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1. Compensability
2. Excusability of a Delay
3. How is Compensable Delay Priced?
4. Costs and Rates
5. What Should a Schedule Expert Provide to the Damages Expert?

Types of Delay

Contractor	Non Excusable	Excusable Not Compensable	Compensable
Relief from Liquidated Damages	No	Yes	Yes
Additional Time	No	Yes	Yes
Additional Cost	No	No	Yes
Owner			
Liquidated Damages	Yes	No	No
Extend Project Duration	No	Yes	Yes

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Compensable Delay

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"Compensability or compensable delay exists where the claimant is entitled to recover not only a time extension but compensation for expenses associated with the extension of completion date or the prolongation of the duration of work. Excusability is a prerequisite to compensability. Therefore, where compensability can be established, excusability is assumed."

Source: AACE® International Recommended Practice No. 29R-03, page 98

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Excusable vs. Non Excusable Delay

"Excusability exists where there is contractual or equitable justification in a claimants request for a contract time extension for relief from potential claims for liquidated/stipulated or actual delay damages. The showing of excusability does not necessarily mean that the claimant is also entitled to compensation for the delay. Conversely, delay is non-excusable when such justification does not exist."

Source: AACE® International Recommended Practice No. 29R-03, page 98

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Excusable and Compensable Delay (ECD)

"Each incremental delay along the as-built critical path should be independently quantified and the cause of the delay identified. The net Excusable & Compensable Delay (ECD) is the sum of the individual delays that: 1) were the responsibility of the owner, and 2) delayed the completion date of the project, and 3) were not concurrent with delays which were the responsibility of the contractor or *force majeure* events."

Source: AACE® International Recommended Practice No. 29R-03, page 43

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Excusable and Non Compensable Delay (END)

- *"Each incremental delay along the as-built critical path should be independently quantified and the cause of the delay identified. The net Excusable & Non-compensable Delay (END) is the sum of the individual owner-caused or relevant third-party caused delays that: 1) were force majeure events or were concurrent with contractor-responsible delays or force majeure events, and 2) delayed the completion date of the project, and 3) were not the responsibility of the contractor."*

Non-Excusable and Non Compensable Delay (NND)

- *"The difference between the as-built completion date and the collapsed as-built completion date resulting from the extraction of all contractor-caused delays is the total NND for each modeled time period. If the contractor accelerated or implemented other mitigating measures and the owner did not reimburse the contractor for the cost of mitigation, the net critical mitigation duration should be subtracted from the total NND."*

Source: AACE® International Recommended Practice No. 29R-03, pages 85 and 43

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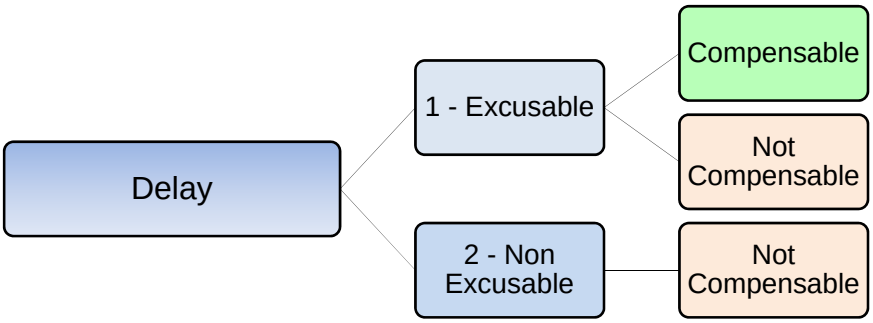
Excusability: There are Two Ways to Categorize Delay



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How is Compensable Delay Priced?

- What are the contract terms?
  - The contract terms and conditions are the authority
- General Rule – Fixed & Unavoidable Costs
  - Cost that are going to be incurred regardless of whether there are time delays
    - General Conditions
    - One-time costs

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What are Fixed & Unavoidable Costs?

- General Conditions
  - Executive management
  - Home & field office mobilization, rental, and supplies costs
- One-time costs
  - Time delay creates only time related costs.
  - Example: Mobilization & Demobilization
  - Example of NOT a one-time cost: labor staying on site for additional unscheduled days or months
- Exclude Activity Related Costs
  - Activities not related to delay or disruption

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Fixed & Unavoidable Costs cont.

- Most Common Adjustments
  - Remove one-time costs
  - Remove duplication of costs
    - i.e. including management time that is factored into OH rate.
  - Adjust or remove project management time to reflect actual additional time
  - Match additional labor time to delay days and adjust claim
  - Adjust overhead and profit to match contract or change order terms

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How is the Daily Rate Calculated?

- Daily rate should capture the time-related costs incurred as a result of the compensable delay

- What time period?
  - Should correspond with the time of compensable delay
  - For example, If delay occurred at the beginning of the project, the daily rate should be restricted to this period, and not include costs from the rest of the project.
  - If delay occurred throughout the project, using time-related costs for the entire project may be appropriate.

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How is the Daily Rate Calculated? (cont'd)

- Daily rate should not be calculated daily, due to potential variations due to timing.
  - Generally capture costs for each month and divide by the number of days to arrive at a daily rate.
- Markups, bond, insurance are usually not included, but refer to contract terms.
- In general, capture the total time-related costs during the delay period, and divide it by the number of days in the period, to calculate a daily rate.

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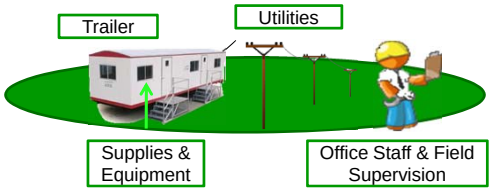
Examples of Time-Related Costs



Typical Costs

- Supervision (Project Manager and Superintendents not associated with a labor crew)
- Project Engineer
- Administrative Staff
- Field Office Trailer
- Field Office Equipment
- Field Office Utilities
- Field Office Supplies

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Example of Daily Rate Calculation

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19.5.2 Pricing of Delay Claims. Subject to Sections 13.4.3 and 13.5 above, Contractor will be entitled to an equitable adjustment for time-related Project overhead costs for compensable Excusable Delays. Once the Baseline Schedule is approved, the parties agree to negotiate in good faith and attempt to reach agreement on daily rates that will apply for such time-related Project overhead costs.

Source: Design-Build Contract between MWAA and Capital Rail Constructors

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Example of Daily Rate Calculation

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8-1.07 LIQUIDATED DAMAGES

- It is agreed by the parties to the contract that in case all the work called for under the contract in all parts and requirements is not finished or completed within the number of working days as set forth in the special provisions, damage will be sustained by the State of California, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the State will sustain in the event of and by reason of the delay; and it is therefore agreed that the Contractor will pay to the State of California, the sum set forth in the special provisions per day for each and every calendar day's delay in finishing the work in excess of the number of working days prescribed; and the Contractor agrees to pay the liquidated damages herein provided for, and further agrees that the Department may deduct the amount thereof from any moneys due or that may become due the Contractor under the contract.
- It is further agreed that in case the work called for under the contract is not finished and completed in all parts and requirements within the number of working days specified, the Director shall have the right to increase the number of working days or not, as the Director may deem best to serve the interest of the State, and if the Director decides to increase the number of working days, the Director shall further have the right to charge to the Contractor, or the Contractor's heirs, assigns or sureties and to deduct from the final payment for the work all or any part, as the Director may deem proper, of the actual cost of engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to the

Source: Standard State of California DOT Specifications – May 2006

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Example of Daily Rate Calculation

9.5.3. Owner Caused Delays. Subject to Contractor's obligations under Article 8 in respect of the occurrence of any Owner Caused Delay, if an Owner Caused Delay occurs that directly results in an actual, substantiated delay in the performance of Contractor's obligations under this Agreement, Contractor shall be entitled to a Change allowing (a) a fair and equitable extension to the period of time in which such Work may be performed to the extent of the actual, substantiated delay and (b) a fair and equitable increase in the Contract Price to cover any actual, substantiated increased cost in Contractor's performance as a result thereof.

Source: Construction Agreement by and Between Bodell Construction Company and Green Energy Team LLC and Standardkessel GmbH

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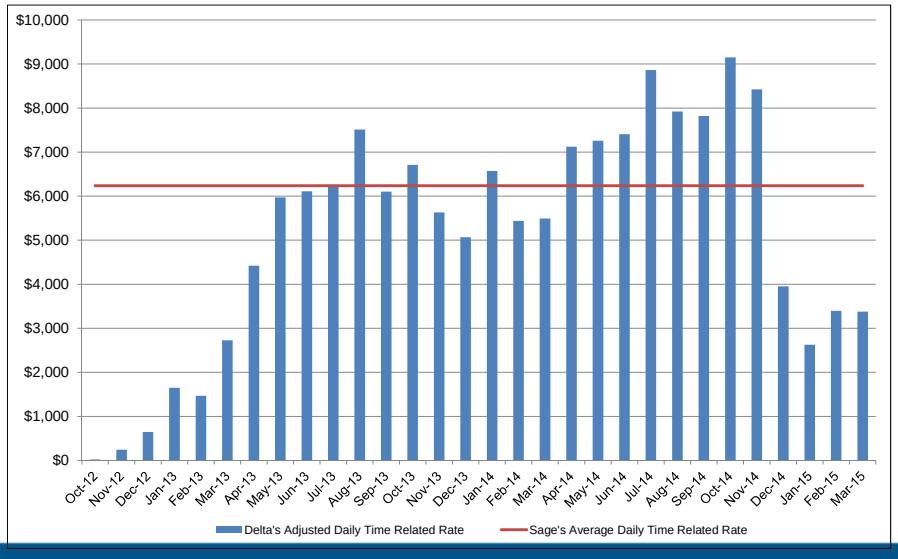
Example of Daily Rate Calculation (cont'd)



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Example of Daily Rate Calculation (cont'd)

Month	a Time Related Costs	b=5.774% x a Bond, Liab. Ins. Gen Excise Tax 5.774%	c Days per Month	d=(a+b)/c Time Related Daily Rate	e Daily Crane Labor, Mat. & Equip
Oct-12	$652	$38	31	$22	
Nov-12	6,902	399	30	243	
Dec-12	18,994	1,097	31	648	
Jan-13	48,335	2,791	31	1,649	
Feb-13	38,873	2,245	28	1,468	
Mar-13	79,903	4,614	31	2,726	$1,395
Apr-13	125,362	7,238	30	4,420	1,395
May-13	174,984	10,104	31	5,971	1,395
Jun-13	173,255	10,004	30	6,109	1,395
Jul-13	183,333	10,586	31	6,255	1,395
Aug-13	220,120	12,710	31	7,511	1,395
Sep-13	173,082	9,994	30	6,103	1,395
Oct-13	196,627	11,353	31	6,709	1,395
Nov-13	159,675	9,220	30	5,630	1,395
Dec-13	148,548	8,577	31	5,069	1,395
Jan-14	192,531	11,117	31	6,569	1,395
Feb-14	143,968	8,313	28	5,439	1,395
Mar-14	161,003	9,296	31	5,494	1,395
Apr-14	202,037	11,666	30	7,123	1,395
May-14	212,719	12,282	31	7,258	1,395
Jun-14	210,061	12,129	30	7,406	
Jul-14	259,714	14,996	31	8,862	
Aug-14	232,135	13,403	31	7,921	
Sep-14	221,750	12,804	30	7,818	
Oct-14	268,124	15,481	31	9,149	
Nov-14	238,948	13,797	30	8,425	
Dec-14	115,839	6,689	31	3,953	
Jan-15	76,936	4,442	31	2,625	
Feb-15	89,907	5,191	28	3,396	
Mar-15	98,998	5,716	31	3,378	

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What Should a Schedule Expert Provide to the Damages Expert

Wish list of things (Includes some the Schedule Expert may not have performed at all or may not have looked at a specific activity).

Additional Scope of Work Costs Damage

Activity Start
Activity Finish
Activity Duration

→ assess the appropriateness of costs included and the overall reasonableness of the costing of the additional work

Loss of Productivity or Inefficiency Damages

Impact Period(s)
Contractor caused issues
Contractor problems

→ assess causes of LOP / inefficiency and contractors performance (derived from development of As-Built)

Delay Damages

Impact Period
# of Critical Delay days
# of compensable Delay days
Activities on Critical Path
Activities on Near-Critical Path

→ assess cost pool (timeframe, costs included or excluded) for daily rate and # of days compensable

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Additional Pricing Considerations

Typical Contractor Cost Pools

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"Sticks & Bricks" "LEMSO"	On-Site expenses "FOOH"	Off-Site expenses "HOOH"
Labor Equipment Material Subcontract Other	Management Supervision Safety "Field" Office	Executives Marketing Accounting "Home" office

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Field and Home Office Overhead

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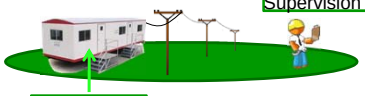
A Field Office Costs Supports A Project

Trailer | Utilities | Office Staff & Field Supervision



Supplies & Equipment

Typical Costs

- Supervision (Project Manager and Superintendents not associated with a labor crew)
- Project Engineer
- Administrative Staff
- Field Office Trailer
- Field Office Equipment
- Field Office Utilities
- Field Office Supplies

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Field and Home Office Overhead

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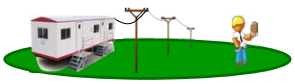
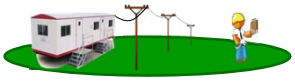
A Field Office Costs Supports A Project

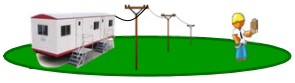
Home Office Costs Supports All Operations



Project 1



Project 2



Project 3

%

%

%

Home Office Categories

- Executives
- Business Development and Staff Marketing
- Legal and Accounting Staff
- Corporate Office Costs and Utilities

Other Characteristics

- Generally Time Related
- Costs are not attributable to any single project but are absorbed by every project

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Cost Pools – Inconsistent Terminology

Direct Costs	Direct Costs Indirect Costs Field Indirect Costs General Conditions	Indirect Costs Home Office costs General & Administrative
"Sticks & Bricks" "LEMSO" Labor Equipment Material Subcontract Other	On-site expenses "FOOH" Management Supervision Safety "Field" Office	Off-Site expenses "HOOH" Executives Marketing Accounting "Home" office

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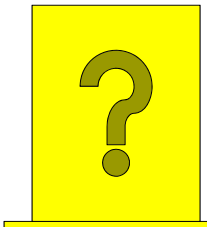
What's in the Mark-up Percentages?

Itemized or Percentage added to LEMSO or both

Percentage added to LEMSO plus On-site



On-site expenses

Management
Supervision
Safety
"Field" Office

Project Manager
Area PM
Proposal Manager
Estimator
Scheduler

Off-Site expenses

Executives
Marketing
Accounting
"Home" office

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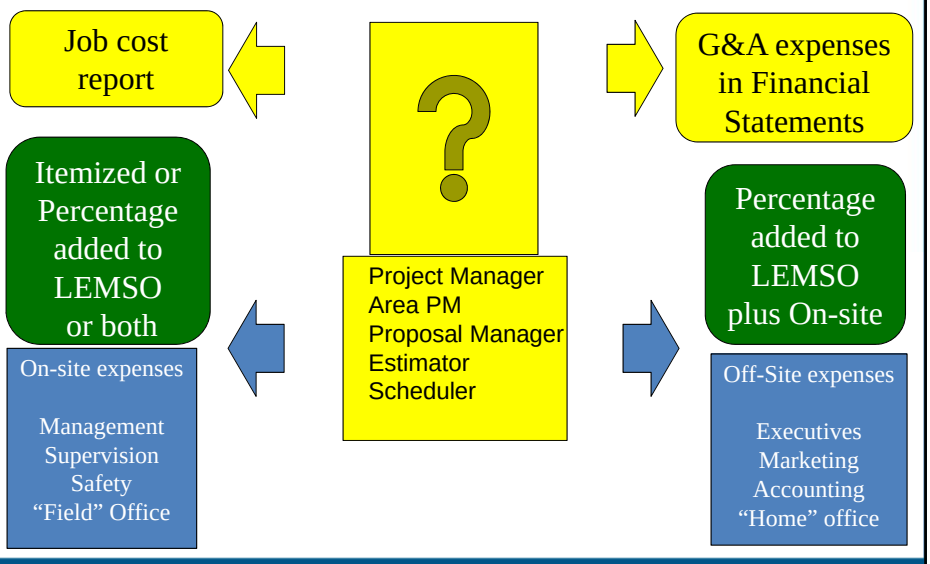
What's in the Mark-up Percentages?



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Extended Overheads – Home Office Overhead

- Common Methods for Calculating
  - Eichleay Formula
  - Percentage Mark Up on Costs
  - Specific Allocation
  - Carteret or Allegheny Methods
  - Manshul Method

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Eichleay Formula

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Extended Overheads – Home Office Overhead

- Major Categories of Costs Excluded from the Pool
  - Bad Debts
  - Contributions or Donations
  - Entertainment Costs
  - Interest on Borrowing
  - Losses on Contracts
  - Certain Public Relations and Advertising Costs

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Productivity Loss

The Association for the Advancement of Cost Engineering International (AACEI) has categorized many of the tested and valid methods used to recover labor inefficiency claims in the North American legal system. In all, this organization reviewed and ranked twenty one methodologies as those most widely used in North American loss of efficiency claims. The AACEI reports that the most widely accepted methodologies falls under the category of Project Specific Studies and the most widely accepted technique in this category is known as the Measured Mile Study. For this analysis, we will utilize a Measured Mile Study to quantify lost man-hours per AACEI Recommended Practice, No. 25R-03, Estimating Lost Labor Productivity in Construction Claims, 2004, pgs 08-09.
Ibid. AACE Recommended Practice, p. 08.

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Productivity Loss – Measured Mile

The Measured Mile methodology compares the actual productivity achieved on similar activities to determine a loss of productivity.

The Baseline productivity represents the best the contractor could achieve when operating under conditions it controlled or largely controlled.

The Impacted productivity is that achieved when operating under conditions largely out of its control

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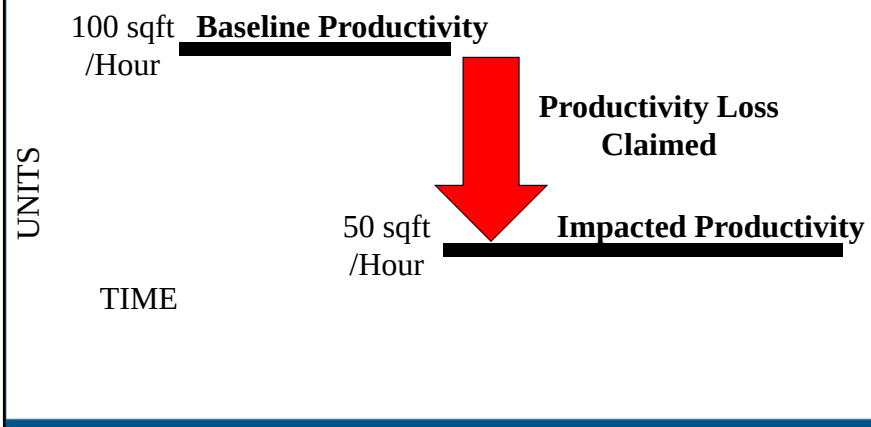
Productivity Loss – Measured Mile



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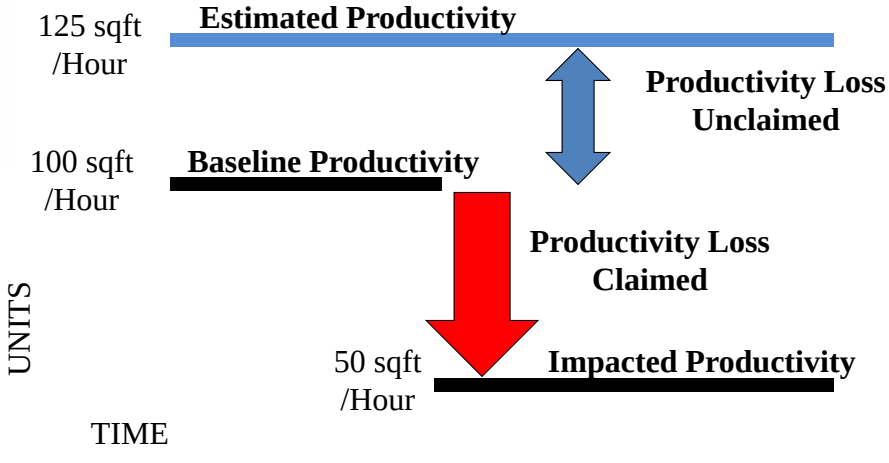
Productivity Loss – Measured Mile



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