

Concurrent Delays in Construction: International Legal Perspective

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Abstract: The term “concurrent delays” describes the situation when more than one delay occurs simultaneously, either of which would alone delay the overall project. The responsibility of concurrent delays is usually attributable to opposing parties to the contract, such as owner and contractor. This often leads to disputes concerning the extent to which each of the parties is responsible for project delay. Lack of agreement on the approach to properly apportion the damages because of concurrent delays exists throughout the various legal systems worldwide. Most of the time, judgments with respect to apportionment because of concurrent delays by courts are based upon precedents and case law owing to lack of agreed to legal practice. Realizing such need, this study overviews and compares various approaches adopted by courts with respect to ruling on concurrent delay claims and apportionment under different legal system legal systems including the United States (U.S.), Canada, United Kingdom (U.K.), and Australia. This study concludes that in general the U.S. approach in dealing with concurrent delay claims is far more mature and relatively more consistent compared with the other studied legal systems. DOI: 10.1061/(ASCE)LA.1943-4170.0000134. © 2013 American Society of Civil Engineers.

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Introduction

Construction contracts require projects to be completed within specified durations and budgets. Because of the unique nature of construction projects, completing a project by the scheduled completion date often is a challenge. The tendency of projects to experience delays has attracted extensive research efforts worldwide, especially with respect to analyzing construction delays. Schedule delay analysis is among the most challenging tasks in formulating and defending construction claims. Such analysis becomes more complicated when concurrent delays exist. Concurrent delays occur when the effect of two or more independent delays impede project progress while each delay alone would have caused delay to project completion (Rawling 2003). When dealing with delay claims, analyzing concurrent delays is possibly the most challenging task faced by claim analysts and construction lawyers.

Typically, delay analysts attribute concurrent delays to the opposing parties of a delay claim. Under these circumstances, the owner is obligated to grant a time extension without monetary compensation to the contractor. Owners often try to avoid paying monetary compensation to the contractor by alleging that the experienced delays are either the responsibility of a third party or are concurrent delays (Zack 2001).

The global construction industry and the legal system need a proper approach for fair apportionment of concurrent delays and their damages. The problem with proper apportionment of concurrent delays is that there exists no agreed definition for construction

concurrent delays; thus, most of the time, court rulings with respect to delay claims are based on case law. This study is intended to discuss and compare the different approaches used by various legal systems worldwide to pave the road for future implementation of a uniform approach with respect to apportionment of concurrent delays.

This paper first addresses the inconsistency in defining and characterizing concurrent delays based on their occurrence by researchers and the construction industry. Second, a review of the general legal principles with respect to evaluation and apportionment of concurrent delays has been presented. The discussion has been presented in the light of the different approaches, being adopted by various courts, to rule on concurrent delay claims and apportionment under different legal systems, including the United States (U.S.), Canada, United Kingdom (U.K.), and Australia. Furthermore, a comparative analysis of the U.S. approach versus each of the other studied countries has been presented.

Definition of Concurrent Delays

Concurrent delays are sometimes referred to as simultaneous delays, commingled delays, or intertwined delays. A concise and clear definition of concurrent delays is essential to the understanding of the delay concurrency issue. Globally, debatable argument exists among researchers and analysts with respect to the definition of concurrent delays in the construction industry.¹ Defining concurrent delays by researchers and analysts varies depending on their perspective on the occurrence of concurrency. Thus, various definitions of concurrent delays can be characterized into the following three categories: (1) event-based only; (2) cause/effect-based only; or (3) combined event and cause/effect basis.

Event-Based

Many researchers and analysts tend to define concurrent delays on the basis of the occurrence of the actual delaying events only. Their definitions seem to put forward an argument that it is the concurrent occurrence of actual events that causes the delay no matter when

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their causes started to unearth. In Reynolds and Revay (2001), for instance, “Concurrent delay is experienced on a project when two or more separate delay events occur during the same time period and each, independently, affects the completion date.” The phrase “delay events occur during the same time period on a project” refers to the occurrence of the actual events. Rubin et al. (1983), Baram (2000), and Boe (2004), define concurrent delays with a similar approach.

Cause/Effect-Based

Another school of thought considers delays to be concurrent only if their effects and/or causes happen at the same time. For instance, Bidgood et al. (2008) define concurrent delays in such a manner by stating that: “[e]ffects are ‘concurrent’ when their respective causes (whether simultaneous or sequential) operate or have their effects simultaneously upon a single work element or phase of contract performance.”

Combined Event- and Cause/Effect-Based

According to this characterization for defining concurrent delays, researchers argue that delay concurrency can be deemed to occur either when the actual delaying events occur at the same time or the cause/effect of the delays is occurring at the same time. For instance, Ponce de Leon (1987) broadly defines concurrent delays either as two unrelated delays taking place in an overlapping time frame while both delays fall on parallel critical paths, or two unrelated delays occurring at different time frames while both fall on two as-built critical paths.

Based on the preceding, there is a lack of clear and concise agreement on the definition of concurrent delays. The confusion in the definition stems from the fact that the overlapping of the delay events effects of two or more delays is often confused with the overlapping of the causes or reasons behind such delays. It is important to understand that multiple delay effects may occur at the same time, but the causes behind those delays may not be an issue of concurrency.

Study Overview

The primary purpose of this study is to compare construction law practices with respect to formulating and dealing with concurrent delays under several legal systems. The discussion is focused on two major aspects of concurrent delay issue, i.e., (1) the general principles; and (2) apportionment approaches with respect to concurrent delays. The legal systems compared include the United States, Canada, the United Kingdom, and Australia. Several landmark cases from the last century that set forth the foundation in dealing with concurrent delays have been utilized to present the discussion. Afterward, discussion presents a comparative analysis of the U.S. approach versus each of the other studied countries to gauge the efficiency of the U.S. practices. The study is not only an effort to highlight varying legal practices of the chosen countries, but it is also deemed to provide a benchmark for further evaluation of the concurrent delay related issue.

U.S. Legal Environment and Practice

This section presents the general legal principles as being applied in evaluation of concurrent delays in the United States. Furthermore, it will discuss the contemporary U.S. case law and apportionment practices for the concurrent delays that are accepted or adopted in

the U.S. legal environment as depicted by the court decisions in various cases.

General Principles

Although concurrent delays are difficult to evaluate because of simultaneous occurrence, the basic principle remains the same. First, it has to be decided if delays are excusable or nonexcusable, and to decide whether the excusable delay is compensable or non-compensable. Despite the fact, it is still difficult to evaluate whether a specific delay has impacted the overall project. Such an evaluation certainly requires a robust analysis and investigation into the facts. For delays to be called concurrent, the effects of the delay events must impact project progress in similar time periods, although not necessarily exactly at the same time period. Indeed, it is rare that concurrent delays start and end at the same time.

Literature shows that historically, courts have dealt with concurrent delays mostly using subjective (or in better terms, qualitative assessment) or just by in general comparing schedules of different time lines. The courts have historically based their decisions on two basic rules, i.e., the Easy Rule and the Fair Rule.

- The Easy Rule is applied by courts whenever mutual responsibility occurs, i.e., when each opposing party is involved in causing the concurrent delay(s). In this case, the only remedy is granting extension of contract time to the contractor. Therefore, the Easy Rule neither allows apportionment nor compensation to either party. The court settles on allowing the time extension, with each party suffering its own losses. This approach is defined by the courts as “Doctrine of Concurrent Delay.” The doctrine is based upon construction contracting norms specifically for public projects. The roots of the doctrine can also be found to be originated from private construction. In *Gogo versus Los Angeles Flood Control District*, the court decided that the plaintiff was not entitled to any recovery. This was because the plaintiff did not complete its job in the specified contract period and even after the consideration of the defendants’ acts of delays, the plaintiff was not entitled for compensation. The defendant wanted the court to apportion the damages to both, but the court refused to enforce the provision of liquidated damages owing to the occurrence of delays because of mutual fault. The court used case law in this regard and quoted the example of *Champlain Construction Co., versus O’Brien*, in which the respective court denied damage apportionment by stating that there was no way to apportion, because either the damages must have been allowed as a whole or nothing. The Easy Rule is usually applied if the litigants fail to prove the claims or the court is unwilling to resolve the claim in the sense that calculation of the apportionment cannot be done accurately. The Easy Rule has been applied in various decisions by the courts in the United States. A good example of such application is found in the court’s decision of *Jefferson Hotel Co., versus Brumbaugh*.
- In contrast to the Easy Rule, the Fair Rule apportion damages. In apportioning the damages as per the Fair Rule, courts have to clearly conclude that either of the parties was responsible for the apportioned percentage based on reasonable facts in the records, e.g., *United States versus William F. Klingensmith, Inc.* (Kraiem and Diekmann 1987). Another example is that of *Raymond Constructors of Africa, Ltd., versus United States*. The road construction project had three causes of delays related to procuring equipment (the U.S. Government’s responsibility), equipment shipping (Sudanese government’s responsibility), and delay owing to inexperience of using the available equipment to full potential (contractor/subcontractor responsibility). For most of its account, the delays were sequential with certain overlap

periods. The court considered the overall delay as concurrent. The court simply ordered to split the responsibility equally among the three parties; thus, the contractor was awarded one-third of the cost incurred for delay by the U.S. Government in procuring equipment. The decision also showed that if the courts decide to apportion the concurrent delays, generally, they are not overly concerned with matching causes of delay temporally in order to consider the causes concurrent.

Contemporary U.S. Case Law Practice

The contemporary U.S. case law history shows that often delay analysis based on the critical path method has been emphasized upon by the courts. The rationale is that it provides ideal ground for defense of concurrent delays by the defendant through its assertion. However, this also means that a defendant, if wrongdoer, can avoid the financial liability by (somehow) proving that the claimant also caused either an excusable or nonexcusable delay. As a result, the defendant will be able to avoid any financial penalty by proving that delay would have occurred in any case. It can also lead to a situation in which a wrongdoer defendant may be able to squeeze out some money from the innocent claimant for the fact that he was not able to prove the delay, and failure to do so has caused losses to the (wrongdoer) defendant.

Although there are some issues as stated through the aforementioned scenarios, the United States still has the greater experience in dealing with concurrent delay cases compared with other legal environments compared in this study. Therefore, the U.S. practice can be termed as setting the benchmark. Several researchers have tried to summarize guidelines through U.S. case law practice, which can be regarded as general principles for dealing with concurrent delays. Such general principles can be found in Bramble and Callahan (2000). These principles are quoted and summarized as follows:

1. The involved parties should be able to provide the calculations for both time and cost in case of concurrent delay.
2. The responsibility of proving lies more on the party that is asking to recover financially.
3. If a third party is involved (other than client and contractor) along with contractor in causing delays, the majorly accepted approach is that contractors could be awarded "time extension."
4. In case of concurrent delays being excusable and nonexcusable, only time extension can be granted. In case both delays are compensable, compensation because of one delay only will be allowed.

Apportionment of Concurrent Delays

Analysis of concurrent delays raises various issues because sometimes, both owners and contractors use concurrent delays as a strong defense tool against one another. For instance, owners use them to protect their interest in not paying extended general conditions, whereas contractors use them to neutralize or waive their inexcusable delays and hence avoid paying liquidated damages. Courts, boards, practitioners, and researchers are generally inconsistent in terms of both definitions, as mentioned earlier, and apportionment of concurrent delays.

When it comes to the imposition of the liquidated damages, the courts in the past have generally not attempted to apportion the damages but have simply held that the provisions of the contract with reference to liquidated damages be annulled. The courts had adopted such a rule to avoid speculation regarding the relative delay caused by the parties. A perfect example of this can be observed in

the case of *Acme Process Equipment Co., versus United States*, which involved the denial of liquidated damages attributable to mutual delay. The court stated:

[W]here delays are caused by both parties to the contract, the court will not attempt to apportion them, but will simply hold that the provisions of the contract with reference to LDs will be annulled.

On the other hand, sometimes it is also considered that concurrent delays are similar to excusable delays. That is, contractors are entitled to time extension only. When a compensable delay is concurrent with an inexcusable delay, the scenario follows the "easy rule" or "contributory negligence." However, a recent trend advocates an equitable apportionment when compensable and inexcusable concurrent delays occur. This trend is described as the "fair rule" (Kraiem and Diekmann 1987) or "comparative negligence." Fair apportionment means apportionment of days and/or dollars. This rule can be derived from two different doctrines: the doctrine of contributory negligence and the doctrine of comparative negligence. Ibbs and Nguyen (2007) proposed an approach for quantifying field-overhead damages. This approach supports such a fair apportionment.

Both Easy and Fair Rules have been explained in detail earlier in the paper. It is more equitable and reasonable to apportion damages in concurrent delay circumstances. Current practice reveals that courts and boards can adopt the doctrine of comparative negligence for solving concurrent delays.

Another related issue to concurrent delays is that of sequential delays. During sequential delays, if another party causes different delays, the delays may still be considered concurrent if generated out of similar circumstances. In case of sequential delays, the contractor had usually tried to rely on the "rule against apportionment." However, apportionment of liquidated damages in a sequential delay situation is sanctioned based on evidence being needed to establish "a clear apportionment of delay and expense attributable to each party" is available. An example of that is the case of *Raymond Constructors of Africa Ltd. versus United States* stated earlier in this paper.

Considering the aforementioned different cases, it could be concluded that although differences of approach exist in dealing with the concurrent delays' apportionment, the approaches adopted in each of these circumstances are well measured, are relatively suitable for the particular situation, and are also aligned with the general approach defined previously in the text. Thus, those general outlined principles can be referred to as standard dealing methodologies as far as the U.S. construction law is concerned.

Canadian Legal Environment and Practice

This section provides an overview of the Canadian general legal principles and apportionment practices in dealing with concurrent delays.

General Principles

The Canadian practice is similar in nature to that of the U.S. practice. However, no agreed guidelines deal with concurrent delays, but certain landmark judgments can be used as general guidelines. For instance, in *Pacific Coast Construction Co., Ltd., versus Greater Vancouver Regional Hospital District*, the judgment highlighted the concurrency debate. The court observed that the contractor was entitled to certain compensation because of owner's actions. However, despite the existence of records and

evidence, it was not possible to calculate impact costs because of the complex nature of the required calculations. Such calculations, from the court's perspective, should have included various contributory factors, including delay caused by the contractor itself, delays of unassignable responsibility (unavoidable), delays caused by the owner, and even comparing the quality of the baseline schedule prepared by the contractor against a "reasonable schedule" (Reynolds and Revay 2001). However, the court did not involve itself in doing such calculations because it is universally accepted practice that it is not the court's responsibility to perform delay analysis.

The review by authors found out that there are not many judgments in the Canadian case law which have implemented the recommended analysis in the aforementioned case example in its letter and spirit. The courts have usually adopted "do the best it can" approach to apportion such damages. Some examples of such case law judgments are presented in the next subsection.

Apportionment of Concurrent Delays

Apportionment of concurrent delays becomes necessary when different parties are responsible for different concurrent delays or a third party delay runs concurrently with contractor's delay. The court's remarks in *Kor-Ban, Inc., versus Pigott Construction Ltd.* provide an example of such a scenario:

Delays resulted from a variety of causes, including, but by no means limited to, subcontractors not carrying out their work in accordance with the schedule . . . changes ordered in the work by the owner or architect and strikes by various trades.

The concurrent delay apportionment practice in Canada suggests a two-tier system. The first level is that if the court has agreed that there is a contributory negligence on the part of the claimant and the defendant, then the claimant argues that the court should do the best it can to apportion the delay damages among the stakeholders. In addition to this, if the court is able to conclude that the defendant has somehow materially contributed to the delay, it shall try its best to overcome the hindrance to compensation, such as the "Principle of Several liabilities."² The second level is that if the court is unable to do so, then the apportionment shall be done on an equal responsibility basis. There are various examples in which the courts have applied the "best it can" practice to determine the apportionment among the involved stakeholders. In *Continental Breweries, Inc., versus 707517 Ontario Ltd. (C.O.B. Northern Algonquin Brewing Co.)*, the contractor filed a claim against the owner to recover for the delay caused by certain actions. Because the project was delayed, the owner also counterclaimed the contractor for recovery of delay damages. The court found out that contractor was primarily responsible for the cause of delay because of its various actions, more importantly related to lack of experience regarding the complexity of such project. The court also found out that the owner was also partially responsible for some of the delay period primarily because it made certain changes in the design. The court apportioned 80% of the delay to contractor and 20% to owner (Reynolds and Revay 2001).

In another case of *Foundation Co. of Canada versus United Grain Growers Ltd.*, the owner (Foundation) hired contractors (United) for a renovation project and Cross Town Metal Industries, Ltd. (contractor's engineer) for the sheet metal work. The project was delayed and the owner sued both the contractor and its engineer. In turn, the contractor also counterclaimed the owner. The court found that the contractor and its engineer were responsible for delaying the project by 3 months and that this delay was concurrent with certain delay actions by the owner.

In apportioning the indemnity, the court entitled 75% of the compensation to the contractor and its engineer with the remaining 25% to the owner.

The preceding case decisions can be regarded as the general apportionment practices adopted by the Canadian legal system. The Canadian practice is somewhat similar in nature to that of the United States with respect to apportionment of concurrent delays.

Australian Legal Environment and Practice

This section provides an overview of the Australian general legal principles and apportionment practices in dealing with concurrent delays.

General Principles

Australian practice is very interesting and proactive toward dealing with concurrent delays. The concurrent delay problem has been addressed to a certain level in the standard contract form. The Clause 35.5 of the general conditions of the contract, AS 2124-1992 (Standards Australia 1992), which is still preferred by many government departments, is an example of an attempt to deal with the issue of concurrent delays, which states

Where more than one event causes concurrent delays and the cause of at least one of those events, but not all of them, . . . , then to the extent that the delays are concurrent, the contractor shall not be entitled to an extension of time for practical completion.

As a result of this clause, the dual-entitlement of time extension to the contractor is avoided. This is in the case when one of the delays, for which time extension (contractually) is not allowed, occurs concurrently with a delay for which time extension is applicable. The contractor will be allowed time extension for only the later delay in this case. However, in term of overall concurrent delay (possible) scenarios, the clause is not a balanced approach. This is specifically true for apportionment between liable and nonliable delays. Still the contractor is able to use common law in various scenarios when the previously mentioned clause cannot provide complete interpretation of the situation.

In the updated version of the general conditions of the contract, AS 4000-1997 i.e., AS 4000-1997 [incorporating amendments 1 (1999), 2 (2000), and 3 (2005)] (Standards Australia 1997), the concurrent delay issue has been addressed through fair apportionment by the superintendents. The clause 34.4 of the standards state that

When both non-qualifying and qualifying causes of delay overlap, the superintendent shall apportion the resulting delay to work under contract according to the respective causes' contribution. In assessing each extension of time the superintendent shall disregard questions of whether the contractor can accelerate, but shall have regard to what prevention and mitigation of the delay has not been effected by the contractor. The contractor shall not be entitled to an extension of time for any delay which is not on the critical path.

Apportionment of Concurrent Delays

In Australia, the courts usually rely on the factual issue of causation "by applying common sense to the facts of each particular case" (*Stapley versus gypsum Mines, Ltd.*) In considering the issue of

causation, the question that was asked is whether a particular act, omission was so connected with the delay that as a matter of ordinary common sense and experience, it should be regarded as a cause of it.

In the *Thiess Watkins White Construction Ltd versus Commonwealth*, causation was viewed as follows:

To take a simple example, if an owner-caused delay of 5 days commencing on day 15 means that a contractor which would have completed the works on day 20 still has 5 days work to do, and there is a neutral delay on day 23, I see no difficulty in concluding that the time based costs incurred on day 23 were caused by the original delay.

The decision in the aforementioned case supports the position that an extension of time claimed by the contractor should be allowed for the full period of 6 days, although for 1 day of that period, there operated a second concurrent neutral cause of delay. This case is arguably good authority to rely upon in the pursuit of certain excusable delay claim in which an initial delay caused by the principal is prolonged because of neutral event.

In *Armstrong Construction versus Council of the Shire of Cook*, the Supreme Court of Queensland came to an opposite conclusion to that of *Thiess Watkins White Construction Ltd versus Commonwealth* on the issue of causation. The contractor initially encountered a delay caused by a latent condition and thereafter further delay owing to wet weather (a neutral event). The court considered that the contractor was entitled to compensation for delay and disruption arising from the encountering of the latent condition but not for the “flow on effect” caused by the neutral event.

It has also been argued that the approach in *Thiess* may not be useful when the concurrent cause of the delay is attributable to the contractor rather than a neutral event. In this instance, it may be more appropriate to apply the “common sense” test adopted by the High Court in *March versus Stramere*, which recognized both causes as contribution to the delay.

In *Turner Corp Ltd versus Co-ordinated Industries Pty Ltd*, the judge considered that the “prevention principle” should apply only in circumstances in which the owner had caused the actual delay and there is presence of sufficient evidence. In addition, Australian courts have attempted to qualify the effects of the “prevention principle” in situations of concurrent delay attributable to both the owner and the contractor. It has been held that a contractor, who has been prevented from fulfilling its contractual obligation by the conduct of the owner, cannot rely upon the failure by the owner if the contractor itself could not have complied with its contractual obligation in any event.

Thus, the approach adopted toward concurrent delays by the Australian construction law practice seems to be proactive, but less balanced. The previously discussed cases clearly show that first the standard approach that has been tried to be adopted through the contract documents in itself (sometimes) creates an imbalance between the stakeholders from case to case. Secondly, the use of common sense toward deciding apportionment seems to be very attractive, but may result (sometimes) in a wrong decision, or to say it correctly, “less correct” decisions.

U.K. Legal Environment and Practice

This section provides a review of the U.K. general legal principles and apportionment practices to deal with concurrent delays in construction projects.

General Principles

Over the years, the U.K. courts have applied a number of different tests when determining liability for concurrent delays. These include the “But-for” test, the *Malmaison* test, the “First-in-line” approach, and the Dominant cause test, and are described as follows:

- The But-for test is used to determine whether a particular delay would have occurred even without the concurrent delay scenario. It asks, “Would the delay have occurred but for the event complained?” In case of yes, the delay is considered to have no link to the event and the other concurrent delay. However, the problem is that there could even be nonrelated delays that may affect the project individually. Therefore, courts have often avoided this test in such circumstances.
- The *Malmaison* test is based on a case of *Henry Boot versus Malmaison*. The test allows the contractor a time extension in case one of the concurrent delays was caused by the owner regardless of the other delay that was caused during the same exact period by the contractor.
- The first-in-line approach adopted in *Royal Brompton Hospital NHS Trust versus Hammond*, however, allocates the responsibility of causation to the delay that occurred first in time out of all concurrent delay events no matter who caused the delay. However, this seems to be a relatively unbalanced approach.
- The Dominant Cause test seems to resolve all the bottlenecks in the other tests by determining the dominant cause of the whole concurrent delay events. This is a more logical way to address the causation, unlike taking time of occurrence as the determining factor.

However, recently, in *City Inn versus Shepherd Construction case*, the Scottish court gave a significant judgment related to the assessment of concurrent delays for awarding time extensions. The decision is termed as a benchmark decision because it is regarded as the most detailed discussions in the U.K. courts to date as related to the concurrency issue in delay claims. In this case, *Shepherd* (the contractor) claimed for a substantial extension in time and recovery of payment losses. There were several causes of delays, many of them were the fault of the contractor itself, and the others were relevant events. In November 2001, after a long deliberation, the court gave a lengthy judgment to address the concurrency issue. The court suggested that it was the duty of the contract administrator to determine in a “fair and reasonable” manner that if there were no single “dominant event” that caused the delay. The court suggested that once the contract administrator determined this, the court could apportion the delay among the causes. The decision was challenged by the owner in the appeal court but it was upheld. The court considered earlier cases in Scotland, England, and Wales, and other common law jurisdictions but only found them to be of limited assistance. This led the court to identify and determine guidelines to approach the concurrent delays while determining the extension of time. The identified approach is summarized as follows:

1. Determining the relevancy: It must be shown, based on a common sense approach, that the event that causes the delay is a relevant event and is likely to cause the delay.
2. Factual evidence: There shall be factual evidence to decide the issue of causation.
3. Analysis method: The critical path analysis should be considered an assistance tool but not to be considered as indispensable.
4. Dominant cause: If there is a particular event that can be termed as a dominant cause of delay, effect will be given to that delay and other nonmaterial causes shall not be considered. Therefore, if that dominant cause is a relevant event

for which the employer is responsible, the contractor's claim for an extension of time will succeed.

5. Apportionment: If there exists a relevant event (employer's responsibility) and other causes (contractor's responsibility), then the claim for an extension of time may not necessarily fail but the overall financial responsibility shall be apportioned between the events.
6. Fair and reasonable assessment: The decision maker shall approach the issue in a fair and reasonable manner.

The approach, as determined through the court's decision is termed by many as the apportionment approach. However, the decision has met with a mixed reception from the U.K. commentators, and it remains to be seen whether it will be approved by the courts of England and Wales.

The professionals who oppose such an approval argue that the court tried to justify the apportionment approach by using a number of U.S. cases. However, these cases are not totally related to the issue of apportionment; rather they just have a supportive role in this regard. McAdam (2008) closely examined these American authorities and concluded that:

They are not examples of broad brush concurrent cause apportionment, but rather they support on the one hand the saving of fragments of a global claim on the basis of available evidence assessed on an orthodox basis, and on the other the adding together of a series of discrete sequential delays in order to come to an aggregate figure for overall delay in relation to one party.

Regarding the fair and reasonable assessment, McAdam stated that "fair and reasonable, seems more promising, and that extension of time clauses operate in the shadow of the prevention principle and it seems very doubtful that the words are sufficiently clear to oust that principle, even if this is possible, which is not certain." Thus, he argues that both findings under consideration for the suggested guidelines are not completely correct; and thus, they should not become a part of the English law.

Apportionment of Concurrent Delays

Bristow (1986) expresses that the courts are generally not entitled to apportion damages claimed for breach of contract on the basis of a plaintiff's contribution to their own loss. This is in contrast to the position of contributory negligence. This practice occasionally leads to unjustified resolution of the cases. For example, in *Schering Agrochemicals versus Resibel* before the court of appeal is a classic illustration of injustice resulting from the common law's inability to apportion damages in contract. In essence, although the case was not a concurrent delay case, but it relates to the principle of shared culpability, to which His Honour Nolan L. J. observed that the defendants "... were fortunate that the present state of law ruled out apportionment." Burrows (1993) believes that an apportioned result in this case would have been a more just outcome.

Many of the researchers agree that there is a need to reform the law to include guidelines to determine apportionment. Bristow (1986) argues that the current position of the law is unfair and does not provide justice to the parties on the grounds that a plaintiff, if proved factually to be partially culpable for causing or contributing to its own loss, albeit to a lesser extent than the defendant, is not held at all liable if the defendant is found to have caused the remaining, more significant portion of the loss. Burr and Palles (2005) reinforced Bristow's view, stating that the absence of an ability to apportion liability leads to an inevitable injustice to one of the parties.

The lack of any provision to apportion damages in contract has not gone unnoticed in England. In 1990, the Law Commission concluded that it is correct in principle for damages to be apportioned in claims brought in contract, when the loss suffered by a claimant was partly from their own conduct. In its Working Paper No.114, the Law Commission supported Anson's view that the rights and obligations of the parties to a contract are not exclusively defined by their agreement.

The matter of apportionment is yet not settled; the *City Inn versus Shepherd Construction case* has started the latest discussion to reform the law for apportionment of concurrent delays. Although the guidelines provided in the decision are in debate by many researchers, the historical analysis of the apportionment approach gives an image that a strong portion of the legal experts are not in favor of apportionment in general, or rather to put in better terms, are hesitant of it. Therefore, to avoid this reform, they always come up with some technical differences until the wave of reform vanishes away. First, there is a need of honestly agreeing to apportionment in principle, and then the technical aspects of the reform can be discussed among the various sectors of the society, including the construction industry itself.

Comparative Analysis of U.S. versus International Legal Practices Regarding Concurrent Delays

This section briefly compares the different legal systems approaches to that of the U.S. practice.

U.S. versus Canadian Law Practice

The Canadian practice is somewhat similar in nature to that of the United States with regard to apportionment of concurrent delays. The only difference is that the U.S. practice is more developed relatively and is relatively more based upon a mathematical approach. For instance, apportionment is only allowable where there is proof of a clear allocation of the delay and expense attributable to each party usually based on an agreed, credible, and well-devised delay analysis technique capable of dealing with concurrent delays. In contrast, there are examples in the Canadian case law history that contribute an element of flexibility into the analysis of shared responsibility for damages in contract delay, particularly in circumstances in which the claimant has contributed to the delay. Overall, the Canadian approach can be accepted as being on the right path. More research effort is needed to devise some delay analysis methods, which make the apportionment of the concurrent delay responsibility more standardized.

U.S. versus Australian Law Practice

It can be concluded from the previous discussion that the practice of dealing with concurrent delays in U.S. construction law is mostly based on case law rather than standards. The courts have adopted a relatively balanced approach in deciding different contradictory situations. On the other hand, Australian construction law practitioners have tried to standardize the approach toward concurrent delays; but most of the time, courts have relied on common sense and have made decisions on a case-to-case basis. This means that both the construction industries have a slightly varied approach toward concurrent delays. Both can benefit from each other's practice to further improve the issue of dealing with concurrent delays. A pilot research was conducted in this regard by Ward (2008), which was supported by the Chartered Institute of Building Australasia, whose purpose was to carry out semistructured qualitative interviews with those involved in the production of the

United State's recommended practice to obtain their opinions on the adequacy of the clauses of the standard forms of contract for dealing with concurrency, and the suitability of the protocol's proposed method for dealing with concurrency for adoption and use on Australian construction projects. Results indicated that the overall approach of the protocol by the Australian construction law practice was considered to be correct, but its content needed to be expanded to address some of the issues in more detail, suggesting that an agreed overall standard approach would be beneficial for the industry.

U.S. versus U.K. Law Practice

The U.S. legal systems have more arguments and issues in the developed form than U.K. law. The reason is that the practice of appealing to U.S. authority is relatively common. Also, since the critical path method was pioneered in the United States, the legal system is ready to accept its credibility. Another reason is that much research is being done in the United States, both by construction industry practitioners and construction law experts, to modify the existing theories and methods. This trend is in particular common with the techniques that found their basis on the critical path analysis method.

One of the most important reasons to the fact that the United States is way ahead of the United Kingdom practice or any other legal system with respect to dealing with the issue of concurrent delays is that the most often cited cases are decisions of federal courts or administrative contract boards on claims against the U.S. Government. Therefore, the U.S. administrative systems itself cannot bear vague approach to deal with concurrent delays in construction. Also in the United States, multiple causes of delay pose particular problems for contractors seeking to avoid exposure to liquidated damages and/or to obtain compensation for delay and disruption.

American law treats these two circumstances differently. In the case of concurrent delay, a contractor will generally receive what in the United Kingdom would be summarized as "time, but no money." The more complex issue arose in relationship to sequential delays (i.e., "where one party and then the other cause different delays seriatim or intermittently"). The contractor had tried to rely on the "rule against apportionment," which is derived from *United States versus United Engineering and Constructing Co.* and is to the effect that "where delays are caused by both parties to the contract the court will not attempt to apportion them, but will simply hold that the provisions of the contract with reference to liquidated damages will be annulled." However, a careful consideration of the cases establishes that despite these scenarios, apportionment of liquidated damages in a sequential delays situation (where there is concurrency) is usually allowed.

Conclusions

As far as the general principles to deal with concurrent delays are concerned, it can be concluded that the U.S. legal environment has entered into the era in which more emphasis is put on adopting the Fair Rule. The contemporary U.S. case law history shows that delay analysis based on the critical path method has been emphasized more often. There is a proportionately larger U.S. experience in these types of cases and a review of such experience is instructive. Therefore, various researchers have tried to summarize guidelines through U.S. case law practice, which can be regarded as general principles for dealing with concurrent delays. The Canadian system also seems to be willing to adopt the same path to that of the United States, but there are no clear guidelines to deal with such delays.

The Australian approach still relies on the application of common law remedies. English law, over the years, has developed various tests but the breakthrough is the recent judgment of *City Inn versus Shepherd Construction* case, which is regarded as the start of a new perspective and benchmark although still under criticism by certain experts.

Regarding apportionment, it can be concluded that the U.S. legal system has evolved more than any other country as far as apportionment is concerned. The U.S. legal system accepts, in principle, the apportionment rule. In contrast, English professionals are yet to agree over whether to adopt the apportionment rule or not. However, many researchers are in support of the implementation and are working to persuade the lawmakers through their publications to reform the current approach. Australian construction law practice seems to be proactive, but less balanced. The Canadian case law approach is somewhat near to the U.S. approach in the sense that the legal system believes in the clear apportionment of responsibility, as evident by the case examples discussed previously.

This study is an effort to review the different legal systems' approach in dealing with the concurrent delays. Overall, it can be concluded that the U.S. approach is far more credible, reliable, and relatively standardized. This is primarily because of the experience of the legal system with concurrent delay claims. Also, the amount of research effort that derives its motivation from the principle agreement of the construction industry in particular and construction law practitioners in general, is commendable.

The outcomes of the study can help as an input to benchmark the concurrent delay evaluation practices for different legal environments. However, the scope of this study covered legal systems which have been generally following the English common law approach. As a part of future work, it will be beneficial to review other legal systems' approaches and perform comparative analysis of concurrent delay evaluation practices for other regions, e.g., China, southeast Asia, Latin America, and Africa.

List of Cases

- Acme Process Equipment Co. versus United States, 347 F. 2d 509, 171 Ct. Cl. 324 (1965) LEXIS 126
- Armstrong Construction versus Council of the Shire of Cook (unreported, White J, QLD SC 25 February 1994)
- Continental Breweries, Inc., versus 707517 Ontario Ltd. (C.O.B. Northern Algonquin Brewing Co.), [1993] O.J. No. 2395 (Ont. Ct. (Gen. Div))
- Champlain Construction Co. versus O'Brien, 117 Fed. 271 (Vt.)
- City Inn Limited versus Shepherd Construction Ltd [2002] SLT 781
- City Inn Limited versus Shepherd Construction Ltd [2003] SLT 885
- City Inn Limited versus Shepherd Construction Ltd [2008] BLR 269
- Foundation Co. of Canada versus United Grain Growers Ltd. (1996), 25 C.L.R. (2d) 1 (B.C.S.C.), var'd (1997), 33 C.L.R. (2d) 159 (C.A.)
- Gogo versus Los Angeles Flood Control District (45 Cal. App. 2d 334) [Civ. No. 12805. Second Dist., Div. Two. June 13, 1941.] <<http://law.justia.com/cases/california/calapp2d/45/334.html>>
- Henry Boot Construction (UK) Ltd versus Malmaison Hotel (Manchester) Ltd (1999) 70 Con LR 32
- Jefferson Hotel Co. v. Brumbaugh, 168 Fed. 867 (4th Cir. 1909)
- Kor-Ban Inc. v. Pigott Construction Ltd., [1993] O.J. No. 1414, 11 C.L.R. (2d) 160 (O.C.J. - General Division)

March versus Stramere (1991) 171 CLR 506
 Newport News Shipbuilding and Dry Dock Co. versus U.S., 79 Ct. Cl. 25
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 Raymond Constructors of Africa Ltd. versus United States 188 Ct. Cl. 147, 411 F.2d 1227 (U.S. Cl. Ct., 1969)
 Rolfe J in Turner Corp. Ltd. (in provisional liquidation) versus Co-ordinated Industries Pty Ltd (1995)
 11 BCL 202 and on appeal (1996) 12 BCL 33; followed in Australian Development Corp v White Construction (1996) 12 BCL 317
 Royal Brompton Hospital NHS Trust versus Hammond (No. 7) [2001] EWHC Technology 39, 76 Con LR 148
 Schering Agrochemicals Ltd. versus Resibel NV SA [1992] (unreported)
 Stapley versus Gypsum Mines Ltd. (1953) AC 663, per Lord Reid at Page 681, which was cited with the approval of the Australian High court in March versus Stramere [1971] 171 CLR 506
 Thiess Watkins White Construction Ltd versus Commonwealth (unreported, Giles J, NSW Supreme Court, 23 April 1992)
 Turner Corp Ltd (in provisional liquidation) versus Co-ordinated Industries Pty Ltd 11 BCL 202.
 Cofner the opposite proposition adopted in Perini v Greater Vancouver (1966) 57 DLR (2d) 307
 United States versus United Engineering and Constructing Co 234 U.S. 236, 242, 49 Ct.Cl. 689, 34 S.Ct. 843, 58 L.Ed. 1294 (1914)
 United States versus William F. Klingensmith, Inc. (670F 2d. 1227, 1982)

Endnotes

¹For example; Keane and Caletka (2008) and Trauner et al. (2009) provide a discussion on lack of universally accepted definition of concurrent delay. Trauner also highlights some causes of nonagreement as (1) absence of concurrent delay definition in the contract specifications; and (2) lack of understanding in the industry concerning the concept of concurrent delay. For further reading see Keane P.J. and Caletka A.F. "Delay Analysis in Construction Contracts" 2008 Blackwell Publishing Ltd., ISBN: 978-1-405-15654-7, and Trauner T. J., Manginelli, W.A. Lowe S. J., Nagata M.F. and Furniss B.J.

²Principle of Several Liability has been stated as an example of one of the hindrances to compensation assignment from the construction industry perspective. However, the researchers have argued that both advantages as well as disadvantages exist of this principle in general. An interesting reading that discusses such advantages and disadvantages can be found at <http://www.lco-cdo.org/en/joint-several-liability-final-report-sectionVI>.

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