

Technical

Back to Basics – How to Measure Progress

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Introduction

This Article is intended to be read as a direct follow-on to RM's Back to Basics Article – “*How to Plan your Works*”. An essential part of the planning function is to be able to facilitate robust progress monitoring.

The purpose of progress monitoring is to measure the current status in terms of time and commercial position, as well as to react to any deficiencies in current performance to improve and optimise future performance. The progress monitoring process also provides the raw data to be able to demonstrate the impact of change and/or delays on the Works.

A common finding amongst those who assess claims for delay and/or disruption is that, where there is a lack of/limited contemporaneous records, a claim is generally shrouded with uncertainty in relation to the work which has been delayed and/or disrupted.

If a robust regime of good record keeping and use of programmes is adhered to, then this uncertainty is significantly reduced and the Programme can be used as an effective tool for managing change and determining any Extensions of Time (“*EoT's*”) together with the periods of time for which financial compensation is due.

Tools Available

The Project Programme should be the means by which “*actual*” against “*planned*” progress is monitored, reported and used as a tool for determining *EoT's*.

Without a Baseline Plan or Programme in place, it is difficult to assess or measure the progress of the Project with any real accuracy as the Programme is a benchmark to compare actual progress and a tool for forecasting planned completion. In today's environment, it is essential to get this correct due to the potential Liquidated Damages and Disruption Costs associated with Project delay.

There is an increase in the use of automated systems which can efficiently collect site progress information. However, the data created by these systems can be vast and it requires the skills of an experienced Planner to process the data before presenting the output to the Project Team, the Business and Clients.

So, the most important factor in managing the progressing process is not necessarily the tools that are used, but the skills and experience of the Planner.

Contract Compliance

To implement an effective programme monitoring procedure, both parties to a Contract should reach an agreement prior to the Works commencing on a project, of the types of records to be maintained and how the Project Plan/Programmes will be used.

The current suite of JCT Contracts focus on the submission of a Master Programme (for example under Clause 2.9), but the Contract specifies very little relating to updating or progressing the Programme other than updating it for a Relevant Event.

The NEC places a greater obligation on the Contractor (or Sub-Contractor) to regularly update the Programme and a procedure for the Project Manager (or Contractor) to review and accept it so it can be used to assess the effect of change. If a Compensation Event occurs, then the Programme should be updated and the effect of the change calculated. The updated Programme then becomes the Baseline for future changes progress monitoring.

Principles

The specific methods of measuring progress vary from project to project and there is no “*one size fits all*” approach that can be used with every Construction or Engineering Project. There are, however, general principles that should be followed and tools (for example Project Monitoring Dashboards) that can be adapted.

RM recommends that as a minimum each project should have a Weekly Progress Review, undertaken by either the Project Manager or allocated Planner. The Planner should remain independent to ensure the Programme is realistic and should undertake a review, at least monthly, that will inform senior management of identifiable risks and opportunities as they are occurring.

An “*independent*” viewpoint will ensure that the reporting process is objective and not influenced by external subjective factors and pressures. Inaccurate reporting, or looking through “*rose-tinted glasses*” when assessing progress, is not beneficial to any party and can undermine a claim for entitlement as it may make it look like the delays occurred at the end of the Project.

The purpose of Progress Reports is to identify activities that are falling behind so the Project can be proactively managed, and action taken to rectify any problems or manage the risks. If those issues are not highlighted promptly, delays can become worse and if delays are not disclosed/communicated to Employers, then problems could arise when trying to claim for time and/or costs. On some projects there is a risk that entitlement to additional time and money is lost.

An open and honest culture in relation to planning and progress monitoring is encouraged for successful project delivery.

Progressing Process

In its most basic form, progress is presented by a simple dropline (“*jagged line*”) on the Gantt Chart indicating how much of each activity has been completed. This approach is of limited use and is not particularly helpful for assessing the effect of progress or proactively managing a project. It is far better to reschedule (“*straight line*”) the Programme.

Rescheduling is where completed activities and parts of activities are moved to the left of the Progress Report date shown on the Gantt Chart, and incomplete activities and parts of activities are moved to the right. When properly performed, the plan for the remaining work and the critical path for the Project are calculated by the programming software. The success of the rescheduling depends on the quality of the Baseline Programme. The Programme Activities need to be sensibly logic-linked to enable the software to carry out the calculations that give a sensible result. The duration of activities should be sensible and the Programme broken down to a sufficient level of detail to show what is planned.

The Programme logic should be reviewed after each reschedule to ensure that it is still correct. Any changes to the logic should only be made where the original logic is incorrect. Where it is necessary to make amendments to the Programme logic, the alterations should be recorded and agreed with the Project Manager and, where significant, it is recommended to obtain approval of the Business prior to submission to the Client.

It is useful to overlay the Baseline Programme onto the Rescheduled Programme to be able to graphically see the change in the timing of the Works.

Progress should be reviewed against each activity on % complete basis with actual start and finish dates recorded.

When a Programme has been updated, RM would recommend that progress is reported against both the current Programme and the original (Baseline) Programme.

Any measures to mitigate delays, and how to take advantage of any gains against the Programme using short-term programming, should be reviewed and agreed. The Contract Programme should not be amended (unless the form of Contract requires it (i.e., NEC)) or to include Variation Works instructed as part of the Contract.

All progress updates should be archived as electronic files for each project with separate files saved for each update.

Wherever possible, the as built record should be compiled progressively through the life of a project with the as-built dates provided by the Management Teams where there is no full-time Planner allocated to the Project.

It is recommended to maintain a "*Programme Change Register*" to record all and any amendments to the Programme which are made. A "*Delay Register*" should also be maintained to record any delay events that have occurred during the report period that have impacted normal progress.

Progress Report Format

Contractors throughout the industry will have their own templates and standard forms, which present the overall project position, and a written description of the current key issues/activities at hand.

The format and content of the report will depend on the intended recipient. Whoever the intended recipient of the Progress Report is, it should be clear and concise. Sometimes there can be too much information resulting in the report being overlooked, equally not enough information could lead to a lack of understanding.

Every project is different, so the report needs to be flexible and balance the quantity and quality of the information presented. For further information, refer to RM's "*Dynamic Progress Dashboard*" Article.

Record Keeping

A robust regime of good record keeping is essential, particularly in the event of disputes. Contemporaneously produced records provide an objective view of actual events.

Records that must be accurately kept, either by the Planner or others, include (this list is not exhaustive):

- Programmes – Tender, Accepted, Updated, Short-Term and Look Ahead.
- Progress Reports and Progressed Programmes.
- Method Statements and Risk Assessments.
- Daily Diaries, Photographs, Health & Safety Reports and Weather Reports.
- Inspection and Testing Sign-Offs.
- Site Resource and Equipment Allocations.
- Delivery Records and Material Allocations.
- Contract – Contracts, Tender Docs, Instructions, Variations, Estimates and Notices.
- Cost Records – Cost Reports, Valuations and Forecasts.
- Correspondence – Letters, Emails and Meeting Minutes.
- Design Drawings, IRS's, RFI's and Approvals.

Records should ideally be stored or compiled in a spreadsheet or database to ensure retrieval and analysis is easily achievable.

Conclusion

To manage any Construction or Engineering Project successfully, it is necessary for all parties involved with the Project to firstly agree robust Progress Reporting and record keeping procedures from the outset, coupled with an agreement on the form and content of the Project Programme.

If the agreed Progress Reporting and Programme tasks are in place, then effectual management of change can be achieved on a day-to-day basis by the Project Team, avoiding potential disagreements.