occurred in 1960 with *Eichleay Corp., ASBCA No. 5183, 60-2 BCA*. The *Eichleay* formula devised in this case is shown in Chart 4 with the basic underlying theory explained in Chart 2. (See Court Presentations, Section 6.) Essentially the overhead claim is based upon the loss of overhead recovery due to the delay and the contractor's inability to perform substitute work. There is also a clear assumption that the contractor is working at full capacity in the time frame under consideration. The assumptions or prerequisites to using *Eichleay* are stated in detail on pages30-31.

   Since then, *Eichleay* has gone full circle, having been accepted, modified, rejected, and then reinstated by the appeal in *Capital Electric v. United States, 729 F.2d 743 (Fed. Cir. 1984)*. It is now the "exclusive means" in federal government litigation of this nature. It also has standing to varying degrees in the other levels of government and indeed the private sector. It is not, however, accepted at face value and its use has to be justified. Having said that, the *Eichleay* formula remains the primary point of reference for home office overhead compensation in the United States.

4. In Great Britain, the *Hudson* formula and its derivative or variation the *Emden* formula have been used for similar reasons. Although not officially sanctioned by the courts, these formulas nevertheless have considerable influence in litigation, out of court settlements, and arbitrations. The formulas are shown in Chart 5 with the basic underlying theory explained in Chart 3. (See Court Presentations, Section 6.) Essentially the overhead (and profit) claim is based upon the loss of opportunity to do other projects due to the delay. Otherwise the contractor would have recovered overhead and earned a profit on these other projects. As with *Eichleay*, there is a clear assumption that the contractor is working at full capacity in the time frame under consideration.
5. The *Hudson/Emden* formulas have had a significant influence in the English-speaking world sharing a common law heritage. In both Canada and Australia they are used both in the courts and in arbitrations. There are important differences, however, with Canada also using the *Eichleay* formula when appropriate and having a much higher level of litigation. In Australia, most construction disputes go to arbitration with litigation occurring mainly when arbitrators' decisions are challenged. In New Zealand, litigation is virtually unknown in this area with disputes settled by arbitrators in accordance with a construction standard. Without actually identifying it as such, this incorporates the *Hudson* formula.
6. In terms of comparison, *Eichleay* and the *Hudson/Emden* formulas do have similarities, both calculating an overhead recovery rate per time unit and applying it to the delay period. The crucial differences, however, are:

- *Eichleay* is based upon **actual numbers** including the delay period. The *Hudson* formula is based on the **original bid numbers** with *Emden* using the **actual overhead percentage** of sales.
- *Eichleay* is concerned with unabsorbed overhead **in the past** whereas *Hudson/Emden* is concerned with the **lost opportunity in the future** to recover overhead (and profit). How significant the inclusion of profit is in *Hudson/Emden* as opposed to *Eichleay* is uncertain because in practice contractors in this context tend to combine them.

7. In terms of realism in the marketplace, it really does depend on the exact circumstances as to which formula is better or if any formula is justified. The problem is that there is no standard formula that will produce a fair and reasonable result in all circumstances – no "one size fits all" solution. This is the reason for there being so many other minor formulas and variations.

In these circumstances, the contributions of financial experts, such as Investigative and Forensic Accountants (IFA's), can be significant in ensuring that proper and defendable calculations are presented to the court to assist it in its deliberations. In this context the use of charts can be highly beneficial in assisting to illustrate and explain the issues involved.