

# A Primer on Forensic Schedule Analysis



by

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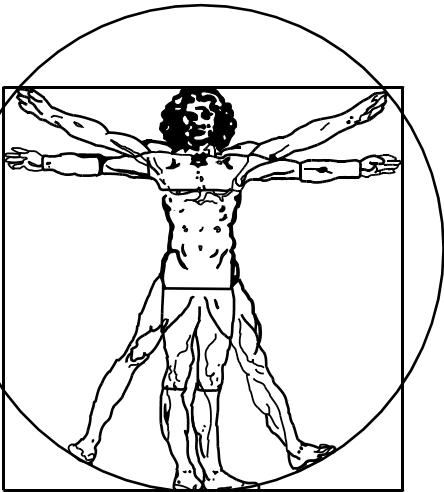
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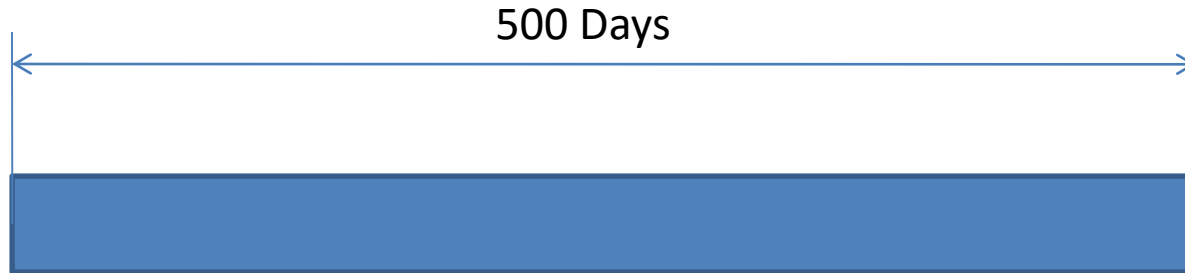
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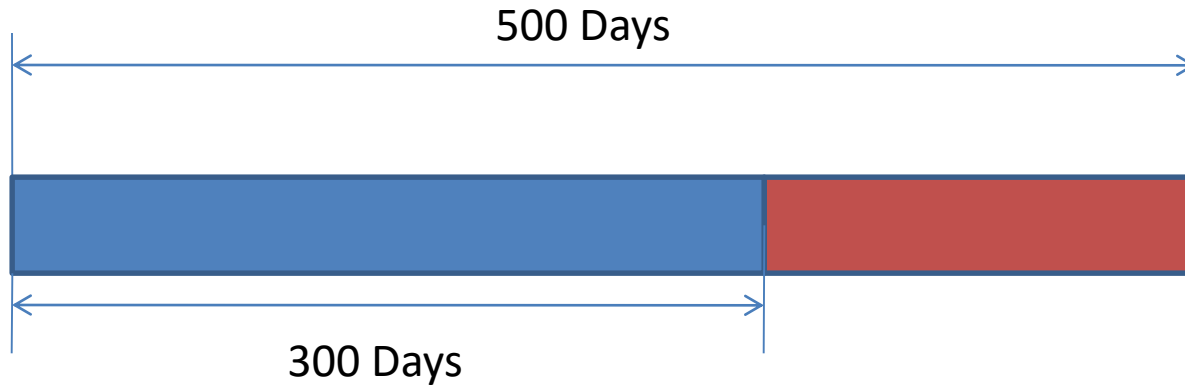
# Delay?



The actual duration of the project was 500 days.

Was the project delayed?

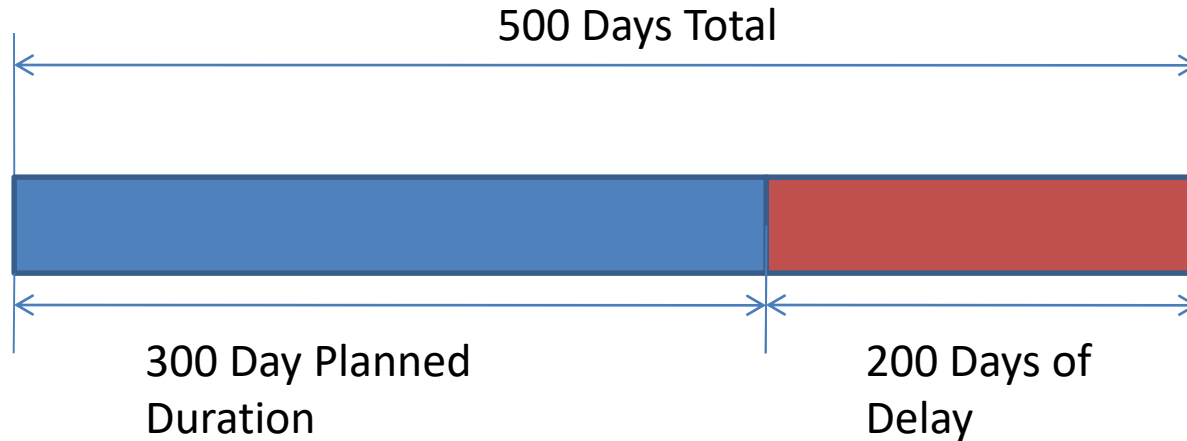
# Delay



The actual duration of the project was 500 days and the planned duration of the project was 300 days.

Was the project delayed?

# Delay



If we know the project's planned duration of 300 days and actual duration of 500 days, everyone can determine the project was delayed 200 days; but now what?

# Fundamental Problem of Assessing a Delay



A project is not typically comprised of one activity;  
or 5 activities;  
or even 50 activities.

# Fundamental Problem of Assessing a Delay



And, just as a project is not typically comprised of one activity;

A project rarely has just one  
potential cause of delay.

# Fundamental Problem of Assessing a Delay



The trick is determining the activity(ies)  
that were critical to the project;

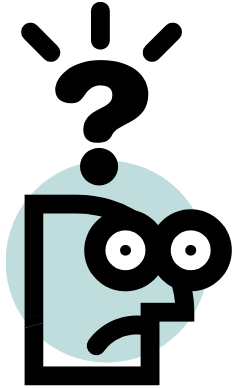
And by extension, the delays that  
were critical to the project.

# Critical Delay

- A delay becomes a critical delay to the project to the extent that it causes the overall duration of the Project to increase.
- Non-critical delays do not cause a delay to the overall duration of the project; however, they can result in added costs and liabilities.



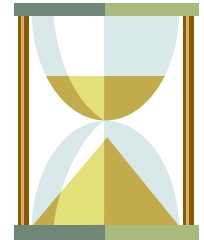
# Critical Delay



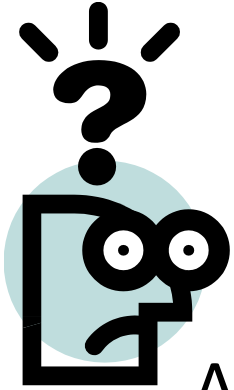
So how do we assess which activities were critically delayed or even which activities were delayed?



An activity took 25 days. Was it delayed?



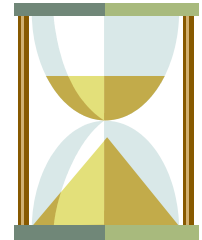
# Critical Delay



An activity took 25 days. Was it delayed?



You can already see where I'm going with this. It is difficult to assess which activities were delayed, much less which activities are **critical** unless we know how long each activity was expected to take.



# Critical Delay

So how do we determine how long each activity should take?

If we estimate based on our knowledge of the project, we are putting forward a (well) educated guess. However, the duration of an activity is related to the amount of resources and the skill of the resources assigned to the activity, which as we all know can change during the course of a project.



# Critical Delay

So how do we determine how long each activity should take?

In most cases, the project schedule (if one exists) is the best source for determining how long an activity should have taken.



# Critical Delay

Does the schedule also tell us what is critical?

Critical Path Method (CPM) schedules define a critical path of project activities at particular points in time (as of the data date of the schedule).

# Critical Delay

Does the schedule also tell us what is critical?

Schedules do not tell you what activities are critical throughout the project, and thus the reason a scheduling expert is typically hired.

Experts can have different results depending on the method of analysis used.

# Methods of Assessing Critical Delay

## Different Methods

- Impacted As-planned
- Collapsed As-built
- Time Impact Analysis
- Windows Analysis
- As-built Analysis
- As-built Critical Path Analysis
- Contemporaneous Analysis

# Methods of Assessing Critical Delay

The choices of analysis and the quality of the results improves with the quality of the schedules, the daily reports and the meeting minutes on your project.



So what can you do to help your projects?

# So what can you do to help?



Image from the movie Office Space

## The Story of the Bad Boss

# Escalation of Problems

- More Time to Resolve
- More People Involved
- Higher Costs to Resolve
- Entrenched Expectations

