“Managing Construction Claims”

Calvey Consulting, LLC
8473 Settlers Passage
Cleveland, OH 44141
440-740-1132
Managing Construction Claims

- Why are Claims are disputed.
- What is Typical Claim
- What does a Consultant use to develop a Claim.
- What are the Key Components.
- What are Accepted Methods of Analysis
Why are Construction Claims Disputed?

- The Issues are complex.
- The Claims are loosely documented.
- Breakdown in communication.
- There is an honest difference in opinion.
- No budget dollars.
What is a “Typical Construction Claim”?

- Claimant – Multi Prime Contractor
- Money
- Time
- Source of the Dispute – Third Party
- No Exact Accounting
What does a Claims Consultant use to develop his analysis?

- Contract
- Project Schedules
- Pay Applications
- Certified Payrolls
- Project Meeting note
- Daily Logs
What are the Key Components of a Typical Contractor’s Claim?

- The Planned Schedule
- The Actual Schedule
- Predecessor Delay
- Impact on the Contractor
- Quantify the Damages
Methods of Delay Analysis
Time Impact Analysis

- Impacted As Planned
- Adjusted As Built
- Windows
- Constructive Acceleration
Calculating Damages

- Extension of General Conditions
- Extension of Home Office Overhead
- Escalation
- Loss of Productivity
AACE - Purpose of Recommended Practice

- Identify Lost Productivity Estimating Methodologies
- Rank Order the Methodologies
- Define and Discuss Each Methodology
- Identify Selected Studies Applicable to Each Methodology
Methods of Estimating Lost Productivity

- Project Specific Studies
- Project Comparison Studies
- Specialty Industry Studies
- General Industry Studies
- Cost Basis
What is Productivity?

Productivity = \frac{Output \ (units \ completed)}{Input \ (work \ or \ equipment \ hours)}

Productivity Factor = \frac{Actual \ Productivity}{Baseline \ or \ Planned}

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Common Causes of Lost Productivity

- Acceleration (directed or constructive)
- Crowding of labor or stacking of trades
- Over manning
- Learning Curve
- Excessive overtime
- Adverse or unusually severe weather
- Dilution of Supervision
Common Causes of Lost Productivity

- Changes, ripple impact, cumulative impact of multiple changes and rework
- Defective engineering, recycle and/or rework
- Absenteeism and the missing man syndrome
- Craft turnover
- Material, tools and equipment shortages
- Site or work area access restrictions
Project Specific Studies

- Measured Miles Study
- Earned Value Analysis
- Work Sampling Method
- Craftsmen Questionnaire Sampling Method

How long is it?
Measured Mile – Physical Units

Measured Mile
10 Miles of pipe installed – 1,000 manhours
100 manhours/mile

Impact
4 Miles of pipe installed – 640 manhours
160 manhours/mile

Loss of Productivity
60 manhours/mile
x4 miles
240 manhours
Earned Value Analysis

Measured Mile
70% Labor Complete – 1,000 manhours
   14.3 manhours/1%

Impact
30% Labor Complete – 640 manhours
   21.3 manhours/1%

Loss of Productivity
   7 manhours/1%
   30%
   240 manhours
Project Specific Studies

- Measured Miles Study
- Earned Value Analysis
- Work Sampling Method
- Craftsmen Questionnaire Sampling Method
Project Comparison Studies

- Comparable Work Study
- Comparable Project Study
Specialty Industry Studies

- Acceleration
- Changes, Cumulative Impact and Rework
- Learning Curve
- Overtime and Shift Work
- Project Characteristics
- Project Management
- Weather
Specialty Industry Studies

- Selected Studies
  - Weather Impact on Productivity
  - Overtime Impact on Productivity
Weather Impact on Productivity

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Weather Impact on Productivity (NECA Studies)

- Temperature (effective) Impact

<table>
<thead>
<tr>
<th>Effective Temperature Range °F</th>
<th>Efficiency %</th>
</tr>
</thead>
<tbody>
<tr>
<td>+40 to 80</td>
<td>100</td>
</tr>
<tr>
<td>-20 to +20</td>
<td>20 – 95</td>
</tr>
<tr>
<td>80 to 100</td>
<td>85 - 60</td>
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Weather Impact on Productivity

- Daily Log Documentation
  - Frequency (AM, Noon, PM)
  - Temperature
  - Wind
  - Precipitation (rain, snow, sleet)
  - Excessive Humidity

- Historic Data
  - National Oceanic & Atmospheric Admin. (NOAA) – National Climatic Data Center

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Overtime Industry Studies

- Bureau Labor Statistics – 1947 (Mfg.)
- Business Roundtable – 1980
  - 10 year study of P&G plant projects
- National Electrical Contractors Assn.
- Construction Industry Institute – 1988
  - 7 projects, all crafts
- Cost Engineering Composite - 2004

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Overtime Impact on Productivity

NECA Study

Weeks

% Productive

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# Overtime Impact on Productivity

<table>
<thead>
<tr>
<th>Days – hours per day</th>
<th>Productivity Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 wks to 12 wks</td>
</tr>
<tr>
<td>5 - 10’s</td>
<td>95 % to 70 %</td>
</tr>
<tr>
<td>6 - 10’s</td>
<td>91 % to 62 %</td>
</tr>
<tr>
<td>5 - 12’s</td>
<td>85 % to 52 %</td>
</tr>
<tr>
<td>6 - 12’s</td>
<td>75 % to 45 %</td>
</tr>
<tr>
<td>7 - 12’s</td>
<td>70 % to 40 %</td>
</tr>
</tbody>
</table>
General Industry Studies

- U.S. Army Corps of Engineers Modification Impact Evaluation Guide
- Mechanical Contractor’s Association of America
- National Electrical Contractor’s Association
- Estimating Guides

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General Industry Studies

- MCAA
  - 16 Factors
  - Range of Loss
- NECA
  - 25 Factors Checklist
  - Normal – Difficult – Most Difficult
- US Army Corps of Engineers
  - Number of Factors
  - No Longer Published
Cost Basis

- Total Unit Cost Method
- Modified Total Labor Cost Method
- Total Labor Cost Method

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Measured Mile

MEASURED MILE

Actual Production

60% Complete: 14,762 Manhours

Projection To 24,000 Total Manhours

Measured Mile Trend To 60%

LORManhours

32,668

8,668

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“[The Government] is correct in asserting that the work performed during the periods compared by [the Contractor] was not identical in each period. We would be surprised to learn that work performed in periods being compared is ever identical on a construction project, however. And it need not be; the ascertainment of damages for labor inefficiency is not susceptible to absolute exactness. (Citation omitted). We will accept a comparison if it is between kinds of work which are reasonably alike, such that the approximations it involves will be meaningful.”