DEVELOPING A FORENSIC DELAY CLAIM

2nd Edition

By

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Introduction

A sound baseline programme and a complete supporting network are essential to accurately monitor and assess progress for any form of forensic critical path delay analysis. When not available, our experience and capability of interrogating contemporaneous records allows us to understand the delay issues and their potential impact.
There are two major forms of analysis; which are known as: -

a) Retrospective and b) Prospective
Retrospective:
• Dispute and litigation programme analysis including expert witness work using established and industry recognised retrospective delay analysis methods.
• Post contract claims preparation and defence utilising forensic planning analysis.

Prospective:
• Independent programme review at the commencement of a project or during the life-cycle of the project where the baseline no longer represents the planned intent.
• Advice on the requirements and merits of prospective claims.
• Project audits for projects under construction in order to determine likely completion dates and assess extension of time entitlements.

BHPL apply experience and intelligence to computer generated analysis to demonstrate 'the cause and effect' of the issues. Our team of forensic planners are skilled and experienced in analysing available information to assist in their understanding of the issues on often very complex projects.

The availability, quality of contemporaneous records and the scale of any dispute will dictate the retrospective delay analysis method adopted.

These include: time impact, as-planned v as-built, impacted as-planned and collapsed as-built. BHPL has been a provider of forensic analysis expertise to the AACEi who published the first compilation and practice guide to the various methods used in forensic schedule analysis.

Called the **Recommended Practice for Forensic Delay Analysis** (RP 29R-03), it was originally published in 2007 and has undergone several subsequent revisions which reflect the complex and still changing character of this recent analytical specialty. (Available at http://www. aacei.org/resources/rp/).

BHPL are competent practitioners with each of these techniques and can advise on their respective strengths and weaknesses in specific project circumstances.

In addition, BHPL is a member of the Society of Construction Law Australia and uses the society's DELAY AND DISRUPTION PROTOCOL which was published as a guide and protocol for executing Forensic Delay Analysis in 2002. There are several Core Principles within the Protocol one of the more important ones is about Programme and Records,

Fundamental Principle: The Project Programme and Records

To reduce the number of disputes relating to delay, the Contractor should prepare and the Contract Administrator should accept a properly prepared programme showing the manner and sequence in which the Contractor plans to carry out the works. The programme should be updated to record actual progress and any extensions of time (EOTs) granted. If this is done, then the programme can be used as a tool for managing change, determining EOTs and periods of time for which compensation may be due. Contracting parties should also reach clear agreements on the type of records that should be kept, e.g. Site Diaries, Delivery Dockets, time sheets, sub-contractor work front etc.

THE BASELINE PROGRAMME REVIEW

The baseline programme review provides an early appreciation of the acceptability and robustness of the contract programme. The baseline programme review is a process to review the proposed programme, focusing on whether it complies with the contractual requirements. It will determine if the programme represents the 'Works' realistically and whether the planning and programming is deemed practical and complete.

We provide planning and programming specialists to review the merits of the baseline programme as a 'statement of intent' and to assess any risk associated with the baseline programme not being compliant. The baseline programme review process includes various tasks to ensure the programme complies with the contract requirements. These tasks involve a review of the proposed contract programme, a review of project documentation and follow-up actions, as necessary, to satisfy the project parties that the baseline programme is valid. The baseline programme review will use network-based techniques to identify the critical path(s) and assess whether the programme meets recognised good practice; e.g. identifying missing logic and highlighting the potential over-use of date constraints and excessive or forced float. It can also be used to review the proposed methodology used to measure contract performance and progress and to determine if processes and systems are structured to enable the accurate recording of progress and change.

PROJECT AUDIT

A project audit is an interim assessment of project progress in relation to an agreed baseline programme. An audit is an essential first task in Delay Analysis and enables the early identification of programme delays and highlights the potential risks in respect of time to the successful delivery of the project. The audit will assess the criticality of delays and provide the opportunity to avoid formal disputes.

The Project Audit process relies on the availability, quality of contemporaneous records, care must be taken to provide only those critical records as perusing factual data through a vast number of documents may increase the time and cost of preparing a proper review.

The expected records are at a minimum, the

- Contract
- Site Diaries
- Delivery records
- Photographic Records – Time Lapsed
- Relevant Drawings and Issue schedule
- Critical Path – computer processed – in soft form as well as pdf format

Unfortunately, in our experience many Project Managers in major projects do not keep relevant records. This lack of record keeping is seen as a form of defensive behaviour in case the project does not perform as expected, which of course means a valid extension time claim cannot be made and will fail

15 STEPS DEVELOPING A FORENSIC DELAY CLAIM

1)Read the Contract

Read the contract and reread it to ensure that the scope of the project and its costings are fully understood. One of the most common faults in project delivery is the lack of detailed knowledge of the contract and so failing to mitigate any “Gotcha’s”

2)Work Breakdown Structure (WBS)

Project planning and scheduling is one of the most important tools in a project manager's tool kit and it must be in place to ensure the effective control of time, resources and cost control and allow for management of budget over time within the project environment. To develop a detailed work plan of the total project scope, a Work Breakdown Structure (WBS) and activities associated with each element of the work must be identified. **Uncertainty** and **risk** are introduced into a project when the WBS is not fully defined and understood. A WBS at too high a level can leave scope ill-defined not allowing for proper estimates or definition of work to be performed.

3) Critical Path Method (CPM) Baseline Schedule

Once the WBS is established and agreed upon, the detailed plan becomes what is known as the Critical Path Method (CPM) Baseline schedule. The basic principles of CPM Scheduling include constructing a list of all required activities to complete the project, the duration they will take, and the sequence in which interdependent tasks have to be performed. The CPM method then calculates what activities are critical to the completion of the project (the critical path) and what activities have some spare or float time, which in turn are less critical. This allows management to prioritize critical activities. This plan is what the project will be measured against throughout its lifespan. As the project progresses, the plan should be statused with the actual progress achieved as well, monitoring the progress being made, ensuring activities are taking place when they should be, and that resources and costs are in line with expectations.

Id Primavera P6 is being used to carry out the computations, it is recommended that a “reflection” should be taken from time to time

4) Critical Path

The critical path is the sequence of activities with the longest overall duration, determining the shortest time to complete the project. Any delay of an activity on the critical path directly impacts the planned project completion date (i.e. there is no float on the critical path).

5) Total Float

Float is the amount of time that an activity in a project network can be delayed, without causing a delay to subsequent activities (free float) or project completion date (total float).

6) CPM Scheduling Development & Analysis

Balmoral Hill Pty Ltd (BHPL) provides contractors with expert support services to reserve your rights and eliminate the potential for Disputes. Our practice is dedicated exclusively to the planning and scheduling with Forensic Delay Analysis expertise for the construction industry and our support services start from day one and continue throughout the successful completion of your project.

To effectively support requests for equitable adjustments, we rely on the documentation we develop throughout the project. We work closely with project teams to develop detailed CPM baseline schedules incorporating the requirements of your contract.

BHPL can provide an update service to the schedule on a weekly or monthly basis to reflect actual physical progress. We incorporate changes and "Out of Scope" works into the progress updates. We analyse the impact of Changes on project milestones and develop Sub projects to support delay & disruption claims, requests for time extensions and/or equitable adjustments. We also develop recovery plans. We support you with change order management to resolve disputes at the project level.

7) Cost Reporting

Key cost reports can be prepared utilizing the data from the CPM schedule. For work items that have been completed, actual cost to date data can be computed. CPM gives us, at any time during the progress of the work, an estimate of the cost for the work reported as complete, so that effective comparisons can be made. With this report, contractors do not have to wait until the end of the project to discover the "status" of their cost.

This work is performed using Earned Value Performance measurement techniques as per the Australian Standard 4817:2006 and for very large projects, especially in the government arena, then ANSI748-C will be used

8) Delay & Disruption Claims

We utilize the CPM Schedules generated throughout the project to analyse and support entitlement, calculate damages and identify the causes leading to delay and disruption. We are experts in the analysis of delay and disruption claims. We develop accurate and effective project documentation to demonstrate and support entitlement. We negotiate on your behalf to settle dispute. We act as project neutrals in Mediation and Arbitration.

9) CPM Scheduling Development & Analysis

Develop CPM Baseline Schedules utilizing Primavera (P3, P5 and/or P6), Microsoft Project, Micro Planner X-Pert
Identify Critical Paths
Identify long lead procurement materials and equipment
Identify Resource Requirements and Allocations
Utilize Total Float effectively
Load schedules with cost and resources
Perform Earned Value Performance Management
Monitor and update actual physical progress bi-weekly (As-Built Schedules)
Develop short term schedules (3 Week Look Ahead) - for planning & coordination by Field Personnel
Develop Recovery Plans to meet contract milestone dates
Perform delay analysis - Time Impact Analysis (TIA) - Window Analysis
Analyse Schedule Compression and/or Constructive Acceleration
Develop sub projects and supporting documentation to support requests for Time Extensions

10) Schedule Analysis Methodologies

As outlined above there are several methods in performing Schedule Delay Analysis and the choice of delay/impact analysis methodology is dependent on very many factors and BHPL provides advice and guidance to our clients to make an appropriate choice The employment of an appropriate technique will be dependent on the circumstances.
The following reviews each of the major recognised delay/impact analysis methodologies, provides details of their implementation, potential operational problems and their various strengths and weaknesses.

The Association for the Advancement of Cost Engineering (AACE) International Recommended Practice No. 29R-03, “Forensic Schedule Analysis” (FSA RP) provides a taxonomy of forensic analysis methodologies in an effort to identify and describe unique methods that often are called by different names. This taxonomy identifies a first broad division in forensic methods between “observational” and “modelled”, which provides some clarity. The methods are identified by what the FSA RP calls the Method Implementation Protocols (MIP) necessary for a reasonable analysis process. It is probably fair to say that this RP 29 is probably the best recommended practice to follow in most cases.

The observational methods in the Forensic Schedule Analysis Recommended Practice include one typically known as the As-Planned vs. As-Built (APAB- probably the method most used) and several versions of another

group of analyses called Contemporary Period Analysis (CPA), based on whether the CPA is bifurcated (split) to isolate the effects of status only, and whether the analysis schedules are used substantially as they exist or recreated.
The modelled methods include two general types based on modelling fragnets to represent delays, and those are called “additive” and “subtractive”.

With the additive methods, these represent methods that add fragnets to the network and use those to depict delay; these are typically known as the Impacted As-Planned (IAP) and the Time Impact Analysis (TIA). The TIA is not to be confused with the prospective method of modelling delays before the impacts from the delays have been absorbed into the schedule. This method of analysis is described in the Planning & Scheduling Standard of Practice as it is a contemporaneous method

11) Claims Preparation & Analysis - Damage Calculation

- Prepare claims
- Calculate damages
- Analyse delay - Window Analysis
- Develop Sub Projects
- Support requests for time extensions
- Prepare constructive acceleration claims
- Assess damage due to wrongful termination

12) Change Order Evaluation

- Develop methodologies and tactics to expedite issuance of "Formal" change orders to ensure timely payments
- Identify "Constructive Changes". Analyse cost and schedule impacts.
    - A constructive change is sometimes called a "change by implication" and occurs when the Government, by its actions, changes the contract without specifically adhering to the requirements of the "Changes" clause. A constructive change order has been defined as an oral or written act or omission by the Contracting Officer or other authorized Government official which is of such a nature that it has the same effect as a formal written change order under the Changes clause.

- Identify and analyse "Cardinal Changes"
    - A cardinal change has been defined as one which cannot be redressed within the contract by an equitable adjustment to the contract price. *Allied Materials & EquiDment Co. Inc. v. United States, 569 F.2d 562, 215 Ct. Cl. 406 (1978)*. The purpose of the "cardinal change" doctrine is to provide a remedy for contractors who are directed by the government to perform work which is not within the general scope of the contract. *Edward R. Marden Corp. v. United States, 194*
- Develop requests for Equitable Adjustments
    - An equitable adjustment, in government contracting, is a contract adjustment pursuant to a changes clause, to compensate the contractor expense incurred due to actions of the Government or to compensate the Government for contract reductions. An equitable adjustment includes an allowance for profit; clauses that provide for adjustments, excluding profit, are not considered "equitable adjustment
- Develop sub projects to support Requests for Time Extensions due to changes
- Negotiate change orders
- Resolve disputes at the project level

13) Claims Prevention & Avoidance

BHPL has a track record of bridging the gap between contractors and clients, relative to their disputes. We conduct site visits to gather data and meet with project teams. We analyse projects' history, which could span a year or two or more, in a relatively short period of time.

BHPL provides the analysis, in the form of a detailed *"Status Report",* highlighting critical issues and developing clear and precise *"Next Steps"* to help resolve disputes at the project level. As well as appropriate Dashboards to provide clarity of the solution

14) Earned Value Performance Management (as per AS 4817:2006)

- Measure project performance in terms of budget and schedule
- Develop work breakdown structure (WBS)
- Develop budgeted cost of work scheduled (BCWS), or planned value (PV)
- Monitor budgeted cost of work performed (BCWP), or earned value (EV)
- Monitor cost variances (CV)
- Monitor schedule variances (SV)
- Monitor cost performance index (CPI)
- Project Estimate at completion (EAC)

15) On-Site Observation & Documentation

BHPL supports contractors every step of the way. We work closely with the project team to develop and supplement your project documentation.

On site camera's provide photographic evidence which prevents misunderstanding as and when specific tasks which may be in contention were actually completed

We believe that most disputes may not materialize into either claims or trials if supporting documentation provides sufficient grounds for entitlement. Project documentation is often in the form of effective project correspondence, timely notices, issuance of schedule progress updates and recovery plans. All documents are generated in accordance with the contract requirements and shall reserve your rights and clearly illustrate damages suffered and support entitlement to your claim(s).