



### DR06: Analysis of project delay – theoretical or interrogation of the facts?

Over the past decade the review of project delay has become more analytical and a more challenging feature of construction law. Is this overshadowing the factual evidence? This article reviews theoretical calculation of delay and the often lack of, or reliance on, factual records. Are we closer to fiction than fact?

As Mr Justice Dyson noted in the Henry Boot Construction –v- Malmaison Hotel (Manchester) case, “It seems to me that it is a question of fact in any case, as to whether a relevant event has caused, or is likely to cause, delay to the works beyond the completion date.”

In the late 1980's I became involved in the investigation and review of delays to construction projects. At that time this task was the domain of quantity surveyors. However, with the development of user-friendly project planning software, 'delay analysis' became the province of those who, like myself, came from a planning and site-based background.

#### What is a 'delay analysis'?

Delay analysis is a forensic investigation into the events or issues that caused a project to run late. Delay analysts refer to 'critical' and 'non-critical' delays; the first are events causing delay to the project's completion date and the second type affect progress on the project but do not directly impact the project completion date.

The developments in computer technology and the availability of more advanced planning software packages has, in my view, changed the way in which delay claims and the results of a delay analysis are presented.

#### Delay Analysis Methodology

In this article I do not want to dwell on the types of delay analysis (e.g. 'as-planned impacted', 'as-built but for', 'time-impact', etc), but to look briefly at the two types of delay analysis methodology.

The first type of delay analysis methodology is prospective; which demonstrates the theoretical or likely impact of the consequences of delaying events – rather than showing what in fact occurred. The basis of this methodology is to establish a programming model of the project, usually the contractor's as planned programme, then impact the model by the application of delaying events. This type of methodology is commonly used to demonstrate what extension of time a contractor is due, as a result of the application of employer responsible delaying events. This is said to be the contractor's entitlement. Entitlement in this context is derived from the results of a delay analysis and is not to be confused with contractual entitlement. In summary the prospective type of methodology is a theoretical calculation of the likely delay a delaying event(s) would cause to project completion. In other words, it focuses firstly on the delaying event and then demonstrates the likely delay to progress and ultimately project completion that is likely to flow from the event.

The second type of delay analysis methodology is retrospective. The retrospective analysis tries to show what actually occurred on a project; where the delays were; and what caused the delay to project completion. The analysis shows how actual progress differed from what was planned. By focusing on how the works actually progressed, the analysis will show when work activities were delayed, and from the results of the analysis, investigation of what caused the actual delays can be carried out. In summation, this type of methodology looks at what actually happened, what activities were actually delayed and only thereafter what caused the delay.

Both types of delay analysis methodology are to some degree subjective. The prospective analysis relies heavily on a programming model of the project and the delay analyst's opinion on how the delay event was likely to influence the model. The retrospective analysis is, in my opinion, less subjective as it relies on actual progress. However, interpretation of the results as to what caused delay is subjective. This is because the delay analyst will usually have to consider a number of related issues as to what caused delay and apply his own experience and judgment.



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#### The Facts

“Now, what I want is, Facts”. You may recognise this quotation from Charles Dickens' novel 'Hard Times'. The nub of any investigation and report on project delays are, or should be, the facts. By this I'm talking about the project's factual records, i.e. variations (and their like); correspondence, minutes of meetings, diaries, progress reports, etc. These are the 'facts'. However, too often do we see extension of time and delay claim submissions containing several lever-arch file of these 'facts', with no specific linkage to the alleged events that caused delay. There may also be a bundle of computer print-outs indicating the claimed effect – but the causal link is not clearly defined. The referee (judge, arbitrator, adjudicator, or contract administrator) is expected to find it; and often it's like looking for a needle in a haystack! The primary purpose of the delay claim submission is to assist the referee to weigh up the provisions of the contract, relevant case law, witness evidence, contemporary factual records, as well as considering the results of a delay analysis to form his own view.

#### Cause and effect

As I said earlier – the presentation of a delay analysis is not sufficient in itself to justify compensation. It is necessary to establish,

- (i) The event: the event to be identified as a fact, e.g. late supply of information, to a contractor.
- (ii) Liability: determined by interpretation of the contract.
- (iii) Effect: the change to the planned progress of the works as a result of the event. This may be demonstrated by a 'prospective' delay analysis (for entitlement to an extension of time), and/or a 'retrospective' delay analysis to assist in compensation. Sometimes the contract provisions may determine the methodology of delay analysis that is required, i.e. estimated future delay and/or the probable future delay (prospective analysis), or the actual delay (retrospective analysis).
- (iv) Causation: The causal connection between the event, effect and compensation. In some instances the identified causative event may have been caused by a previous causative event. For example, delay caused by winter working may have been caused by the project being delayed into winter due to an earlier causative event. Therefore the chain of causation and the incidence of any secondary causative events will need to be investigated and established.

#### 'A picture is worth a thousand words'

If this old adage is true (and it is), then graphics are excellent demonstrative evidence. Contemporaneous progress photographs can show the status of the project at regular intervals and are more forceful than written progress reports or coloured barcharts.

To crystallize the results of the delay analysis and 'cause and effect' review; charts combining these two aspects and containing historical factual information have a great deal of credibility and impact. However, with graphics, the key is the selection of the information and simplicity of presentation. An important point is that graphics should be easily understood and not too complicated, otherwise the referee may either call "time out" or the result is 'death by PowerPoint'.



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#### Conclusion

This brings us back to the question posed at the start of this article; is a theoretical calculation of delay overshadowing reliance of factual records?

In my opinion, yes. From my experience as an Expert on time-related matters and my Adjudication experience, I have come across many instances where a party, and or its Expert, has put forward a brief report supported by a mass of computer generated barcharts and very little linkage to contemporaneous factual information. The concept being that “well that’s what the computer says – so it must be right!” Well, we have all heard of the saying “garbage in, garbage out”, haven’t we. Delay claims and results of investigations into project delays are being presented on a what would have occurred basis, using theoretical models, rather than on a what did occur basis, and interrogation of the facts. Facts are the best means of persuasion.

Don’t get me wrong, I consider that a delay analysis is important as part of an investigation into project delay – but it does not provide the complete answer. A credible delay analysis should (a) sit comfortably with the party’s presentations (submissions, etc), witness evidence, and contemporaneous information, and (b) provide results to be incorporated into a ‘cause and effect’ matrix.

The delay analysis should be a supporting document as part an interrogation of the facts.