THE EVOLUTION OF GLOBAL CLAIMS AND JOHN DOYLE CONSTRUCTION LIMITED v. LAING MANAGEMENT (SCOTLAND) LIMITED

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I. INTRODUCTION

It is almost 40 years since the English courts opened the door to global claims, recognising that a complex interaction between the consequences of the various causes of loss might make it extremely difficult or even impossible to ascertain with accuracy the effects of any single causative event. However, the door was only slightly ajar and, prior to admitting any global claim, the courts have systematically imposed strict conditions with respect to the pleadings and above all with respect to any contribution to the damage that may have been made by the claimant himself.

A global claim, in its crudest form, alleges that the entire difference between the contractor's tender price and his actual costs has arisen from a number of breaches by the employer, and makes little or no attempt to link the alleged effects to individual breaches. In the event that the contractor has himself made a material contribution to this increase in costs, either by under-pricing his tender, by his own inefficiencies or otherwise, the employer would be unduly penalised if the courts were to accept such a claim without imposing strict conditions. The courts have therefore chosen to reject global claims where the employer has been able to show that the contractor has made more than a trivial contribution to the alleged damage.

This position has, unfortunately, often led to a result which is equally unjust. Not infrequently, it is the employer who has obtained a windfall, a contractor's claim that is justified to a large extent being rejected because of a single cause of damage attributable to the contractor himself for which it is impossible or impracticable to isolate the effects.

On large projects, which cost hundreds of millions of dollars or euros, employing thousands of workers, it is not unusual to encounter thousands of causes of delay and/or loss. Some of these causes can be treated in isolation and their effects evaluated and proved; inevitably, and no matter what records the contractor maintains, others cannot and must be treated globally. (An example is the loss of productivity that may result from a number of variations instructed with respect to the same work, within a short period.)

In such circumstances, the employer and his representatives frequently rely on two lines of defence. The first is to impose (often by contract) a level of proof of cause and effect that the contractor is inevitably unable to satisfy, despite the courts having ruled that causation is to be approached with "common sense"[1] without an "overly microscopic analysis".[2] The second is to find some cause for which the contractor is responsible and that might have contributed to the damage for which he has claimed globally, in the knowledge that the courts will reject the global portion of the claim in its entirety because of this one cause.

As a result of these two lines of defence, the contractor is often obliged to settle at a figure that falls short of compensating him for the damage caused by the employer.

However, a recent decision of the Scottish Court of Session,[3] relying heavily on the position in the United States, has re-examined the complexity of proving claims in construction and should result in more equitable outcomes in the event that it is impossible or impracticable to isolate the various causes of damage, some of which are the responsibility of the employer, some of which are the responsibility of the contractor. In future, the loss is to be apportioned on the basis of the relative importance of the causative events, in producing the loss.

Part I of this paper examines the development of the law within the Commonwealth with respect to global claims. It is completed by an explanation of the techniques used by the claimant in the recent *John Doyle* case. Part II of this paper examines the development of United States law with respect to claims made using the TCM (Total Cost Method) or global approach.

PART I: A COMMONWEALTH PERSPECTIVE

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It has long been recognised by the courts that in certain complex situations, it may be difficult or impossible to accurately evaluate the damage arising from each of a number of interacting causes, but that this difficulty should not prevent the claimant from recovering from the defendant.

In the words of Donaldson J in *J Crosby & Sons* v. *Portland Urban District Council*[4]:

> "Since, however, the extent of the extra cost incurred depends upon an extremely complex interaction between the consequences of the various denials, suspensions and variations, it may well be difficult or even impossible to make an accurate apportionment of the total extra cost between the several causative events.

[1] *John Holland Construction & Engineering Pty Ltd* v. *Kvaerner R J Brown Pty Ltd* (1996) 82 BLR 81.
[2] *P & O Developments Ltd* v. *Guy's & St Thomas' National Health Service Trust* [1999] BLR 3.
[3] *John Doyle Construction Ltd* v. *Laing Management (Scotland) Ltd* (2004).
[4] (1967) 5 BLR 121.

> . . . so long as the arbitrator does not make any award which contains a profit element, this being permissible under clauses 51 and 52 but not under clauses 41 and 42, and provided he ensures that there is no duplication, I can see no reason why he should not recognise the realities of the situation and make individual awards in respect of those parts of individual items of the claim which can be dealt with in isolation and a supplementary award in respect of the remainder of those claims as a composite whole."

This ruling was followed by Vinelott J in *London Borough of Merton* v. *Stanley Hugh Leach Ltd*[5]:

> "The position in the instant case is, I think, as follows. If application is made . . . for reimbursement of direct loss or expense attributable to each head of claim, then provided of course that the contractor has not unreasonably delayed in making the claim and so has himself created the difficulty the architect must ascertain the global loss directly attributable to the two causes, disregarding, as in *Crosby*, any loss or expense which would have been recoverable if the claim had been made under one head in isolation and which would not have been recoverable under the other head taken in isolation. . . .
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> I think that I should nevertheless say that it is implicit in the reasoning of Donaldson J, first, that a rolled up award can only be made in a case where the loss or expense attributable to each head of claim cannot in reality be separated and secondly that a rolled up award can only be made where apart from that practical impossibility the conditions which have to be satisfied before an award can be made have been satisfied in relation to each head of claim."

Thus, in 1985, the position was relatively clear: the contractor was entitled to be awarded individual amounts with respect to individual causes the effects of which could be isolated and to be awarded a composite amount with respect to those causes for which it was not possible to separate the loss or expense attributable to each, provided that, for each cause, the contractor had shown that all other conditions for a successful claim had been satisfied.

The need to satisfy the conditions for an award to be made in relation to each head of claim, and the related obligation upon the plaintiff/claimant to plead his case with sufficient particulars was confirmed by the Privy Council in dealing with the Hong Kong case of *Wharf Properties Ltd* v. *Eric Cumine Associates (No 2)*.[6]

> "Those cases establish no more than this, that in cases where the full extent of extra costs incurred through delay depend upon a complex interaction between the consequences of various events, so that it may be difficult to make an accurate apportionment of the total extra costs, it may be proper for an arbitrator to make individual financial awards in respect of claims which can conveniently be dealt with in isolation and a supplementary award in respect of the financial consequences of the remainder as a composite whole. This has, however, no bearing upon the obligation of the plaintiff to plead his case with such particularity as is sufficient to alert the opposite party to the case which is going to be made against him at the trial. ECA are concerned at this stage not so much with quantification of the financial consequences but with the specification of the factual consequences of the breaches pleaded in terms of delay."

In commenting this judgement,[7] I N Duncan Wallace stated:

[5] (1985) 32 BLR 51.
[6] (1991) 52 BLR 1.
[7] *Hudson's Building and Engineering Contracts*, 11th ed., 1995, Sweet & Maxwell, vol. 1, pp. 1086–1089.

> "While a careful analysis of the different factors contributing to a single overall delay may well not be an easy inquiry, and while overlapping delays due to two or more factors may also occur in such cases which will need to be separated and identified, particularly where quantum is being assessed, and different findings on liability are possible, these are a commonplace of construction contracts, and assertions or findings that it is impossible to separate such different parts of a delay claim should be treated with extreme reserve; if made by a plaintiff, whether owner or contractor, they may well conceal the absence of any genuine claim, and if made by an arbitrator or other tribunal will savour of 'taking the easy way out' or of inexperience in assessing construction claims."

While, undoubtedly there are cases where it is, in reality, possible to isolate the effects of individual causative events but either the claimant or the arbitrator fails to do so, Duncan Wallace seemingly dismissed all cases of disruption, which is often an inevitable consequence of a combination of causative events.

He interpreted the judgment in *Wharf* v. *Eric Cumine Associates* and that of the *Humberoak*[8] case to represent:

> "... a fully justified and overdue judicial response to the tendency ... for exaggerated claims to be advanced, based on unrealistic theoretical assumptions which conveniently dispense with any detailed investigation of either causation or quantum, and which are often the result of so-called expert claims advice obtained at an early stage."

He submitted that: "... in the English and related Commonwealth jurisdictions, claims on a total cost basis, *a fortiori* if in respect of a number of disparate claims, will *prima facie* be embarrassing and an abuse of the process of the court, justifying their being struck out and the action dismissed at the interlocutory stage."

He went on to suggest that:

> "... even if such a claim is allowed to proceed, it should only be on the basis that, on proof of any not merely trivial damage or additional cost being established (or indeed any other cause of the additional cost, such as under-pricing) for which the owner is not contractually responsible, the entire claim will be dismissed. Any other course places the practical onus of proving the extent of the plaintiff's damage on the defendant or on the court itself."

Fortunately for contractors, the harshness of the first of these submissions was quickly tempered by subsequent judgments. Less fortunately, the second has remained bitingly hard for a much longer period and in the view of the authors, has often been exploited in order to prevent contractors from recovering the damages to which they are fairly entitled.

With respect to the first of the above submissions from Duncan Wallace, Saville LJ stated in *British Airways Pension Trustees Ltd* v. *Sir Robert McAlpine & Sons Ltd*[9]:

> "The basic purpose of pleadings is to enable the opposing party to know what case is being made in sufficient detail to enable that party properly to prepare to answer it. To my mind it seems that in recent years there has been a tendency to forget this basic purpose and to seek particularisation even when it is not really required. ... Pleadings are not a game to

[8] *McAlpine Humberoak Ltd* v. *McDermott International Inc* (1992) 58 BLR 1.
[9] (1994) 72 BLR 31.

> be played at the expense of the litigants, nor an end in themselves, but a means to the end, and that end is to give each party a fair hearing. Each case must of course be looked at in the light of its own subject-matter and circumstances. Thus general statements to the effect that global or composite claims are embarrassing and justify striking out, to be found for example in *Hudson* (11th edition) paragraph 8–204 are not automatically applicable to every case."

In the Australian case of *John Holland Construction & Engineering Pty Ltd* v. *Kvaerner R J Brown Pty Ltd*,[10] Byrne J held that:

> "Where a plaintiff establishes a breach of contract it will not be denied relief on the ground only that it is difficult to estimate the damages which flow from the breach. . . . This being the case, it may be said that a statement of claim which is unable to set out with precision the amount of loss claimed ought not to be struck out. But even in such a case, the plaintiff must identify what is the loss alleged to have been suffered and which cannot be quantified and how it is that this loss was caused by the breach. The amount of loss claimed here is not the problem; it is the causal link between this and the breaches of contract. Next, any question of the causal link must be examined in a pragmatic way. Where the loss is caused by a breach of contract, causation for the purpose of a claim for damages must be determined by the application of common sense to the logical principles of causation. . . . It is sufficient that the breach be a material cause. . . .
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> The question whether in a given case a pleading based on a global claim, or even a total cost claim or some variant of this, is likely to or may prejudice, embarrass or delay the fair trial of a proceeding, must depend upon an examination of the pleading itself and the claim which it makes. . . . The fundamental concern of the court is that the dispute between the parties should be determined expeditiously and economically and, above all, fairly. . . .
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> In my opinion, the court should approach a total cost claim with a great deal of caution, even distrust. I would not, however, elevate this suspicion to the level of concluding that such a claim should be treated as prima facie bad. . . . Nevertheless, the point of logical weakness inherent in such claims, the causal nexus between the wrongful acts or omissions of the defendant and the loss of the plaintiff, must be addressed. I put to one side the straightforward case where each aspect of the nexus is apparent from the nature of the breach and loss as alleged. In such a case the objectives of the pleading may be achieved by a short statement of the facts giving rise to the causal nexus. If it is necessary for the given case for this to be supported by particulars, this should be done. But, in other case**[?s],** each aspect of the nexus must be fully set out in the pleading unless its probable existence is demonstrated by evidence or argument and further, it is demonstrated that it is impossible or impractical for it to be spelt out further in the pleading."

Thus by 1996, it was clear that a global claim should not be treated as *prima facie* bad and that a composite amount might be recovered with respect to the combined effect of a number of causative events for which the employer was responsible, provided that the claimant had set out the alleged loss and how this was said to have been caused. It was also clear that this causative link should be viewed with common sense. Such was entirely in line with the view of Lord Wright expressed in the case of *Yorkshire Dale Steamship Co Ltd* v. *Minister of War Transport*[11]:

> "This choice of the real or efficient cause from out of the complex of the facts must be made by applying commonsense standards. Causation is to be understood as the man in

[10] (1996) 82 BLR 81.
[11] [1942] AC 691, 698.

> the street, and not as either the scientist or the metaphysician, would understand it. . . . Cause here means what a business or seafaring man would take to be the cause without too microscopic analysis but on a broad view."

This was a view built upon by Bowsher J in *P & O Developments Ltd* v. *Guy's & St Thomas' National Health Service Trust*[12]: "The test is what an informed person in the building industry (not the man in the street) would take to be the cause without too microscopic analysis but on a broad view."

By the end of the twentieth century, therefore, the contractor was entitled to recover a composite amount with respect to the loss arising from a combination of causative events provided that he could convince an informed person in the building industry that the events complained of had been a material cause of the alleged loss, without entering in to an overly microscopic analysis.

But what of the second submission of Duncan Wallace referred to earlier, that **[on?]** "proof of any not merely trivial damage or additional cost being established . . . for which the owner is not contractually responsible, the entire claim will be dismissed"?

It is not unusual to see responses to contractors' claims in which it is stated that the contractor has failed to take account of his own delays, resulting from shortages of manpower, equipment breakdowns, disorganised working, etc. Reliance is placed on such statements, often broad in nature, in order to deny responsibility for the damage that clearly has been suffered by the contractor and which resulted from breaches by the employer/owner. The proviso of Duncan Wallace that the delays for which the owner is not contractually responsible should be "not merely trivial" is often overlooked.

Of course, when shortages of manpower or equipment breakdowns or similar events have occurred, then, as far as possible, account must be taken of their contribution to the delay and consequent loss or expense. However, it is not always possible to isolate the effects of causes of delay for which the contractor is liable from those for which the employer is liable.

In such circumstances, is it correct and acceptable for the employer to profit from the situation, as would be the case if Duncan Wallace were followed? Would this result be any better than the result of admitting the contractor's global claim in the face of evidence that there was a material cause of damage for which the employer was not responsible?

This debate may have been settled by the recent ruling of the Scottish Court of Session on appeal from the first instance decision in the 2002 case of *John Doyle Construction Ltd* v. *Laing Management (Scotland) Ltd.*[13]

In this case, John Doyle had submitted a claim, part of which related to disruption due to a combination of factors. In an action to have this part of the claim dismissed, counsel for Laing Management submitted that the relevancy of a global claim depended on two assumptions holding true: that

[12] [1999] BLR 3.
[13] [2002] BLR 393.

the claimants were not themselves responsible to any material extent for the increased costs in respect of which the global claim was advanced and that the defendants were responsible for all of the causal factors that contributed to the increased costs. It was submitted that, because one of the events upon which the claim relied was a delay by John Doyle on a preceding works package, one of the essential factors for the global claim to succeed was absent.

At first instance, Lord MacFadyen analysed the nature of a global claim:

> "Advancing a claim for loss and expense in global form is therefore a risky enterprise. Failure to prove that a particular event for which the [defendant] was liable played a part in causing the global loss will not have any adverse effect on the claim, provided the remaining events for which the [defendant] was liable are proved to have caused the global loss. On the other hand, proof that an event played a material part in causing the global loss, combined with failure to prove that that event was one for which the [defendant] was responsible, will undermine the logic of the global claim. Moreover, the [defendant] may set out to prove that, in addition to the factors for which he is liable founded on by the [claimant], a material contribution to the causation of the global loss has been made by another factor or other factors for which he has no liability. If he succeeds in proving that, again the global claim will be undermined.
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> The rigour of that analysis is in my view mitigated by two considerations. The first of these is that while, in the circumstances outlined, the global claim as such will fail, it does not follow that no claim will succeed. The fact that the [claimant] has been driven (or chosen) to advance a global claim because of the difficulty of relating each causative event to an individual sum of loss or expense does not mean that after evidence has been led it will remain impossible to attribute individual sums of loss or expense to individual causative events. The point is illustrated in certain of the American cases. The global claim may fail, but there may be in the evidence a sufficient basis to find causal connections between individual losses and individual events, or to make a rational apportionment of part of the global loss to the causative events for which the [defendant] has been held responsible.
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> The second factor mitigating the rigour of the logic of global claims is that causation must be treated as a common sense matter. . . . That is particularly important, in my view, where averments are made attributing, for example, the same period of delay, to more than one cause."

On this basis, Lord MacFadyen refused to dismiss the claim.

On appeal, Lord Drummond Young set out in detail the reasoning of the Court of Session, confirming the decision at first instance:

> "If a global claim is to succeed, whether it is a total cost claim or not, the contractor must eliminate from the causes of his loss and expense all matters that are not the responsibility of the employer. This requirement is, however, mitigated by the considerations discussed by the Lord Ordinary at paragraphs [38] and [39] of his opinion. In the first place, it may be possible to identify a causal link between particular events for which the Employer is responsible and individual items of loss. . . . Determining a causal link between particular events and particular heads of loss may be of particular importance where the loss results from mere delay, as against disruption; in cases of mere delay, such losses as the need to maintain the site establishment for an extended time can readily be attributed to particular events, such as the late provision of information or design changes.
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> In the second place, the question of causation must be treated by 'the application of common sense to the logical principles of causation'. . . . In this connection, it is

> frequently possible to say that an item of loss has been caused by a particular event notwithstanding that other events played a part in its occurrence. In such cases, if an event or events for which the employer is responsible can be described as the dominant cause of an item of loss, that will be sufficient to establish liability, notwithstanding the existence of other causes that are to some degree at least concurrent. . . . If an item of loss results from concurrent causes, and one of those causes can be identified as the proximate or dominant cause of the loss, it will be treated as the operative cause, and the person responsible for it will be responsible for the loss.
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> In the third place, *even if it cannot be said that events for which the employer is responsible are the dominant cause of the loss, it may be possible to apportion the loss between the causes for which the employer is responsible and other causes.* In such a case, it is obviously necessary that the event or events for which the employer is responsible should be a material cause of the loss. Provided that condition is met, however, we are of opinion that apportionment of loss between the different causes is possible in an appropriate case. Such a procedure may be appropriate in a case where the causes of the loss are truly concurrent, in the sense that both operate together at the same time to produce a single consequence. . . .
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> Apportionment in this way, on a time basis, is relatively straightforward in cases that involve only delay. Where disruption to the contractor's work is involved, matters become more complex. Nevertheless, *we are of opinion that apportionment will frequently be possible in such cases, according to the relative importance of the various causative events in producing the loss.* Whether it is possible will clearly depend on the assessment made by the judge or arbiter, who must of course approach it on a wholly objective basis. It may be said that such an approach produces a somewhat rough and ready result. This procedure does not, however, seem to us to be fundamentally different in nature from that used in relation to contributory negligence or contribution among joint wrongdoers. Moreover, the alternative to such an approach is the strict view that, if a contractor sustains a loss caused partly by events for which the employer is responsible and partly by other events, he cannot recover anything because he cannot demonstrate that the whole of the loss is the responsibility of the employer. That would deny him a remedy even if the conduct of the employer or the architect is plainly culpable, as where an architect fails to produce instructions despite repeated requests and indications that work is being delayed. It seems to us that in such cases the contractor should be able to recover for part of his loss and expense, and we are not persuaded that the practical difficulties of carrying out the exercise should prevent him from doing so.
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> . . . any such apportionment must be based on the evidence and carried out on a basis that is reasonable in all the circumstances. . . ." [Emphasis added.]

The Court of Session, therefore, recognised that the contractor should not be denied recovery of the loss or expense to which a breach or breaches by the employer had made a material contribution, simply because events for which the employer was not responsible had also made a material contribution and it was not possible to isolate the effects of these latter events from those for which the employer was responsible. At last, after more than 10 years, the harshness of the second submission from Duncan Wallace has been tempered, probably to the relief of contractors.

Furthermore, the decision puts an end to debate over another aspect of global claims: that is, whether or not the global approach can be applied to delay and disruption as well as to costs?

The view of the editors of *Keating*[14] was that it could not: ". . . pleading a

[14] *Keating on Building Contracts*, 6th ed., 1995, Sweet & Maxwell, pp. 474–475.

composite financial claim may be permissible or permissible in part but composite allegations of delay or disruption are not permissible."

This view was shared by B Egglestone[15] (albeit because of the practical difficulties to be overcome by the contractor in order to extract delays for which he was responsible):

> "The courts it seems will in appropriate circumstances accept quantum on a global basis but the approach on causation is not clearly settled. It is unlikely, therefore, that applications for extensions of time on a global basis would succeed except in very complex situations and it is difficult to see how, in such situations, the contractor would extract delays of his own making as he would certainly have to do to meet the requirements of the rulings in *Crosby* and *Merton*."

It was not a view shared by J Sims and D Chappell[16]: "In some circumstances, however, a "global" apportionment of the claim may be admissible and in our view this applies to claims for extensions of time as well as claims for money."

Nor was it shared by H Lal[17]: "Global claims may be used both in relation to loss/expense and time claims."

In *John Doyle* v. *Laing Management*, the Scottish Court of Session seemingly comes down heavily in favour of the latter view, which the author submits, is entirely logical since the primary damage suffered by the contractor is the delay or disruption caused by the events for which the employer is responsible and his financial loss or expense is merely the consequence of this damage. In the words of Lord Drummond Young:

> "For example, work on a construction project might be held up for a period owing to the late provision of information by the architect, but during that period bad weather might have prevented work for part of the time. In such a case responsibility for the loss can be apportioned between the two causes, according to their relative significance. Where the consequence is delay as against disruption, that can be done fairly readily on the basis of the time during which each of the causes was operative. During the period when both operated, we are of opinion that each should normally be treated as contributing to the loss, with the result that the employer is responsible for only part of the *delay* during that period. Unless there are special reasons to the contrary, responsibility during that period should probably be divided on an equal basis, at least where the concurrent cause is not the contractor's responsibility. Where it is his responsibility, however, it may be appropriate to deny him any recovery for the period of *delay* during which he is in default[18].
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> Apportionment in this way, *on a time basis*, is relatively straightforward in cases that involve only delay". [Emphasis added.]

[15] *Liquidated Damages and Extensions of Time in Construction Contracts*, 1st ed., 1992, Blackwell Scientific Publications, p. 169.

[16] *Building Contract Claims*, 3rd ed., 1998, Blackwell, p. 346.

[17] *Quantifying and Managing Disruption Claims*, 2003, Thomas Telford, p. 213.

[18] The intentions of the Court of Session with respect to this last sentence are open to debate. Having stated that, in the case where one truly concurrent material cause of delay is the responsibility of the employer, it *may* be appropriate to apportion the loss between the cause for which the employer is responsible and other causes, Lord Drummond Young went on to suggest that where one concurrent cause of delay is the responsibility of the contractor, it *may* be appropriate to deny him any recovery. This suggests that the apportionment should be undertaken where the concurrent causes are the responsibility

It is clear from these words that the Court of Session foresaw an apportionment of responsibility for the delay and thereafter an evaluation of the contractor's financial loss based on this apportionment. This being so, there is no reason why the same global approach should not be applied to the evaluation of extensions of time.

Lord Drummond Young went on to state: "Where disruption to the contractor's work is involved, matters become more complex. Nevertheless, we are of the opinion that apportionment will frequently be possible in such cases, according to the relative importance of the various causative events in producing the loss."

Thus, in appropriate circumstances, the Court of Session condoned the application of the global approach with respect to disruption, as much as with respect to delay, and seemingly foresaw an apportionment of responsibility for the overall disruption, prior to evaluating the contractor's financial loss based on this apportionment. Once again, the authors submit that this is entirely logical, as the disruption (loss of productivity[19]) that arises from an isolated event, can be relatively small and easy to measure compared to the disruption that arises from a number of events occurring simultaneously or in close succession. "Loss in productivity tends to occur with fluctuations in labour moving on and off a work-face because of unexpected changes, excessive changes, or demand to expedite or reprogramme completion of work phases and when there is insufficient opportunity to plan for orderly change."[20]

Further losses in productivity can be incurred because, while the contractor's management team is engaged in dealing with variations, etc., it is unable to pay sufficient attention to the original works, as a result of which, productivity on these original works suffers.[21] The greater the number and concentration of causative events with which the management team has to cope, the greater will be the disruption to the site as a whole.

The decision of the Court of Session is therefore to be welcomed—at least by contractors. It rights a long-standing wrong, that of an inevitable windfall in favour of employers in the event of material causes of damage some of which are not the responsibility of the employer, and puts an end to long debate over whether or not the approach can be applied to delay and disruption as well as to cost. Lord Drummond Young acknowledged that: "It

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of the employer and neutral events and that perhaps it should not be undertaken where the concurrent causes are the responsibility of the contractor and the responsibility of the employer, but Lord Drummond Young unfortunately leaves open the question of what circumstance would influence his decision to allow or deny recovery.

[19] Delay and Disruption Protocol, October 2002, Society for Construction Law, p. 31, ISBN 0–9543831–1–7.

[20] *Delay and Disruption in Construction Contracts*, K Pickavance, 1st ed., 1997, LLP, p. 285.

[21] See note 17.

may be said that such an approach produces a somewhat rough and ready result" but he went on to state that:

> "This procedure does not, however, seem to us to be fundamentally different in nature from that used in relation to contributory negligence or contribution among joint wrongdoers. Moreover, the alternative to such an approach is the strict view that, if a contractor sustains a loss caused partly by events for which the employer is responsible and partly by other events, he cannot recover anything. . . . That would deny him a remedy even if the conduct of the employer or the architect is plainly culpable, as where an architect fails to produce instructions despite repeated requests and indications that work is being delayed."

However, contractors should not view the decision as a ticket for a free meal! They are still required to set out the events relied on; to isolate as far as possible the consequences of individual events; to eliminate as far as possible the consequences of events that are not the responsibility of the employer; to set out in detail the heads of loss which cannot be accurately allocated to individual events; to set out the general proposition that links between the events and the losses do exist and to aver and establish that it is impossible or highly impracticable to identify the causative links between each event and the consequence thereof.

In order to minimise his risk, therefore, the contractor must endeavour to identify additional costs that are wholly attributable to the employer. Within the limitations imposed by those constraints, he should strive to maximise the compartmentalisation of the costs.

However difficult it is to identify and isolate causation, it should be possible to distinguish between costs that have arisen as a result of the passage of time and costs resulting from a change in the productive effectiveness of resources. This distinction alone is a step in breaking down an apparently "global" problem.

Despite efforts to arrive at universal definitions, the terms "delay" and "disruption" are still used loosely within the construction industry. To some, delay strictly means "delay to completion". To others, it embraces both critical and non-critical delay. Disruption can mean variously an adverse effect upon progress, a non-critical delay, or a reduction in the productive effectiveness of resources. The latter two interpretations not only are different but also are actually in conflict where an event has reduced the rate of working of a critical resource. "Delay costs" and "disruption costs" are taken by the authors to be costs arising from the passage of time and from a reduction in the productive effectiveness of resources, respectively.

Usually, admissible delay costs are relatively simple to isolate and ascertain, being derived from two factors, i.e. periods of compensable delay and the level of cost of time-related resources to be applied to these periods. Quantification of the delays generally demands greater consideration and analysis with questions of responsibility, duration, timing and criticality to be addressed. The corresponding level of cost is a simpler issue. The contractor

however, has to take care to ensure that as far as possible, costs for which the employer is not liable are isolated.

The search for proof of delay costs is assisted by the fact that delay is a fairly straightforward concept that can be perceived readily on site. Lost time is easily recordable and often, so are the reasons for it.

Recoverable disruption costs are less easy to prove. Considering disruption in the context of effect on productive efficiency, exacting analysis of disruption requires extensive and detailed records which are rarely available outside a factory environment. Such records do not lend themselves to be maintained on even an exceptionally well-disciplined site. If contemporaneous records quantifying productivity are maintained, then it is most unlikely that they will identify and record the precise reasons for fluctuations.

This makes it particularly difficult to link disruption cost to individual disruptive events. In the majority of cases exacting proof cannot be provided. This leaves the contractor with no alternative but to adopt a global approach.

The simplest technique for doing so is to compare total cost against tender allowance. However, comparisons between actual cost and pre-contract estimates presume the sufficiency of tender prices and may include loss for which the contractor is liable. A contractor's bid or estimate must be realistic and this technique frequently raises a reference to the "Sufficiency of Tender" provisions of many contracts. Whilst providing an admissible basis for comparison, a tender allowance remains, at best, wholly projective. The claim relies on fact versus assumption and is arguably weaker because of it.

It is suggested that comparison against tender should be avoided. A comparison based on actual performance in the field, if properly compiled, is more likely to be convincing and to gain the confidence of the courts. The approach is essentially a comparison between resource productivity obtained when execution was largely free from disruption and resource productivity obtained when execution was disrupted by events for which the employer is liable (the so-called "measured mile" technique). Reference areas can be adopted according to trade, activity or form of construction.

The method is independent of the provision for labour that was made by the contractor in his tender. Programme durations are not relevant as it is work content and productive effort that is under consideration and not its timing.

It was a development of this technique, which was employed in the *John Doyle* case. Rather than comparing actual costs against tender allowance or directly against costs derived from reference areas, the comparison was made based on contract "work content".

Reference productivity levels were derived for the construction of the principal elements of the permanent works by examination and analysis of selected areas where disruption was at a relatively low level. Those productivity levels were applied throughout the works as detailed at the time of contract award to establish a supported estimation of the "contract work

content", expressed in man-hours, of the project as contemplated at commencement. The "contract work content" was then compared with the total man-hours actually expended.

The difference was composed of

(a) the labour content of additional and varied works (partly compensated);
(b) the labour content of compensation agreed elsewhere;
(c) disruption as a result of matters for which the employer was allegedly responsible;
(d) disruption caused by the contractor himself.

Adjustments were made in terms of man-day work content to eliminate (a) and (b). Further adjustments were then made to eliminate part of (c) where a linkage could be made between event and cost. By taking productivity achieved in practice, a reasonable allowance was included within the datum productivity for the disruption caused by the contractor himself. The datum also included for a level of background disruption for which the defendant was liable but that could not be isolated and removed.

Allocation records were thorough and by measuring actual productivity over periods of several weeks, the results were largely independent of productivity fluctuations and were indicative of mean productivity levels.

The ultimate success of this approach has yet to be tested. However, the Court of Session saw fit to reject an application for summary dismissal and to allow it to proceed to trial while indicating that the analysis should take into account the impracticality of proving causation by event on appropriate sub-portions of the claim if not the whole claim.

PART II: AN AMERICAN PERSPECTIVE

JAMES PERRY

Introduction to US jurisprudence on global claims[22]

The "total cost method" (TCM) is the term primarily used in the US when referring to global claims. American courts in all jurisdictions profess a dislike for this method of determining a contractor's damages and would agree with the Society of Construction Law's Protocol at Core Principle No 19 on global claims which states: "The not uncommon practice of contractors making composite or global claims without substantiating cause and effect is discouraged by the Protocol and rarely accepted by the courts."[23]

Lord Drummond Young's opinion in the *Doyle* case cites a leading US

[22] As readers will be aware, an exhaustive summary of "US jurisprudence" on any topic is complicated by the fact that American states each promulgate their own laws and jurisprudence in addition to the Federal jurisdiction's body of law. Thus, this paper describes generally prevailing principles in the US which may or may not be those applied in any specific state or Federal jurisdiction.

[23] Delay and Disruption Protocol, *op. cit.* note 19, Core Principle No 19 at p. 9.

opinion in the domain, *Boyajian* v. *United States*,[24] which noted in a similar tone that: "Even though this method is not favored, it is not expressly prohibited."

Notwithstanding this rather unpromising invitation to proceed, the *Boyajian* case goes on to approve the following four-point test, as Lord Drummond Young also cites, which is broadly accepted in the US as the standard to be met by plaintiffs choosing to pursue a TCM claim:

> "1. the nature of the losses makes it impossible or highly impractical to determine the amount with a reasonable degree of accuracy;
> 2. the contractor's bid or estimate was realistic;
> 3. the contractor's actual costs were reasonable; and
> 4. the contractor was not responsible for the added expenses."[25]

The four-point test described above, which is applied to the plaintiff's factual evidence, is used to determine whether he has met the necessary level of proof required to prevail. The *Doyle* case does not discuss, however, an often used, and somewhat overlapping, threshold test which US courts and boards have also been known to apply. For a TCM claim to proceed it should satisfy the following three-point test:

> "1. proper safeguards exist;
> 2. there is no better method of proving costs; and
> 3. there is some basis for determining a reasonable amount related to the entitlement".[26]

Failure to prove any one of these seven elements means that the contractor cannot recover his claimed damages assuming in the first place that his quantum had been calculated based on subtracting his receipts from his costs. However as Lord Drummond Young stated in paragraph [11] of his opinion: "the contractor can divide his loss and expense into discrete parts and use the global claim technique for only one, or a limited number of such parts."

American courts and boards have been relatively open to such a procedure and often proactively venture into the analysis themselves.[27] Courts and boards will do this when any one of the four points listed above are not met, but only when the plaintiff has nevertheless presented a body of evidence that has credence with regards to prejudicial events and subsequent damages. When a court accepts to relax any element of the four-point TCM test above, it is said they have adopted the Modified Total Cost Method (MTCM). Lord Drummond Young makes reference to this doctrine in paragraph [11] of his opinion.

A further method used by US courts and boards is known as the "Jury

[24] *Boyajian* v. *United States*, 191 Ct Cl 233, 423 F 2d 1231 (1970).

[25] *J D Hedin Constr Co* v. *United States*, 171 Ct Cl 86, 347 F 2d 235, 246 (1965); *Hewitt Contracting Co*, ENGBCA Nos 4596, 4597, 83–2 BCA 16,816 at 83,643 (1983).

[26] *Glasgow, Inc* v. *Department of Transp*, 108 Pa Commw 48, 529 A 2d 576 (1987); *United States ex rel. United States Steel Corp* v. *Construction Aggregates Corp*, 559 F Supp 414 (ED Mich 1983); *WRB Corp* v. *United States*, 183 Ct Cl 409 (1986).

[27] *Teledyne McCormick-Selph* v. *United States*, 588 F 2d 808 Ct Cl (1978).

Verdict". This does not mean a jury trial, but rather the judge will attempt to assimilate the manner in which a jury goes about determining the grounds for, and amount of, any payment due. This method seemingly allows further relief from the constraints of the four-point test and the MTCM doctrine. American commentators have noted that while this method has an element of subjectivity, it is being increasingly used to determine equitable adjustments to contracts.[28] (Both alternative methods are discussed below.)

It becomes clear very quickly however that we are talking about forms of claim that are technically alternatives to a TCM claim (albeit the MTCM doctrine is born from the same approach to the proof of causation) if the plaintiff is to have a realistic prospect of recovery. The frailty of the total cost method in it purest form comes from its oversimplification of the calculation of the damages. A contractor wishing to recover via a TCM claim is simply stating that all his costs expended should be reimbursed. In a TCM claim the contractor is unable to show specifically the causal link between the events he asserts have impacted on his performance (which must be free from his responsibility) and his costs in excess of his tender or initial contract price. One can understand a natural resistance to a legal doctrine which allows recovery without clear proof of causation. An overly liberal application of this approach would arguably encourage excessively low tenders knowing that effectively any contract entered into eventually has a high likelihood of being converted to a cost-plus contract if, or rather when, the employer makes missteps in his management of the project.

On the other hand US courts and boards do recognise that construction projects involve a complicated series of interactions between the parties and that it may not always be possible for the contractor to provide traditional proof of causation for what may be hundreds of events all having an impact on his performance. The incremental cumulative effect of each event is possibly not calculable at any given moment during the performance, or at all, and the burden of proving the impact of each, on top of simply documenting the facts, may be an unfair requirement and often highly impractical. For example, consider the following disruption hypothetical: one variation order (among a total of say 400) impacts on 100 workers, out of a total work force of 1,000, so that they lose 30% efficiency over three days. Remembering that the contractor is required to prove his case by the preponderance of the evidence (and not beyond a reasonable doubt as it often feels like in modern litigation) is it reasonable to believe that any meaningful analysis of all 400 variation orders can be done in "real time" when many of the variations may be impacting the same teams at the same time?[29] A concern over the excessive analysis of causation is also manifest in

[28] Jon M Wickwire, Thomas J Driscoll, Stephen B Hurlbut, Scott B Hillman, *Construction Scheduling, Preparation, Liability and Claims*, 2nd ed., 2003, §12.06 "Jury Verdict Method": The Construction Law Library, Aspen Publishers, ISBN 0–7355–2994–9.

[29] A slight digression: At what point does a series of events, which individually have no or little standing as a claim, become a claim? Can the cumulative effect itself be considered a single "event" giving rise to a basis for a distinct claim eliminating the need to link cause and effect separately for each event in the series

the *John Doyle Construction Ltd* case. At paragraph [39] of the Lord Ordinary's opinion, which was cited and confirmed by Lord Drummond Young in the Court of Session, the court stated that: "The second factor mitigating the rigour of the logic of global claims is that causation must be treated as a common sense matter. . . ."

Findings by US courts and boards have expressed similar views to those expressed by the Lord Ordinary at paragraph [39] of the *Doyle* case cited above. This is especially true in situations where a modified total cost method or so called Jury Verdict Method is applied. Both doctrines are discussed in more detail below, however, with respect to the Modified Total Cost Method, one court stated, as part of its finding for the contractor, that:

> "Contractor's actual, total costs were used in computing a contract price adjustment where those costs were reasonable, contractor was not guilty of waste or avoidable inefficiency and it was possible to determine a credit due the Government for cost increases not the result of its actions."

And further, under administrative judge McFadden's finding of fact, he stated:

> "FINDINGS OF FACT
>
> 1. The Government's auditor audited HCC's [Hewitt Construction Company's] books of account and business records. The auditor established a *'confidence level'* [emphasis added] with respect to most categories of HCC's records. He found such a 'confidence level' with HCC's records relating to labor, materials and overhead. He found that the records concerning ownership of equipment were accurately kept. He found HCC's records relative to subcontractors and hauling credible and supported every dollar claimed."[30]

In an another decision supporting the use of the Jury Verdict Method the Board stated:

> "The jury verdict will generally be used only . . . where each side presents convincing but conflicting evidence as to what amount the equitable adjustment should be . . . neither side is considered entirely correct . . . some allowance by the Board is proper, and where evidence is sufficient to permit the Board to make some reasonable decision as to the proper allowance."[31]

While neither of these cases met the standards required for a successful TCM claim, the judges seemed to be convinced that the respective plaintiffs had shown that the employer had behaved in a prejudicial manner and that his records were sufficiently accurate and detailed to permit a reasonable determination (or estimation) of quantum in some fashion or another.

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thereby opening the way to a proof of causation that contains speculative elements? (This is not the approach taken by the courts, but the end result of the MTCM or Jury Verdict Method are similar.) Compare this to scientific measurement. For example the size and orbital frequency of planets circling distant stars is measured by reading fluctuations in the star's luminosity not by observing the planets themselves. In other words when we cannot measure something by direct observation we should consider a lateral thought process when common sense tells us it is reasonable to do so.

[30] *Hewitt Contracting Co*, ENGBCA Nos. 4596–4597, 83–2 BCA ¶ 16,816 (1983).

[31] *Air-A-Plane Corp*, ASBCA No 3842, 60–1 BCA ¶ 2547 (1960).

As a practical matter most experienced construction professionals working on sites have seen projects where the employer is aware that his variations and late decisions etc. are impacting on the contractor and that the incremental nature of the employer's actions are making it excessively difficult for the contractor to present his case. A fact which some employers have been known to exploit.[32] As a result the courts and boards will often look for other ways, to determine damages should the strict tests required to allow a TCM claim not be met.

Both employers and contractors have reason to fear inequitable outcomes in TCM claims. A contractor whose TCM pleading fails simply because one factor contributing to project delays was shown to be his responsibility can lose his entire case in the face of otherwise overwhelming evidence of employer interference. On the other hand evidence of employer interference alone should not justify conversion of a lump sum contract into a cost-plus arrangement. The law should not create situations whereby either party's chances of windfall victories are favoured. A common sense approach to causation as advocated by the Lord Ordinary in the *Doyle* case therefore has merit and is coherent with the application of the "Modified Total Cost Method" and "Jury Verdict" doctrines which can be applied in situations where a pure TCM claim proves to have some failing with respect to the four-point test described above. These two alternative doctrines are discussed below, however, a key factor in both is that they accept the basic tenet regarding the difficulty of proving causation also inherent in a pure TCM claim. That is to say, where the facts of a case do not merit the complete suspension of the ordinary rules of proof of causation, it does not necessarily preclude the acceptance of these special rules when applied to some lesser amount than the whole of a contractor's claim.

When a plaintiff puts forward a MTCM or Jury Verdict plea, or when a court applies these doctrines of its own accord, it seems logical for judges to have the ability to use common sense to determine if the body of evidence presented meets the *Hewitt Contracting Co* "confidence level" test as cited above. If it does, it seems appropriate, given the immense complexity of a modern job site, that he proceed to make a determination of some kind of award based on the preponderance of the evidence.

More on the Modified Total Cost Method (MTCM)

As discussed above, cases presented as TCM claims typically fail as such. In many cases failure to meet any one of the four points enumerated above results in dismissal of the case outright without any further attempt to consider the possibility that some lesser amount of damages might be due. In these cases the level of evidence tends to be so poor that no other finding can be justified.

[32] While this situation occurs between employers and contractors the occurrence of abuse may be more pronounced in the relationship between contractors and subcontractors.

It is interesting to note that the *Boyajian* case upheld the right to present TCM claims under the four-point test, but that the plaintiff's case was dismissed without any thought to examining modified calculations of damages as the judges did in the cases described below. The *Boyajian* case was not in fact a construction case, but dealt with the manufacture of special testing and controls equipment for military aircraft. The contract required the plaintiff to produce a "first article" of each of two distinct pieces of equipment for approval before proceeding to manufacture of the full order. The plaintiff presented three heads of claim all based on difficulties he encountered in obtaining approval of the first article.

The plaintiff seems to have failed on two counts. In the first instance the facts do not suggest the existence of particularly complicated events, which ordinarily would make the task of proving traditional causation "impossible or highly impractical."[33] In addition the plaintiff seems to have made no attempt to put forth any explanation of how or why the complained of events could be related to his damages. The court stated:

> "Defendant properly contends that the excess costs claimed must be tied in to defendant's breaches.
>
> However, contrary to these basic causal-connection damage principles, no attempt is here made to relate any specific amount of increased costs to any particular alleged breach. Nor is any satisfactory explanation given as to why such an attempt was not made or why it would not have produced reasonably accurate results. Instead, the damage proof consists only of an accountant's schedule (and the accountant's testimony in support thereof), setting forth computations, based on plaintiff's books and records, of plaintiff's total expenditures in performing the contract, and subtracting therefrom the total contract receipts, thus arriving at a total 'loss' figure, for which plaintiff demands recoupment."[34]

In other words there must be some basis for determining a reasonable amount related to the entitlement.[35]

In other cases, however, plaintiffs do succeed in establishing a confidence level in the evidence (even though they fail at least one of the four elements required to succeed in a TCM case) such that the American courts and boards have been unwilling to grant the total dismissal of the plaintiff's case. The *Hewitt*[36] case mentioned above comes very close in fact to being a textbook example of a recovery under a pure TCM hypothesis but for one identifiable element which was responsible for converting the recovery to one based on the MTCM doctrine. The case involved the construction of roads under several contracts for the Army Corps of Engineers. The roads had been improperly designed and the contract had been badly managed by the contracting officer.

To begin with it appears that the defendant's behaviour was clearly egregious and that the judge was convinced by the evidence that the

[33] Requirement of test No 1 for proof of TCM claims (see note 26).
[34] *Boyajian* v. *United States*, 191 Ct Cl 233, 423 F 2d 1231 (1970).
[35] Requirement No 3 for threshold test of TCM claims (see note 27).
[36] *Hewitt Contracting Co*, ENGBCA Nos 4596–4597, 83–2 BCA ¶ 16,816 (1983).

defendant had breached the contract causing delay and disruption to the contractor's performance. Judge McFadden's language was quite explicit to this effect:

> "It is enough to say here, at the outset, that Appellant was required to tear out and reconstruct roads which the Corps had defectively designed; repair roads damaged by excessive loads not contemplated by the design; harassed and directed to perform arbitrary changes in the field; underpaid; constructively suspended; and, finally, improperly terminated for default under Contract No DACW 21–75–C–0072."

Judge McFadden then addressed each of the four elements required to prevail in a TCM claim.

To the first question: "did the nature of the losses make it impossible or highly impractical to determine the amount with a reasonable degree of accuracy", the judge found they did:

> "Here, HCC's work was made more difficult and costly by a deficient Government design, repeated damage by vehicles heavier than the roads were designed to bear, harassment, over-inspection, acceleration demands, suspensions of work, an improper termination for default and a stretch out of the job from 1974 to 1978 through no fault of HCC, among other Government-caused difficulties. The Board has been presented with no precise formula (nor indeed even an imprecise one which can be granted credibility) by which additional costs attributable to these intertwined, overlapping events can be computed and segregated and knows of no way to devise such a formula on its own."

To the second question: "was the contractor's bid or estimate realistic", the judge found it was:

> "HCC's bid for the original contract was only 4% lower than Holliday Construction Co, the second lowest bidder, and only 15.4% lower than the Government estimate, after a 10% profit factor is added to that estimate. The Government did not question HCC's bid at the time of submission, as it is required to do if low to any appreciable degree, and introduced no evidence challenging the reasonableness of the bid."[37]

To the third question: "were the contractor's actual costs reasonable", the judge found they were:

> "The Government does not accuse HCC of waste or avoidable inefficiency or the incurrence of unnecessary costs. On the contrary, the acceptance and agreement as to the numerous categories of costs claimed by HCC, by both the Government auditor and

[37] Note that *Hewitt* was 4% lower than his next competitor. In this case he will have recouped this difference which many readers may consider to be an undesirable result. The certainty of the prejudice combined with the difficulty of calculating precisely the amount of damages in certain cases has meant, however, that US courts and boards may accept that the question of whether the contractor had the correct price to begin with cannot be answered definitively. However, this second "prong" of the TCM test has been modified on other occasions. Acceptable alternative ways of base lining the calculation have included averaging the contract price with the amounts tendered by the competition or by using government estimates. For those readers who consider there could be risk of encouraging contractors to under-bid a project in the hopes of recovering the loss later through total costs theories, consider the following extract from the dissenting opinion in a recent California Supreme Court case: "To believe a contractor would deliberately submit an abnormally low bid in hopes of obtaining a job and, once obtaining it, would expend the time and expense of completing it, with the intention of thereafter incurring the high cost—in dollars, delay and inconvenience—of modern litigation to recoup several years later its additional expenses, defies common sense." (*Amelco Electric* v. *City of Thousand Oaks*, 27 Cal 4th 228 (2002).)

> Government personnel at the quantum hearing, after rejection of a rather insignificant amount as being duplicated, attest to the Government's belief that the vast majority of the costs are reasonable. **??**The costs which the Government questions have been referred to in the above findings and relate primarily to their allowability under Government procurement regulations, the interpretation of various rates such as the AGC equipment ownership rates etc., but not otherwise as to their reasonableness**??**."

With regard to the specific point of reasonableness of the costs the judge noted:

> "Although the Government audited Appellant's costs thoroughly, **[?? who]** agrees in most instances that the costs claimed were actually incurred and has made no attempt to charge Appellant with waste or inefficiency, the Government argues long and hard against Appellant's 'total cost' proposal, as well as the use of its actual, experienced costs, for the contract price adjustment required by the Board's previous decision on entitlement.
>
> The Board views actual costs incurred in the performance of changed work as the single, most reliable measure for the required price adjustment not only because the costs are 'historical' but because, by their very incurrence, they raise the presumption of reasonableness. This presumption controls unless it is proved, by a preponderance of the evidence, that the costs were unreasonable. *Bruce Construction Corporation* v. *US*, 163 Ct Cl 97 (1963)"[38]

The final test requires that: "the contractor not be responsible for the added expenses".[39] To this the judge found that:

> "HCC was not responsible for the added expenses except for the cost of bringing the base course up to a thickness of 6″ without Government interference. This was the essence of the Board's previous decision on entitlement. While the parties are far apart as to the cost of increasing the thickness of the base course, both have presented the Board with estimates and accounting data which demonstrate that the cost of this work can be segregated and permits the Board to exclude it from HCC's total costs."

In summary the contractor's actual total costs were used in computing a contract price adjustment where those costs were reasonable, contractor was not guilty of waste or avoidable inefficiency and it was possible to determine a credit due the government for cost increases not the result of its actions.

The two key elements necessary for winning a MTCM, or even a TCM, claim are the establishment of liability on the part of the defendant and the credibility of the supporting evidence thereby instilling a confidence level in

[38] Note the US Government has implemented a revision to the Federal Acquistion Regulations in 1988, five years after the *Hewitt* case, which states in part: "No presumption of reasonableness shall be attached to the incurrence of costs by a contractor." In Federal jurisdictions therefore the validity of *Bruce Construction* may well be pre-empted.

[39] Note the way the test is phrased: "The contractor was not responsible for the added expenses." What if neither party is responsible for an item of added expense? Lord Drummond Young addresses this problem in the *Doyle* case at para. [36] where he states: "The point has on occasion been expressed in terms of a requirement that the pursuer should not himself have been responsible for any factor contributing materially to the global loss, but it is in my view clearly more accurate to say that there must be no material causative factor for which the defender is not liable." Despite what appears to be the clear language in the American test, US courts and boards have consistently found that a contractor seeking damages based on a total cost theory must demonstrate that the defendant, and not anyone else, is responsible for the additional cost.

the quantum even if circumstances do not permit precise calculation. In this regard the Board in *Hewitt* relied on two US Supreme Court cases from 1927 and 1931 and noted:

> "The Board is also guided by the principle that where liability of the Government is clearly established, absolute certainty as to the amount of damages is not required. *Eastman Kodak Co* v. *Southern Photo Material Co*, 273 US 359, 47 S Ct 400 (1927); *Story Parchment Co*, 282 US 555, 51 S Ct 248 (1931). In the latter case the Supreme Court said, at p. 562: 'It is true that there was uncertainty as to the extent of the damage, but there was none as to the fact of damage; and there is a clear distinction between the measure of proof necessary to establish the fact that petitioner had sustained some damage, and the measure of proof necessary to enable the jury to fix the amount. The rule which precludes the discovery of uncertain damages applies to such as are not the certain result of the wrong, not to those damages which are definitely attributable to the wrong and are only uncertain in respect of their amount.' "

While this citation leads nicely to the following section on the Jury Verdict Method it also underlines one common point in all three methods in that the law does not allow a defendant to escape liability because the damages may elude precise calculation. In the context of modern construction the Lord Ordinary in the *Doyle* case said at paragraph [35] (paragraph [7] of Lord Drummond Young's opinion):

> "In some circumstances, relatively common in the context of construction contracts, a whole series of events occur which individually would form the basis of a claim for loss and expense. These events may inter-react with each other in very complex ways, so that it becomes very difficult, if not impossible, to identify what loss and expense each event has caused. The emergence of such a difficulty does not, however, absolve the pursuer from the need to aver and prove the causal connections between the events and the loss and expense. However, if all the events are events for which the defender is legally responsible, it is unnecessary to insist on proof of which loss has been caused by each event. In such circumstances, it will suffice for the pursuer to aver and prove that he has suffered a global loss to the causation of which each of the events for which the defenders is responsible has contributed."

As seen in the *Hewitt* case courts or boards have the authority to modify any one of the four elements required to prove a TCM claim if they determine that denying the claim in its entirety, because of the strictness of the TCM test, would result in a windfall for the defendant. In these cases the court is in fact applying the Modified Total Cost Method. Each of the four points may be adjusted in various ways. The first point, which requires that the nature of the losses make it impossible or highly impractical to determine the amount with a reasonable degree of accuracy, can be modified in that a TCM approach to the rules of causation may be applied only to one or several specific portions of the claim in isolation. The other portions of the claim being left to traditional proof.

Modifications to the second test, which requires the contractor's bid or estimate to have been realistic, can be made, as already discussed above, by averaging tenders or using outside estimates as discussed in footnote 17, above. In addition employers usually have fairly reliable estimates prepared prior to or in parallel with tenders. An employer who awards a contract to an

unusually low tenderer is broadly considered at least unwise and, depending on the rules or laws applicable to the specific employer, may be acting illegally. Alternatively, where only a portion of the claim is being reviewed under the TCM approach, a "measured mile,"[40] if one exist, may be used to establish the base line cost of a specific unit of work.

The third test is possibly the most difficult to "modify." This test requires that all the contractor's cost had to have been reasonable. The *Bruce Construction* case, cited above, generally puts the burden of proof on the defendant to show that a cost incurred was unreasonable. (See however note 38, regarding the 1988 revision to the Federal Acquisition Regulations directly opposing such presumption in Federal jurisdictions.) More frequently, the difficulty with this test stems from incomplete evidence regarding costs or a lack of any attempt to explain how the cost might be related to the defendant's breach. Especially in the case of incomplete submissions on costs, it is impossible to imagine how a court or board could modify the test in any useful way and such lack of evidence often invites doubts as to the integrity of the contactor's claim in the first place.

Finally the fourth test, requiring the defendant to be responsible for the added expenses, is probably the easiest to modify in that elements of a claim for which the defendant is not liable are often more easily calculated than those for which he is liable and therefore can be extracted from the total cost before analysis under the TCM approach. This was the situation in the *Hewitt* case.

It must be restated that the TCM approach is not favoured by the courts and boards and that when a Modified Total Cost Method is applied it simply means that the "TCM approach" is being applied to a portion of the claim smaller than the whole. The courts and boards will therefore try to make that portion be as small as possible.

In a final example, *Youngdale & Sons Construction Co* v. *United States*,[41] the plaintiff won a contract for approximately $3,000,000 to build low-rise apartments on a US Air Force base. The plaintiff then encountered rock and excess water conditions while performing the excavation work which were the essential elements of an approximately $824,000 claim. The plaintiff

[40] A measured mile approach is the comparison of the contractor's production rates both prior to and during the impacted period. To be applied there must have been a period of time where the same type of work in question was performed by the contractor without the claimed interference from the defendant. A measured mile is considered good evidence and it may be quite acceptable to substitute the real undisrupted production cost for the tender amounts. Note that if the contractor's undisrupted production rates were better than his tendered rates he can conceivably recover more than under the TCM approach alone. The measured mile is in fact an important part of the pursuer's pleadings in the *Doyle* case and seems to be given credence by Lord Drummond Young who states at paragraph [25]: "This method of analysis (i) is independent of the provisions made in the tender, and also of contract programmes, so that it avoids difficulties of tender pricing or programme optimism; (ii) makes a reasonable allowance for disruption for which the pursuers are liable in 'normal' work, by taking productivity achieved in practice rather than assumed in tender; and (iii) is unrelated to the earned Value Analysis criticised by the defenders."

[41] 27 Fed Cl 516 (1993).

submitted an evidently poorly documented claim which failed to solicit any level of confidence in the calculation of the damages claimed. The court naturally rejected a TCM recovery, but took an open view in applying the MTCM doctrine and spoke to the court's role in this process:

> "The theory behind the modified approach is that, in order to prevent the government from obtaining a windfall stemming from the plaintiff's inability to satisfy all the elements of the total cost method, the court will modify that test, so that the amount that would have been received by the total cost method, is only the starting point from which the court will adjust the plaintiff's recovery downward to reflect the inability to prove any of the aforementioned four elements."

The court then reviewed each of the four prongs of the TCM test to determine if elements could be modified in an acceptable manner to allow a MTCM recovery.

(1) The impracticability of proving actual losses directly

Here the court concluded that the plaintiff failed to meet this test, because he had been aware of the water conditions from the pre-construction meeting and had thoroughly documented the facts of each adverse circumstance. The plaintiff's primary failure seems to have been in his record keeping and the lack of transparency by not providing his books and records to the court. The court stated: "the books might in fact show additional costs from the excess water to be a fraction of the amount claimed."

When a court determines that this first test is not met, it is difficult to imagine any circumstances in which a MTCM analysis could continue. The only real modification to this test that can be valid is simply the limitation of the doctrine to a portion of the claim smaller than the whole, because the only outcome of failure to pass this test is analysis by the discrete cost approach (i.e. direct costs). In practice one has to speculate on the impact the non-submission of cost records (a fact more related to the third test) has on a court when making its determination under the impracticability test.

(2) The reasonableness of the bid

The court determined that the plaintiff's bid was not reasonable in that it was 17% below the average of the other eleven bids and he failed to produce any of the detailed supporting documentation he must have prepared during the calculation of the bid. In addition he failed to provide any testimony from any member of his staff with direct knowledge of its preparation. This test was easily modified, however, despite the large disparity between the bids. Following Servidone,[42] the court provisionally took an average of the 11 other bidders plus the government's estimate to set a new baseline.

[42] 19 Cl Ct 384, 931 F 2d 862.

(3) The reasonableness of actual costs

The issue here was more the lack of evidence on costs at all and less the question of reasonableness of "actual" costs. The lack of actual cost evidence meant that the court could not modify this element of the test. The court stated:

> "Therefore, given, but not limited to, the marginal probative value of Ms Finch's testimony, the dearth of evidence proffered by the plaintiff with respect to its actual costs, and the plaintiff's failure to introduce its books and records, the court is of the opinion that the plaintiff has also failed to meet the third element of the total cost method, i.e., reasonable actual costs. In this instance, the court is unable to modify this prong of the test, as plaintiff has failed to give the court even one scintilla of probative evidence upon which we can reasonably rely in determining plaintiff's actual costs, let alone determine that said costs were reasonable."

With regard to the fourth test, lack of responsibility for additional costs, the court found that the plaintiff was responsible for costs associated with rock excavation which formed a substantial part of his claim, however, it was again primarily due to the plaintiff's failure to provide transparent actual cost evidence that the court rejected the use of even the MTCM in this case.

> "As a consequence, we hereby hold that not only has the plaintiff failed to prove its damages by a preponderance of the evidence as to the total cost method, but it has also failed to do so as to the modified total cost method. More significantly, the court is of the opinion that due to plaintiff's lack of probative evidence as to any of its excess costs, save one significant exception, we would be clearly justified in disallowing all of plaintiff's damages claims irrespective of the method otherwise utilized in the instant case."

The court however did not dismiss the plaintiff's damage claims entirely despite it having failed on its own pleadings. The record apparently contained a government audit report, admitted by the defendant, that concluded approximately $210,000 (or approximately one-quarter of the plaintiff's claim) were supported as additional costs due to the excess water conditions. The court was therefore loath to dismiss the case when damages clearly existed as calculated by the more accepted direct cost method. The paragraph cited above therefore continued as follows: "However, the court believes that it would be a great injustice to deny all damages due to plaintiff's failure of affirmative proof, where it is clearly evident that plaintiff incurred substantial additional costs due to the excess water condition."

Youngdale, while considered to be a textbook case of an untenable MTCM claim, does illustrate the importance the American courts often give to ascertaining damages if the existence of damages seems at all probable and the extent to which a court might autonomously peel away the layers of a TCM claim to retrieve the best possible evidence.

More on the Jury Verdict Method

When the requirements described below have been met, a court or board may attempt to determine damages themselves much in the way a jury would

deliberate. In *Specialty Assembly & Packing Co* the court stated: "[i]n estimating damages, the Court of Claims occupies the position of a jury under like circumstances; and all that the litigants have any right to expect is the exercise of the court's best judgment upon the basis of the evidence provided by the parties."[43]

At least one leading American commentator has noted that the use of the Jury Verdict Method by courts and boards has been increasing,[44] however, case law does show, as with the application of TCM doctrines, that the Jury Verdict Method should only be used as a last resort.[45]

The Jury Verdict Method of ascertaining damages, not discussed in the Doyle case,[46] arguably takes the MTCM concept one step further in that it allows the trier of fact to dispense with the gymnastics of "modifying" any of the last three prongs of the TCM test so long as the first test is met, namely, that there is no other reliable method of calculating damages incurred by the contractor. Even this threshold requirement is somewhat nuanced. In the *Air-A-Plane Corp* case cited above (see note 31) the Jury Verdict Method was adopted apparently because each side had presented *convincing but conflicting evidence*. Such circumstances are common in complicated litigation on large projects and allowing the judge a degree of leeway in determining damages is efficient and appropriate provided that the trier of fact is convinced of the existence of damages and that there is sufficient documentation regarding costs to establish a level of confidence in the evidence so to permit a reasonable approximation of appropriate equitable adjustments.

These elements, which must be present before the Jury Verdict Method will be applied, are usually formulated by the following three-prong test:

> "(1) "clear proof of injury exists,
> (2) there is no more reliable method for computing damages, and
> (3) the evidence is sufficient for a court to make a fair and reasonable approximation of the damages."[47]

As with TCM/MTCM cases the question of whether a court will accept to apply the Jury Verdict Method for the calculation of damages depends greatly on the plaintiff's ability to show that he has suffered damages and that the defendant's actions are responsible for those damages. Again, exact proof

[43] *Specialty Assembly & Packing Co* v. *United States*, 174 Ct Cl 153, 184, 355 F 2d 554 (1966).

[44] Jon M Wickwire *et al., op. cit.* note 28, at §12.06 Jury Verdict Method.

[45] Apparently there are two methods of "last resort" (the TCM and the Jury Verdict Method). Arguably the Jury Verdict Method might more appropriately be considered as a second last resort.

[46] Lord Drummond Young does, however, discuss the American case of *Phillips Construction Co Inc* v. *United States*, 394 F 2d 834 (1968) at para. [19] of his opinion. In this case the court rejected a TCM claim, but upheld the damage award which had been based on the board's apportionment of damages due to flooding. Using similar language to *Specialty Assembly,* cited above, the *Phillips* court made the following observation regarding the board's use of discretion: "That exercise was upheld by the Court of Claims, which observed that 'It represented the best judgment of the fact trier on the record before it', and that 'is all the parties have any right to expect'." The *Phillips* case does not discuss the Jury Verdict Method specifically, but effectively it is an example of its application.

[47] *Tutor Saliba-Perini*, PSBCA No 1201, 87–2 BCA (CCH) ¶ 19,071 (1986); *Dawco Construction Inc* v. *United States*, 930 F 2d 872 at 880–881, CA Fed,1991; *Southwest Marine Inc*, ASBCA No 36,854, 95–1 BCA ¶ 27,601 (1995).

tying the direct costs associated with each event may not be required, but sound supporting evidence in respect of costs must be submitted in order for a judge to be able to make a fair and reasonable approximation of the damages.[48] To do this a plaintiff can of course submit his actual cost data and also quantum and productivity expert witness reports. One American commentator considers a contractor's historical costs from other projects to be acceptable evidence.[49]

Often it is more interesting to review a case which failed. In Dawco Construction Inc v. *United States*,[50] the contractor lost the right on appeal to have damages determined using the Jury Verdict Method after the Claims Court had granted a seemingly incredible award based on the doctrine. The issue involved the landscaping portion of a contract to refurbish a naval housing project in California. The original value of the work was $460,000. After the work had been suspended for eight months, 44% of the total area covered by the original contract was deleted from the scope of work. Dawco claimed that once it began work it found the site had been neglected during the eight month suspension and had become overgrown and that the grading work was made substantially more difficult than foreseen due to large quantities of rock, construction débris and unidentified abandoned water lines. The Claims Court determined that an equitable adjustment of $529,935 was appropriate after going through rather dubious extrapolations and creative maths—some of which are described below.

The landscaping work had been subcontracted to a firm known as "JCL" and in turn JCL had hired the services of a tractor operator named Lance Edmunson who Dawco claimed bore the brunt of the extra work. Dawco and JCL did not keep records concerning the unforeseen site conditions, but Edmundson did, and by his account the extra costs represented a 27% increase compared to his price (or damages in the amount of $8,100). The trial court apparently took this rather small amount of evidence and made the following determination of damages:

(1) As the parties could not agree the amount to deduct for the 44% reduction of the surface, the trial court made a simple deduction of 44% from the initial contract price of $460,000 after which they added a mark up of 17.6% as a surcharge for "loss of economy of scale".
(2) The court then added $81,852 as an estimate of JCL's extra costs. "These additional 'damages' were derived by extrapolating from

[48] In *David J Tiernay*, GSBCA Nos 7107, 6198, 88–2 BCA (CCH) ¶ 200,806 (1988), the board dealt with a disruption claim by approximating the contractor's damages. The calculation was made by taking the contractor's net loss, to which 10% profit was added as per the contract variations clause, after which the total was apportioned based on the board's evaluation of respective culpability.

[49] Robert F Cushman, , John D Carter, Paul J Gorman, Douglas F Coppi, *Proving and Pricing Construction Claims*, 3rd ed., 2001: The Construction Law Library, Aspen Publishers, ISBN 0–7355–1445–3, §6.06 Pricing the Change Order.

[50] 930 F 2d 872, CA Fed, 1991.

the 27 percent figure provided by Edmunson's testimony to estimate the costs of all of JCL's extra work."

(3) After adding a few miscellaneous expenses the court arrived at a base amount of $416,615 to which they added another $113,320 as a "prime on subcontractor rate" or in other words a subcontractor mark up of over 27% for a total of $529,935.

Based on the above, the trial court first gave an award of damages for the difference between the original contract price and the amount calculated of $529,935 or $69,935. Apparently, however, the court amended its award six months later on its own accord and announced an equitable adjustment for the whole $529,935 in favour of the plaintiff. It is very hard to understand how this award would not have resulted in a total payment to the plaintiff of $989,935 had it not been overruled and remanded.[51]

The appellate court first enumerated the test to be applied before the Jury Verdict Method can be adopted:

> "Before adopting the 'Jury Verdict Method', the court must first determine three things: (1) that clear proof of injury exists; (2) that there is no more reliable method for computing damages; and (3) that the evidence is sufficient for a court to make a fair and reasonable approximation of the damages. *WRB Corporation* v. *United States*, 183 Ct Cl. 409, 425 (1968)."

The appellate court's ruling leaves little doubt as to its opinion of the lower court's handling of the quantum and whether or not there was sufficient evidence to make a fair and reasonable approximation of the damages (prong No 3 of the Jury Method Test), however, as an appellate court they restricted their review to the questions of law relative to the first two prongs of the Jury Method Test. "In this case, the court's determinations that Dawco had met the first and second of these requirements were erroneous" and "Even though we determine that the Claims Court incorrectly resorted to the 'Jury Verdict Method', we cannot, as an appellate tribunal, make factual findings that would establish the proper amount of the equitable adjustment."

The appellate court had no difficulty determining that the plaintiff had failed to meet the first two prongs of the Jury Verdict Method test. The key factor in failing to pass the second test (there existed no more reliable method of computing damages) was stated as follows:

> "From the record, as well as testimony cited by the court, Dawco did not establish that it could not have identified to an acceptable degree of certainty its and JCL's costs attributable to the differing site conditions. Its failure to do so should have precluded the Claims Court from adopting the 'Jury Verdict Method'. *Boyajian*, 423 F 2d at 1236. Here, the Claims Court found that Edmunson, the tractor operator hired by JCL, who, the court said, '[f]ortuitously … bore the main brunt of the extra effort', was able to keep his 'records, unlike [Dawco's] and JCL's, … in such a manner … [to] show to the satisfaction

[51] In addition to these issues there was a question of whether or not the defendant had made interim payments of $273,472. The trial court found no clear evidence that these payments had been made on account of the contract in question.

> of the court that it cost him an additional $8,100 to perform the extra work'. *Dawco, 18* Ct Cl at 700."

The fact that Mr. Edmunson apparently kept acceptable records played a double role. Not only did it show that there was a more reliable method for computing damages, thus dooming the plaintiff's chances with respect to the second test, but, in light of the fact that Edmunson bore the brunt of the extra work seemingly for a grand total of $8,100 in damages, it likewise doomed the plaintiff's chances with respect of the first test which requires the plaintiff to show clear proof that an injury exists. With regard to the later the court stated:

> "However, the record is barren of other evidence that, under the WRB test's first prong, Dawco suffered any injuries beyond Edmunson's costs and any related JCL and Dawco overhead. Without such proof, the 'Jury Verdict Method' cannot properly be used to estimate what would be nothing more than speculative damages. See *Assurance Co* v. *United States*, 813 F 2d 1202, 1205 (Fed Cir 1987)."

Prior to this discussion on *Dawco*, the author's view that the TCM/MTCM and jury verdict doctrines have merit in complex modern construction litigation was probably readily apparent—so why does such a negative case for Jury Verdict proponents like *Dawco* feature so prominently here?

There should be no question of disagreeing with the appellate court in Dawco. It is cases such as these that are often responsible for a court's reluctance to use the TCM/MTCM or Jury Verdict Methods and explain why the methods are classified as disfavoured options of last resort. However, what is less often noted by commentators is the relatively small size of the contracts and disputes involved in most of the leading cases. Arguably more difficulties are going to be encountered when attempts are made to use these flexible doctrines at the lower end of the spectrum where there are fewer events to untangle and record keeping involves a handful of people not hundreds. In major international projects with budgets one or two thousand times the contract amount in *Dawco,* the complexity of the problems likewise grows exponentially, especially when complex issues of multiple delays become part of the equation. It seems that some degree of flexibility, as afforded by the TCM/MTCM and Jury Verdict Methods, is a logical development in response to the challenges of major construction sites.

Impact of delay analysis and concurrent delay

Continuing with the theme of the last paragraph, decisions where the courts have imposed a strict adherence to the direct cost approach for computing damages often state or imply that modern accounting and programming tools mean that there is no excuse for not maintaining the level of records that are theoretically needed to support a direct cost approach. The existence of powerful software programmes, however, is often, innocently or otherwise, part of the problem not the solution. This is nowhere more true than in the field of programming (scheduling).

Issues related to approved construction programmes and project updates can be the heart of factual evidence leading up to a TCM/MTCM case or a request to apply the Jury Verdict Method, but the fact is reasonable men can, and often do, disagree about how these documents should be prepared.

Construction contracts usually require the contractor to submit a detailed programme for approval at the beginning of the project. Frequently the parties cannot agree on the durations or the logic constraints to be applied and sometimes no baseline programme is ever established. Even when there is an agreed baseline programme, the process of reporting progress, updating and recording scope impact and recovery measures can become contentious and chaotic.

Clearly contractors can be responsible for shenanigans in this process, but in many cases employers place pressure on contractors to "move activities to the left" and/or can be prone to protracted discussion over minutiae often out of fear of "approving" a document they know has important contractual value. Updating the programme or accounting for the impact of variations can be even more contentious. Often an employer will not accept to grant timely extensions to the completion date, forcing the contractor to guess whether he should consider that time is at large or whether he should accelerate his works and claim.[52] On projects worth several hundred millions of dollars or euros with dozens of subcontractors working over many years these pressures can impair the programming process.

These issues are one factor leading to a need for the more flexible rules of the MTCM and Jury Verdict doctrines, however, the delay element of a claim is also subject to further rules of analysis which have developed over time. Some of these rules are hotly contested among experts meaning that the trier of fact has to have a degree of leeway in making decisions in the face of

[52] American construction contracts are deemed to include several implied obligations and conditions. Among them is a duty to grant reasonable time extensions in a timely manner (*Continental Consol Corp* v. *United States*, 200 Ct Cl 737 (1972)). Because a time extension not granted in a timely manner has no benefit to a contractor, courts and boards have been willing to accept that breach of this implied obligation is tantamount to an acceleration instruction or "constructive acceleration". Although there are notable exceptions, the contractor must generally give notice that a time extension is due and notify again if he is involuntarily taking acceleration measures as preconditions to recovery. (*Fermont Div, Dynamics Corp of America*, ASBCA No 32970 75–1 BCA (CCH) ¶ 11,139 (1975); *MSI Corp*, GSBCA No 2429, 68–2 ¶ 7377 (1968)). Acceleration measures can involve straightforward direct costs, but they can often translate into difficult to calculate lost productivity issues. The matter can be further complicated where forensic analysis eventually reveals the existence of both excusable and non-excusable delay prior to acceleration. All these elements render disputes related to constructive acceleration appropriate for the less rigid evidentiary analysis applied in TCM/MTCM or Jury Verdict Method cases. In an interesting paper entitled "Constructive Acceleration: Waking the Sleeping Giant" (2004 AACE International Transactions CDR.03), by Thomas F Peters, it is suggested that because of the reluctance to accept TCM claims, courts and boards may see a rise in constructive acceleration claims. Given however the existence of the alternative MTCM and Jury Verdict doctrines such a correlation may arguably not arise. Mr Peters goes on to suggest that an employer can avoid the issue of constructive acceleration by including contract language which allows for the granting of time extensions contemporaneously, but leaves the consideration of compensability for the delay until after project completion. Mr Peters' logic is based on the *Fermont* case

"convincing but conflicting evidence"[53] as may be presented by the opposing parties.[54] No "rule" is more contentious than evaluation of concurrent delay.

Doyle and concurrent delay

In the *Doyle* case the observations of Lord Drummond Young regarding global claims, and his description and endorsement of the existence of conditions where the MTCM approach could be applied, does not strike an American observer as a particular departure from arguments he or she would apply in their home jurisdiction. It is only in connection to his commentary on concurrent delay in paragraphs [15] and [16] where his views substantially diverge. After a discussion of the dominant cause doctrine, as applied in the UK, Lord Drummond Young suggests that even if the events for which the employer is responsible do not meet the dominant cause test, but are nevertheless a material cause of the loss, an apportionment of the loss between the causes may be possible. Paragraph [16] states in part:

> "... we are of opinion that apportionment of loss between the different causes is possible in an appropriate case. Such a procedure may be appropriate in a case where the causes of the loss are truly concurrent, in the sense that both operate together at the same time to produce a single consequence. For example, work on a construction project might be held up for a period owing to the late provision of information by the architect, but during that period bad weather might have prevented work for part of the time. In such a case responsibility for the loss can be apportioned between the two causes, according to their relative significance. Where the consequence is delay as against disruption, that can be done fairly readily on the basis of the time during which each of the causes was operative. During the period when both operated, we are of opinion that each should normally be treated as contributing to the loss, with the result that the employer is responsible for only part of the delay during that period. *Unless there are special reasons to the contrary, responsibility during that period should probably be divided on an equal basis* [emphasis added], at least where

which requires employers to recognise contemporaneously excusable delay without mentioning compensable delay. This approach would not be favoured by most commentators including in the UK. (See Core Principle No 3 of the Society of Construction Law's Delay and Disruption Protocol which states in part: "The parties should attempt so far as possible to deal with the *impact* of Employer Risk Events as the work proceeds, both in terms of EOT and compensation.") A deferral approach also assumes a time extension would be an acceptable solution for the employer when very possibly the employer wants to maintain the original completion date and is evading (innocently or not) the question of paying for the acceleration. Another potential problem for the employer is that the granting of a time extension may result in shifting the burden of proof regarding the compensability for the delay from the contractor to the employer as found in *Gottfried Corp*, ASBCA No 51,041, 98–2 BCA ¶ 30,063 (1998): "we stated in another appeal as follows:

> Respondent's grant of the 55 day extension in Modification 4 amounted to a recognition by it that the overall project was delayed to that extent and an administrative determination that the delay in question was not due to the fault or negligence of appellant. It also raised a presumption, subject to rebuttal, that respondent was responsible for the delay."

[53] *Air-A-Plane Corp*, ASBCA No 3842, 60–1 BCA ¶ 2547 (1960).

[54] An example of this is *Tyger Construction Co* v. *United States*, 31 Fed Cl 177 (1994), here the court agreed with the delay and critical path analysis presented by the plaintiff's expert witness up to a certain point in time and then relied on the expert's analysis provided by the defendant effectively combining the two to achieve a basis upon which to calculate the delay damages.

> the concurrent cause is not the contractor's responsibility. Where it is his responsibility, however, it may be appropriate to deny him any recovery for the period of delay during which he is in default."[55]

This is a departure from the generally accepted American doctrine which resolves the issue differently by granting the contractor a time extension but bars him from receiving additional compensation.[56] The prevailing American rule in this regard (sometimes referred to as the "time no money" rule) is similar to the Society of Construction Law's Delay and Disruption Protocol, Core Principles Nos 9 and 10,[57] with the exceptions that the Protocol prefers to say that concurrent delay does not reduce an extension of time otherwise due but for the concurrency rather than stating the right to an extension of time in the affirmative and, more importantly, the Protocol allows the recovery of costs if there is a possibility of "... separately indentify[ing] the additional costs caused by the Employer from those caused by the Contractor delay", but only if the contractor would not "have incurred the additional costs in any event as a result of Contractor Delays".[58]

In situations where "true" concurrent delay does not exist under modern American jurisprudence many courts will look at the possibility of apportionment also, but the analysis focuses heavily on separating out critical path delays from non-critical path delays and is as much, if not more, concerned with the impact on liquidated damages as it is with clearing the way for a contractor recovery.[59]

It will be interesting to see what if any future path Lord Drummond Young's view on concurrent delay will take.

The comparative negligence parallel in tort law

It could be said that a TCM claim can only succeed if the plaintiff comes to court with "clean hands", because any finding of fault on the part of the

[55] This would seem to mean that the contractor would be entitled to half his damages for the impacted period. Lord Drummond Young does not discuss liquated damages which might be applicable because of the concurrent delay. It would, however, be logical to assume that the contractor would be liable for half the liquidated damages also. In his last sentence, Lord Drummond Young indicates that where the concurrent cause falls under the contractor's responsibility that "... it may be appropriate to deny him any recovery for the period of delay...". That reasoning would be consistent with American practice and the Protocol provided that the contractor received a non-compensated extension of time. However it is unclear whether a bar on *"any recovery*" was meant to include extensions of time.

[56] This assumes a case of "true" concurrent delay meaning that the delays occur at the same time and have the same duration and are both on the critical path, which is admittedly a somewhat rare occurrence.

[57] Society of Construction Law: Delay and Disruption Protocol, *op. cit.* note 19, Core Principles Nos 9 & 10 at p. 7.

[58] The Protocol does not discuss liquidated damages specifically with regard to concurrent delay, but given the wording of the Protocol, which states at Core Principle No 9: "... the Contractor's Delay should not reduce any EOT due ..." it seems logical to assume that even if separation of costs was possible, time would not be apportioned and no liquidated damages would be due.

[59] Some courts still apply a more traditional rule which allows the contractor to escape liability for liquidated damages if the employer has any responsibility for the delay (*Re Construction Diversification, Inc*, 36 Bankr 434 (ED Mich 1983)). However in many of these jurisdictions the jurisprudence is usually based on cases where CPM programmes did not exist. Even in jurisdictions where apportionment is used, the lack of a CPM will normally mean no attempt at apportionment will be made.

contractor will serve as a bar to his entire recovery under the pure TCM doctrine. This is exactly analogous to the traditional position taken by courts in respect of negligence actions in tort. If a plaintiff suing in tort was found to have been behaving negligently himself in any way, her action would have been dismissed for "contributory negligence" which likewise used to serve as a complete bar to her recovery.[60]

Over time, courts and state legislatures became dissatisfied with results of the "clean hands" doctrine which they believed resulted in too many defendants escaping liability, or at least partial liability, for their negligent acts. The solution was to apportion the fault among the parties. The trier of fact determines what percentage of the responsibility is born by the plaintiff and the ultimate award is reduced proportionally. This system, know as comparative negligence, was in use in 46 states as of January 2002.[61] Within these states one can find three variants of the system. The first variant, often know as the "pure" system, allows the plaintiff to recover a portion of the damages even in situations where he is found to be the substantially negligent party. In other words the plaintiff may be found to bear 80% of the responsibility, but he will still be permitted to recover 20% of his damages. The other two variants are referred to as the "modified" scheme. Under the two modified schemes the plaintiff must not be found to be more than 50 or 49% responsible, respectively, before he will be allowed to recover proportioned damages.[62]

The principles in play, and the path taking the American legal system from contributory negligence (as a defence), to comparative negligence, are not very different from the evolution in TCM claims towards the use of MTCM principles and the Jury Verdict Method described above. It is arguable that contract law needs to and should catch up with tort law in this respect.

Lord Drummond Young, in the *Doyle* case, apparently also considered the parallel with comparative negligence to have merit in construction cases. In paragraph [17] he states:

> "[17] Apportionment in this way, on a time basis, is relatively straightforward in cases that involve only delay. Where disruption to the contractor's work is involved, matters become more complex. Nevertheless, we are of opinion that apportionment will frequently be possible in such cases, according to the relative importance of the various causative events in producing the loss. Whether it is possible will clearly depend on the assessment made by the judge or arbiter, who must of course approach it on a wholly objective basis. It may be said that such an approach produces a somewhat rough and ready result. This procedure does not, however, seem to us to be fundamentally different in nature from that used in relation to contributory negligence or contribution among joint wrongdoers. Moreover, the alternative to such an approach is the strict view that, if a contractor sustains a loss caused partly by events for which the employer is responsible and partly by

[60] *Ward* v. *Clark*, 232 NY 195, 133 NE 433 (1921).

[61] Uniform Apportionment of Tort Responsibility Act (Sixth Tentative Draft, Styled, 22 January 2002) by the National Conference of Commissioners on Uniform State Laws (http://www.law.upenn.edu:bll/ulc/uatla/draft012202.htm)

[62] Interestingly, the move to comparative negligence has been made largely by way of state legislation, but in 10 of the 46 comparative negligence states the shift was brought about by judicial decision.

> other events, he cannot recover anything because he cannot demonstrate that the whole of the loss is the responsibility of the employer. That would deny him a remedy even if the conduct of the employer or the architect is plainly culpable, as where an architect fails to produce instructions despite repeated requests and indications that work is being delayed. It seems to us that in such cases the contractor should be able to recover for part of his loss and expense, and we are not persuaded that the practical difficulties of carrying out the exercise should prevent him from doing so."

The question seems to distill down to individual viewpoints with respect to the necessity, or often the possibility, of maintaining the level of records and the expense of contemporaneous analysis of causation for the myriad of events that can flood a major construction project. Even for those readers who believe you can keep your head above water, does that really mean one should be obliged to do so when apportionment is often a cost-effective solution? Considering that at the most fundamental level the plaintiff's obligation is to prove his case by the preponderance of the evidence (51% probability), it is hard not to see merit in the progressive approaches described in *Doyle*.

Conclusion

The proponents of both sides of this issue are likely to support their arguments by expressing the need for protection against windfalls. Advocates of the direct cost, and direct cost only, approach will say that anything else will lead to a flood of claims and ultimately unjustified awards based on flimsy evidence. Advocates of the Modified Total Cost Method and Jury Verdict Method will argue that their opponents' "clean hands" approach sometimes raises the bar too high and encourages employers not to come to grips with chaos on a site.

The public policy question is, therefore, unfair windfall for either party, and the legal question is burden of proof and causation. Too high a standard will create unfair windfalls for employers and standards set too low will have the opposite effect.

No serious proponent of a more flexible standard is advocating removal of safeguards or eliminating the requirement to submit evidence of causation. The issue really is: can we dispense with proof of causation for events individually when they are part of an intertwined series of events? It is legitimate to raise this issue whether the body of costs under analysis represents the whole of the costs or only a sub-portion of them. As a practical matter the situation will normally arise in relation to a sub-portion rather than the whole. It is, therefore, unfortunate that the legal question was first raised in respect of claims representing the whole of the contractor's additional costs thus framing the debate only in terms of "global" or "total cost" claims. Obviously it is a rare occurrence when a contractor can recover his entire additional cost in this way, because it assumes none of the additional costs were his responsibility. The argument in respect of "pure" total cost claims perhaps appeared offensive on the face of it and solicited,

unfairly, early decisions rejecting the entire claim. In other words the baby was thrown out with the bath water. However, today the question is what to do with the parties once a pure TCM "fails". Can the court work backwards from the evidence produced to separate out losses not compensable because they were caused by factors not the responsibility of the employer? Can they examine the contract price or tender amount and develop a more reliable base line? Can a portion of the loss be analysed using the measured mile doctrine? Can a "Jury Verdict" apportionment be made in respect of other amounts? Can portions of the loss be carved out and treated separately because they are supported by direct costs with clear proof of causation? It appears that Lord Drummond Young in *Doyle* does support the viewpoint that courts should make this effort despite the practical difficulties of doing so. The complexity of major disputes lends itself to the use of all these tools in whatever combination may be logical under the legitimate circumstances.

Under these progressive approaches, a case will still stand or fall based on the quality of the evidence and the threshold tests provide adequate safeguards.[63] The *Dawco*[64] case discussed above is a clear example. The court in *Dawco* recognised the Jury Verdict Method, but the contractor failed to substantiate his quantum and provide any basis for a fair and reasonable approximation of damages, thereby failing the third of three threshold tests applied by a court or board before it will accept to use the Jury Verdict Method.[65] In the *Hewitt*[66] case on the other hand the court found that the plaintiff had established a "confidence level" in his supporting documentation and proceeded to make only one adjustment in what was otherwise a total cost award.

With regard to causation, no court or commentator disagrees with the supposition that the trier of fact must believe, by the preponderance of the evidence, that the defendant has acted in such a culpable way so as to produce real damages. Once that is established, however, and provided the evidence submitted does inspire a level of confidence, the fact that it may be difficult to determine the precise amount of the damages should not deter the court from trying to do so. As expressed in the *Story Parchment* case:

> "It is true that there was uncertainty as to the extent of the damage, but there was none as to the fact of damage; and there is a clear distinction between the measure of proof necessary to establish the fact that petitioner had sustained some damage, and the measure of proof necessary to enable the jury to fix the amount. The rule which precludes the discovery of uncertain damages applies to such as are not the certain result of the wrong, not to those damages which are definitely attributable to the wrong and are only uncertain in respect of their amount."[67]

[63] See Appendix for a list of TCM/MTCM and Jury Verdict Method threshold tests.

[64] 930 F 2d 872, CA Fed (1991).

[65] Most commentators agree that "puffing" or inflated claims are easily spotted. If a plaintiff is not willing to provide real cost data it is clear something is wrong. The US Government has increased its enforcement of the False Claims Act (31 USC §§ 3729–3733 (1983 and Supp. 2002)). The Act imposes a minimum fine of $5,000 and triple damages on any contractor knowingly submitting a false or fraudulent claim.

[66] ENGBCA Nos 4596–4597, 83–2 BCA ¶ 16,816 (1983).

[67] *Story Parchment Co*, 282 US 555, 51 S Ct 248 (1931).

In this regard, Lord Drummond Young's observations in respect of causation in paragraph [20] of his opinion seem pertinent: "Causation is largely a matter of inference, and each side in practice will put forward its own contentions as to what the appropriate inferences are" and further: "What is not necessary is that averments of causation should be over-elaborate, covering every possible combination of contractual events that might exist and the loss or losses that might be said to follow from such events."

Unless the common-sense principles discussed in this paper are applied, employers will escape liability and thereby receive an unwarranted "windfall". In addition, when these principles are applied, they contain within them adequate safeguards to protect employers against contractor windfalls.

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APPENDIX: SUMMARY OF COURT APPLIED TESTS

Ordinary (UK) Test for Contractual Loss and Expense

(*John Doyle Construction Ltd* v. *Laing Management (Scotland) Ltd*, Extra Division, Inner House, Court of Session, A806/01.)

(1) The occurrence of an event for which the defender bears legal responsibility,
(2) that he has suffered loss or incurred expense, and

(3) that the loss or expense was caused by the event

Total Cost Method Test (TCM) (US)

(*JD Hedin Constr Co* v. *United States*, 171 Ct Cl 86, 347 F 2d 235, 246 (1965); *Hewitt Contracting Co*, ENGBCA Nos 4596, 4597, 83–2 BCA ¶ 16,816 at 83,643 (1983).)

(1) The nature of the losses makes it impossible or highly impractical to determine the amount with a reasonable degree of accuracy;
(2) the contractor's bid or estimate was realistic;
(3) the contractor's actual costs were reasonable; and
(4) the contractor was not responsible for the added expenses.

The four-point test described above, which is applied to the plaintiff's factual evidence, is used to determine whether he has met the necessary level of proof required to prevail. The *Doyle* case does not discuss, however, an often used, and somewhat overlapping, threshold test which US courts and boards have also been known to apply. For a TCM claim to proceed it should satisfy the following three-point test:

(1) Proper safeguards exist;
(2) there is no better method of proving costs; and
(3) there is some basis for determining a reasonable amount related to the entitlement.[68]

Modified Total Cost Method Test (MTCM) (US)

(*Hewitt Contracting Co*, ENGBCA Nos. 4596–4597, 83–2 BCA ¶ 16,816 (1983).)

Same as TCM Test above, except the court adjusts one or several of the first four prongs of the tests listed above to account for costs caused by the contractor's own inefficiencies or other faults.

Jury Verdict Method (US)

(*Tutor Saliba-Perini*, PSBCA No 1201, 87–2 BCA (CCH) 19,071 (1986), *Dawco Construction Inc* v. *United States*, 930 F 2d 872 at 880–881, CA Fed (1991), *Southwest Marine Inc*, ASBCA No 36,854, 95–1 BCA ¶ 27,601 (1995).)

(1) Clear proof of injury exists,
(2) there is no more reliable method for computing damages, and
(3) the evidence is sufficient for a court to make a fair and reasonable approximation of the damages.

[68] *Glasgow, Inc* v. *Department of Transp*, 108 Pa Commw 48, 529 A 2d 576 (1987); *United States ex rel. United States Steel Corp* v. *Construction Aggregates Corp*, 559 F Supp 414 (ED mich 1983); *WRB Corp* v. *United States*, 183 Ct Cl 409 (1986).