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**Midwest**

**DAMAGE PREVENTION TRAINING CONFERENCE**  
2023 • FRENCH LICK, IN



***Risk vs. Reward:  
Preventing Loss and Increasing Profitability***

*Presented by:*

*A.J. Manion*

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# MBA 101

Success by design;  
Failure by destiny



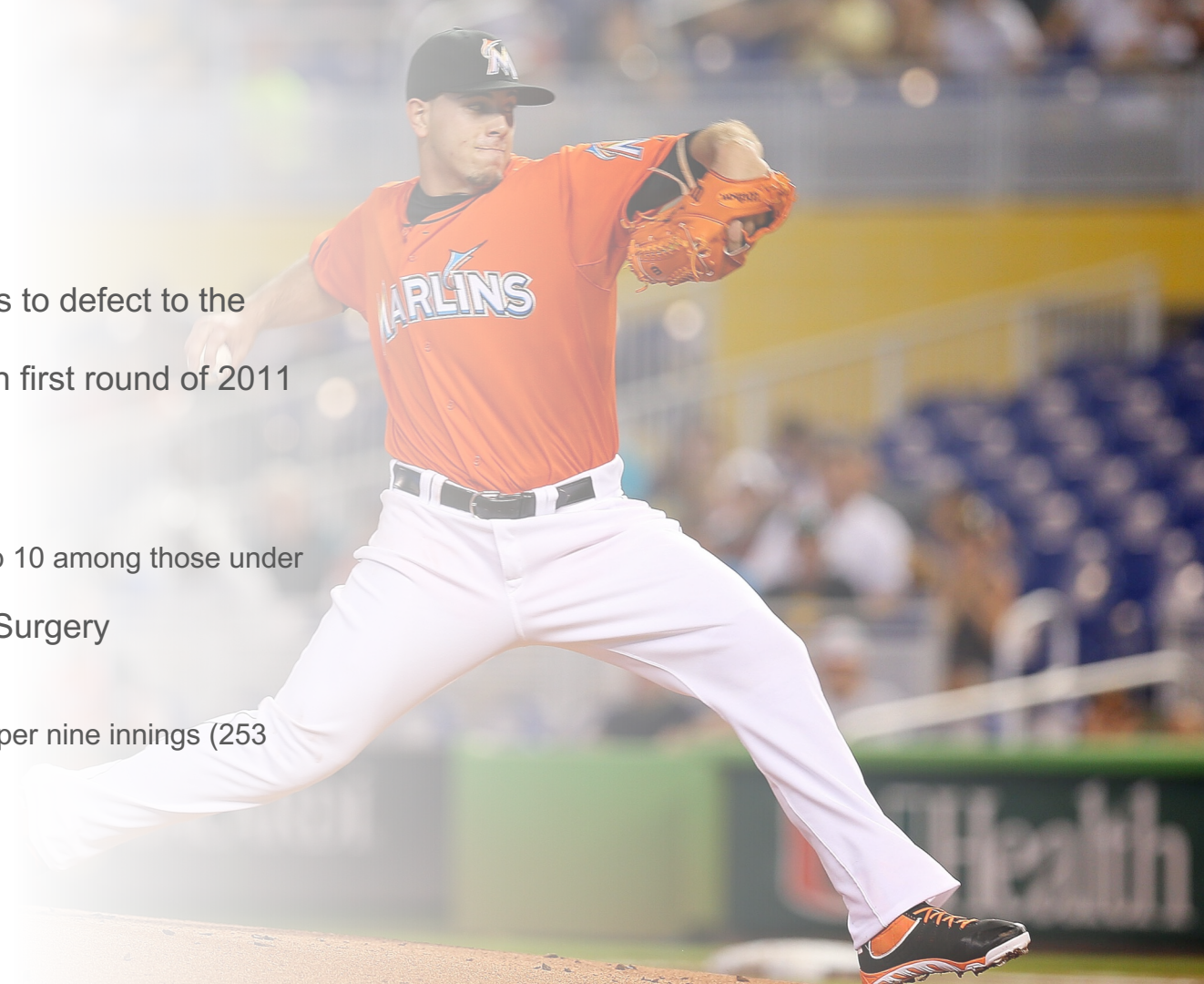
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# Career

- Born in Santa Clara, Cuba
- 6'3", 243 lbs
- Three unsuccessful attempts to defect to the U.S.
- Selected by Miami Marlins in first round of 2011 MLB draft
- 2013
  - MLB All-Star
  - MLB Rookie of the Year
  - Wins Above Replacement Top 10 among those under 21 years of age since 1900
- 2014, 2015 – Tommy John Surgery
- 2016
  - MLB All-Star
  - MLB-leading 12.49 strikeouts per nine innings (253 strikeouts in 182 innings)
  - Won 16 games
  - 2.86 ERA



# Supporting Cast

- Giancarlo Stanton
- Christian Yelich
- Dee Gordon
- J.T. Realmuto
- Marcell Ozuna





## September 25, 2016

- Boating is dangerous
- Boating fast is even more dangerous
- Boating fast, at night, more dangerous still
- Boating fast, at night, when under the influence of cocaine and alcohol, well ...



# Giancarlo Stanton

- Traded to Yankees
- MLB All-Star 2017, 2022
- Silver Slugger, 2017
- Accumulated over 1000 RBIs





## Christian Yelich

- Traded to Milwaukee
- MLB All-Star, 2018, 2019
- NL MVP, 2018
- Silver Slugger, 2018, 2019

## Dee Gordan

- Traded to Seattle
- 2017, batted .308/.341/.375 and led the majors in bunts





## J.T. Realmuto

- Traded to Philadelphia
- NL All-Star, 2018, 2019
- NL Silver Slugger 2018, 2019
- All MLB First Team, 2019
- All MLB Second Team, 2020
- Gold Glove, 2019
- Enjoyed several post season runs



## Marcell Ozuna

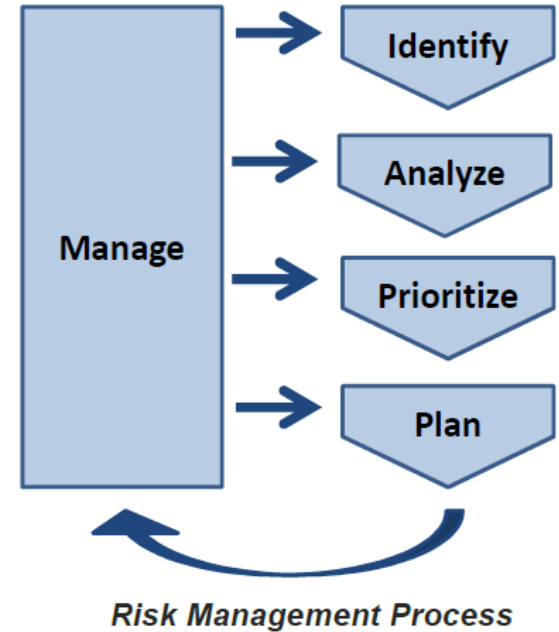
- Traded to St. Louis (then Atlanta)
- MLB ALL-Star 2017
- Gold Glove, 2017
- Silver Slugger, 2017, 2020
- NL homerun leader, 2020
- NL RBI leader, 2020

Miami's starting pitchers in 2017 had a 5.12 ERA, which was the fifth-worst mark in baseball



# Risk Management Process

- Risk Management is a five-step process that starts with identifying the risks
- The cause and effect of each risk is analyzed
- Risks are then prioritized based on the probability and impacts of the risks using a risk matrix
- Responses are planned for the high priority risks
- There is a regular cycle of activity to manage the risks and response plans



STEP 1

## Identify

- Elicit risks
- Draft risk statements
- Assign risk owners

- Use pre-existing material
  - Changes to date
  - Customer Feedback
  - Lessons Learned From Other Projects
- Team Input
  - One-to-one interviews
  - Risk Identification Workshops\*
  - Questionnaires
- Techniques to encourage team input
  - Brainstorming
  - Checklists
  - Root cause analysis

Example: IF heavy haul roads are not passable by 31 December, 2023, THEN delivery of primary equipment to the site may be delayed with cost/schedule impacts

\* = Most often used method



STEP 2

Analyze

- Determining causes and effects
- Categorizing by sources
- Determining impact dates

- Analyze the uncertain event (**the IF**) and its potential consequences (**the THEN**) listing causes and detailed possible consequences

Uncertain Event	Potential Consequences
IF heavy haul roads are not passable by 31 December 2023	THEN delivery of primary equipment to the site may be delayed with cost/schedule impacts
<u><b>Causes</b></u>	<u><b>Detailed Consequences</b></u>
<ul style="list-style-type: none"><li>• Missing 5 land use permits, (expected receipt is 15 January 2024) Road work at packages A, B, and C is stopped.</li><li>• Community protests, every other day, at lower road areas prevent access to work fronts.</li><li>• Work is taking place during the rainy season with only 60% of scheduled work days suitable for deploying labor force.</li></ul>	<ul style="list-style-type: none"><li>• Completion of work fronts A, B, C, D and E are expected to exceed the baseline.</li><li>• Schedule float has been consumed, forecasting 45 days additional time needed due to weather impacts.</li><li>• Equipment delivery milestones have associated Liquidated Damages (LDs).</li><li>• Contractors are asserting standby claims.</li><li>• Equipment will be kept in storage longer.</li><li>• Assumption: Alternate site access roads cannot accommodate transportation of Primary Equipment to site.</li></ul>

STEP 3

**Prioritize**

- Estimate probability and impacts
- Determine risk matrix current score
- Review and act on severity color

- *Prioritize* events by estimating its probability and possible impacts.

Uncertain Event	
IF heavy haul roads are not passable by 31 December 2023	
<b><u>Causes</u></b>	<b><u>What is the probability of event occurrence?</u></b>
<ul style="list-style-type: none"><li>• Missing 5 land use permits, (expected receipt is 15 January 2024) Road work at packages A, B, and C is stopped.</li><li>• Community protests, every other day, at lower road areas prevent access to work fronts.</li><li>• Work is taking place during the rainy season with only 60% of scheduled work days suitable for deploying labor force.</li></ul>	10% ? 30% ? 50% ? 70% ? 90% ? > 90% → allocation of project resources ?

STEP 3

**Prioritize**

- Estimate probability and impacts
- Determine risk matrix current score
- Review and act on severity color

Cont.

<b>Uncertain Event</b>	
THEN delivery of Primary Equipment to site may be delayed with cost/schedule impacts	
<b><u>Effects</u></b>	<b><u>Estimated Impacts</u></b>
<ul style="list-style-type: none"><li>• Completion of work fronts A, B,C, D and E are expected to exceed the baseline.</li><li>• Schedule float has been consumed forecasting 45 days additional time needed due to weather impacts.</li><li>• Equipment delivery milestones have associated Liquidated Damages (LDs).</li><li>• Contractors are asserting standby claims.</li><li>• Equipment will be kept in storage longer.</li><li>• Assumption: Alternate site access roads cannot accommodate transportation of Primary Equipment to site.</li></ul>	Costs and schedule impacts to extend work front activities (\$ and X Days)  Extension of work front time exacerbated due to weather conditions (\$ and X Days)  Contractor Claims (\$)  \$100K/Day liquidated damages  Unplanned storage and maintenance costs

### STEP 3

## Prioritize

- Estimate probability and impacts
- Determine risk matrix current score
- Review and act on severity color

Cont.

- Probability and Impact Dimensions
  - $\leq 10\%$  Very Low
  - $>10\%$  to  $30\%$  Low
  - $> 30\%$  to  $70\%$  Medium
  - $> 70\%$  to  $90\%$  High
  - $> 90\%$  Very High
- Using Probability and potential impact considerations, determine relative ranking of risk register
  - Risk ranking is a combination of the probability of the event (P) and the magnitude of the impact (I)

Risk Ranking



$(P, I) = \text{Risk Ranking}$

Which risk to work first?

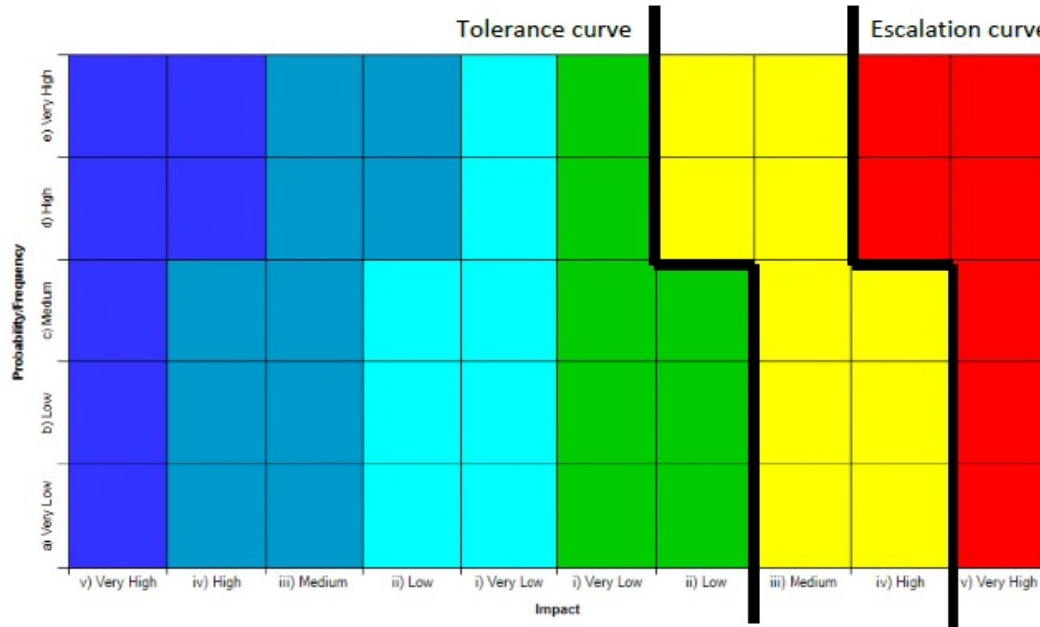
STEP 3

**Prioritize**

- Estimate probability and impacts
- Determine risk matrix current score
- Review and act on severity color

Cont.

- Set your projects scoring scheme according to your risk appetite
  - Set boundary so a risk's current score says whether a response is needed
  - Set boundary at the point at which risks need escalation



# Call before You Dig Statutes

“Except [for emergencies], a **person responsible for the excavation** may not excavate real property... without first ascertaining in the manner prescribed [herein] the location of all underground facilities in the area affected by the proposed excavation...”

“Except [for emergencies]...before commencing an excavation...each **person responsible for the excavation** shall...serve **notice** on the [State Association] of the person's intent to excavate or demolish...and provide...[the location]...at least two (X) full working days but not more than (Y) calendar days before commencement.

[State Association] shall notify each [utility] operator. A notice provided under this section...expires. If, at expiration, any part of the excavation...[is not]...complete [the **person responsible for the excavation**] may not continue until...a new locate request is sent.



# Call before You Dig Statutes

"A **person** that:

- 1) causes damage to a pipeline facility located in an area of excavation or demolition;
  - 2) is required to provide notice under this section for the excavation or demolition; and
  - 3) fails to provide the notice;
- may be subject to a civil penalty...not to exceed **ten thousand dollars (\$10,000)**.

"If a [utility] operator suffers a pecuniary loss as a result of a violation...person responsible for the excavation...may be liable for:

- 1) An amount equal to the operator's actual damage to the facility.
- 2) The costs of the action.
- 3) A reasonable attorney's fee.
- 4) At the court's discretion...punitive damages **up to three (3) times** the actual damage.



# “Risk”

A business must define risk as anything that can affect the bottom line:

- a catastrophe; but also
- any operational failure leading to decreased profitability





# “Risk vs Uncertainty”

Many undetermined outcomes affect the bottom line:

- Uncertainty = outside the businesses’ influence or control (competitors, interest rates)
- Risks = subject to influence or control



# Understand the (basic) model

$$\begin{array}{r} \text{Contract Value} \\ - \text{cost to perform} \\ \hline \text{Profit} \end{array}$$



# The Productivity Assumption

Basic labor calculation:

$$\frac{\text{Manhours} \times \text{Rate (\$/MH)}}{\text{Labor Cost}}$$

How many manhours?

$$\frac{\text{Units to be Installed} \times \text{Manhours/unit}}{\text{Manhours}}$$

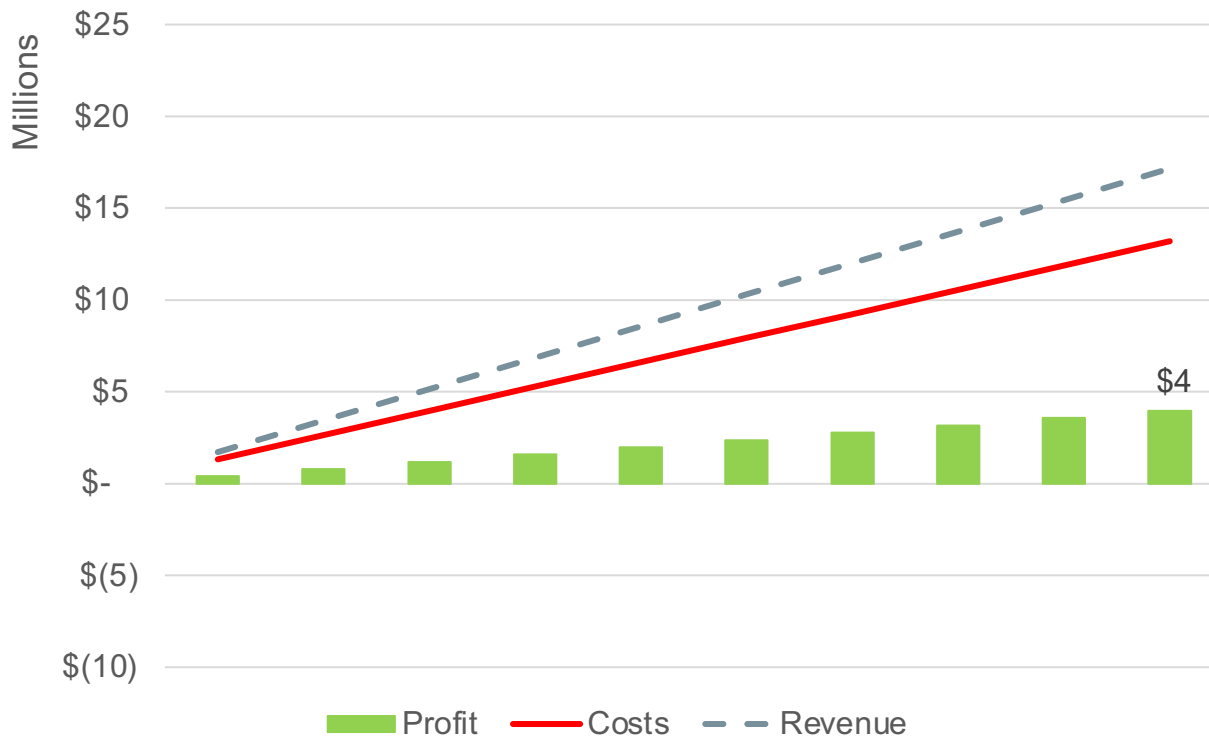


# Simple Project Example

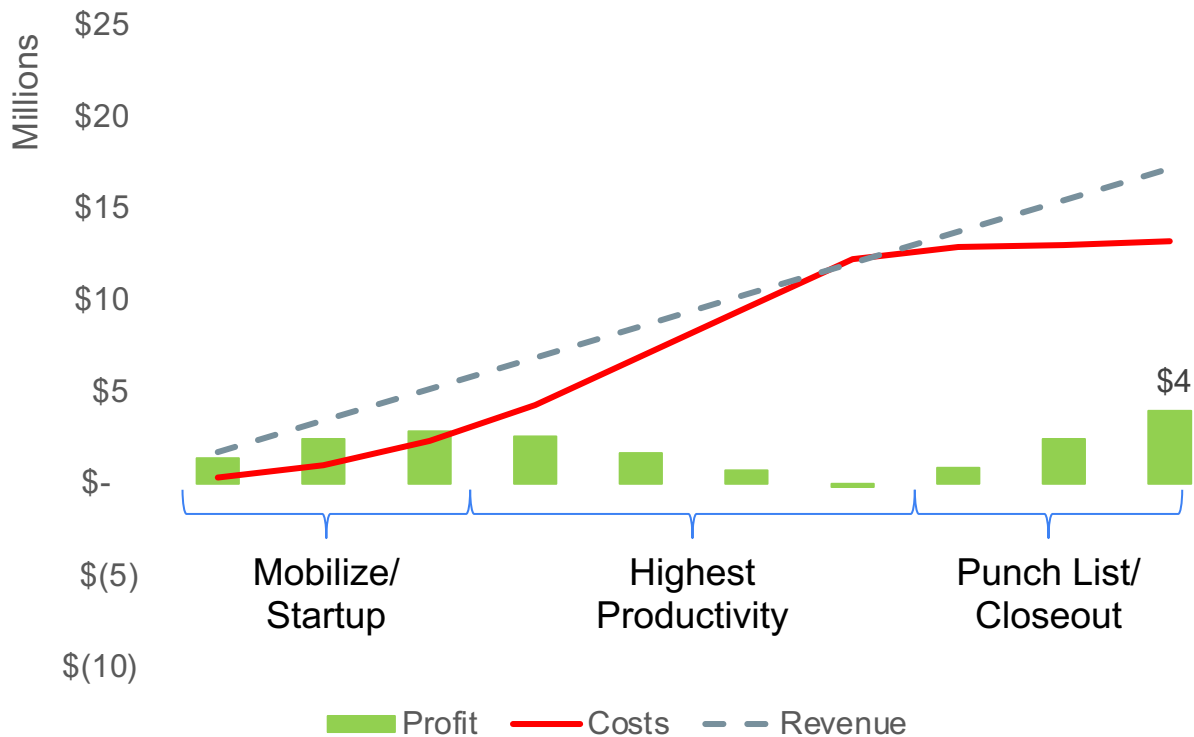
- \$17.1 MM Contract
- 100,000 UOM
- 52 Week Schedule
- \$60/HR Labor Rate
- Estimate: 2.2 MH/UOM
  - 220,000 MH
  - 4,231 MH/Week
  - 106 Headcount



## Job Plan @ 2.2 UOM/MH



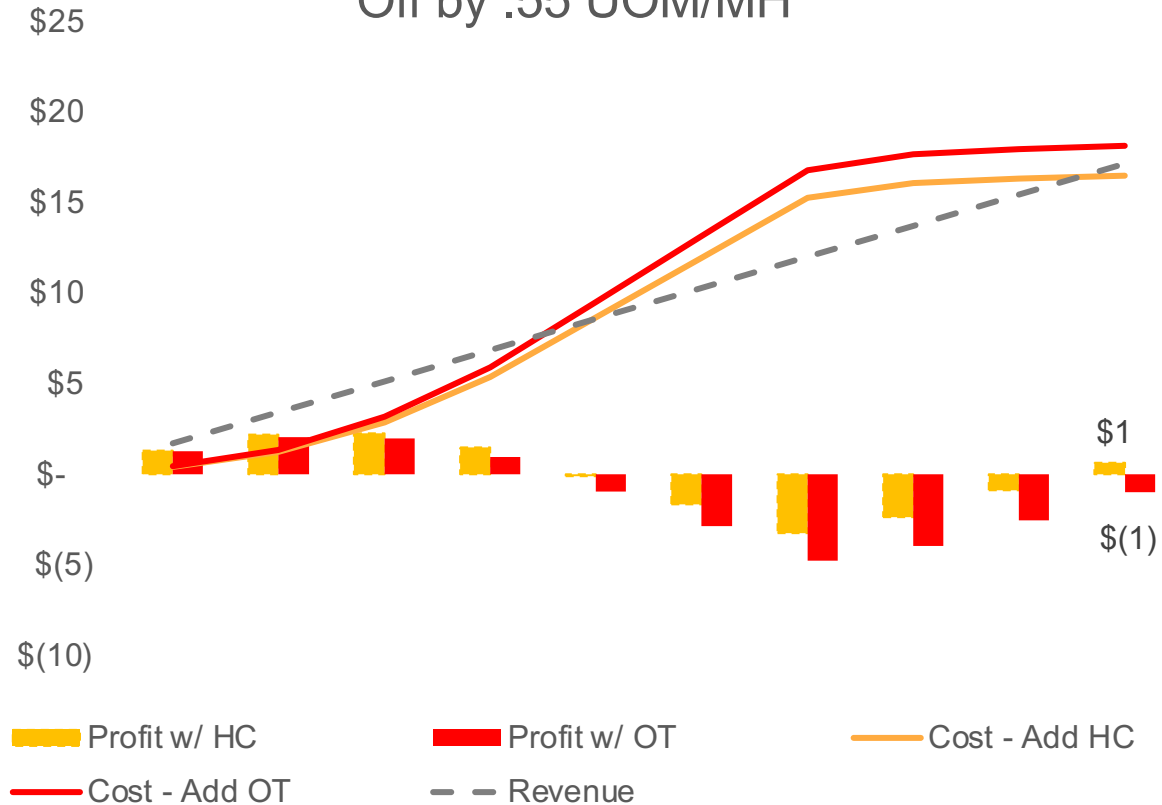
# Job Plan @ 2.2 UOM/MH



True Rate is 2.75 UOM/MH  
Off by .55 UOM/MH

Millions

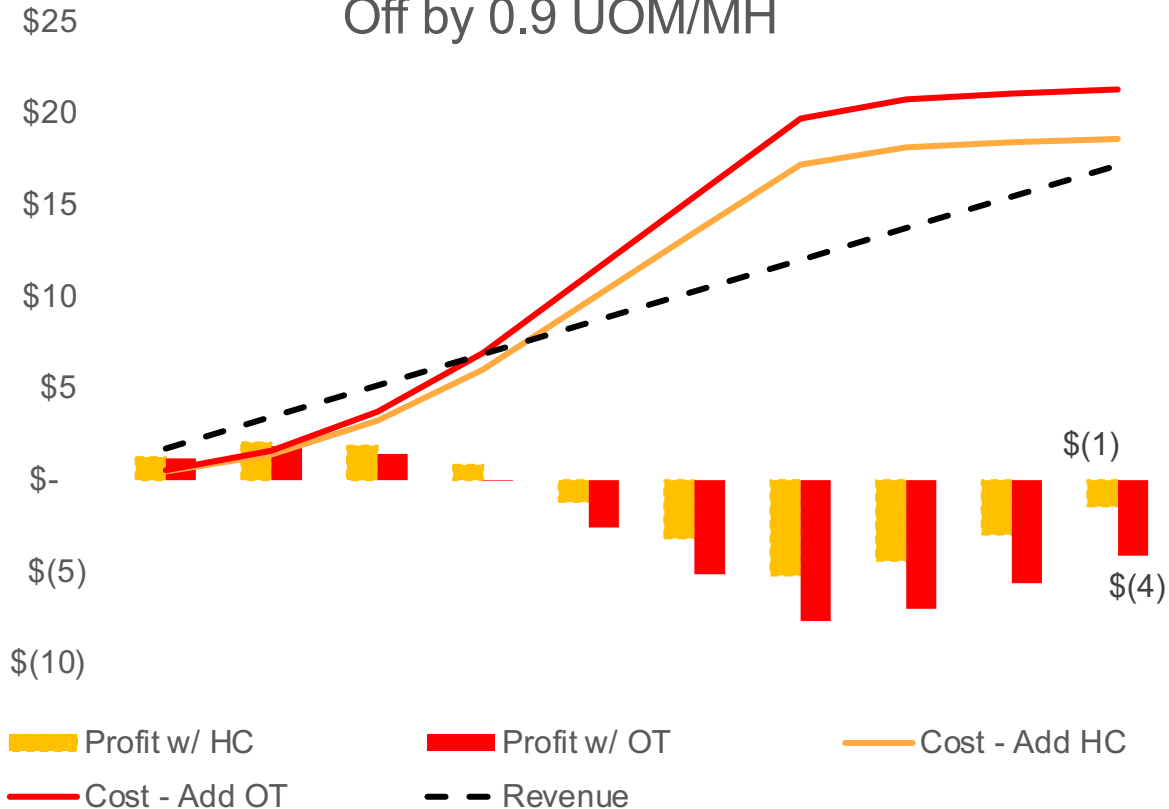
- Add 25 Heads  
or  
- Work 20% OT



True Rate is 3.1 UOM/MH  
Off by 0.9 UOM/MH

Millions

- Add 43 Heads  
or  
- Work 40% OT





# Means and method: what does it mean?

”Your” means and methods:

“Means and methods is the approach to or manner of construction, including amount of labor, material, and equipment necessary to implement the selected technique adopted by the contractor to perform the work”. William R. Mincks, et al., Construction Jobsite Management 358

(Cengage Learning 2d ed. 2004).



# Means and method: what does it mean?

”My” means and methods:

“Where a party stipulates that another shall do a certain thing, he thereby promises that he will himself do nothing which will hinder or obstruct that other in doing that thing.” 5 Williston on Contracts, 1937, §1293A, pp. 3686-87



# Disrupted means and methods

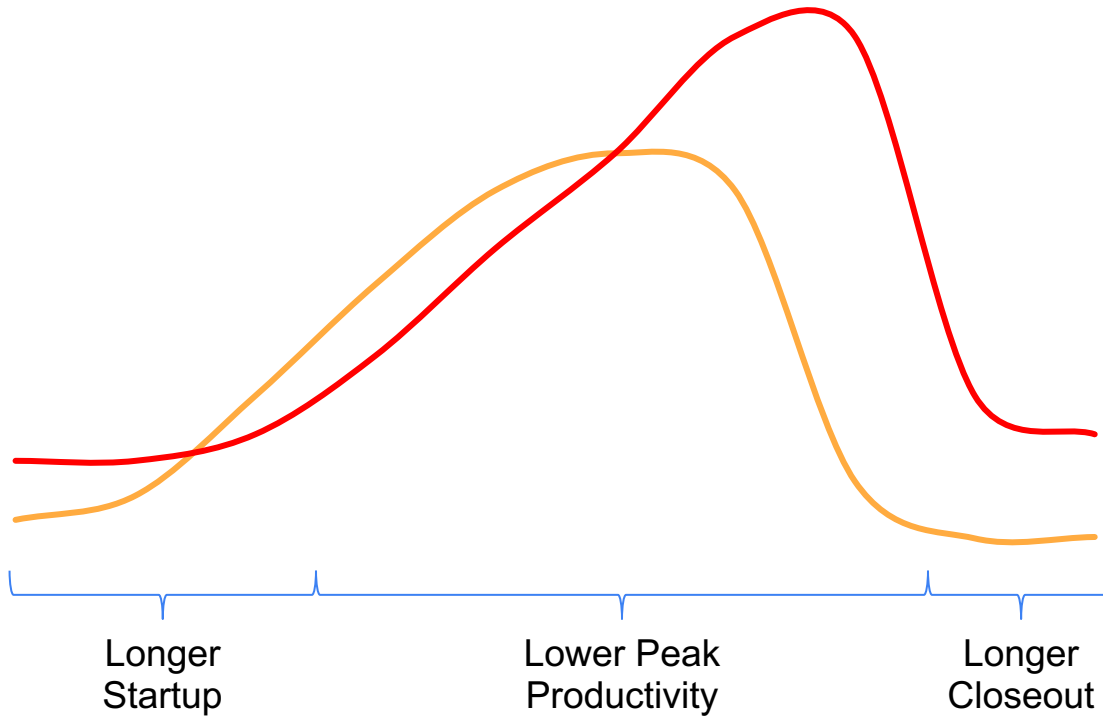
- Any interference that prevents you from achieving intended levels of efficiency and productivity ...
- Any delay extending your time – therefore costs – of performance ...
- Any external event resulting in costs exceeding budgeted for materials, equipment, or manpower ...

**must be promptly evaluated as a breach of contract and corresponding claim for additional compensation**



True Rate is 3.1 UOM/MH  
Off by 0.9 UOM/MH

— Cost @ 2.2  
— Cost @ 3.1



# And everything requires notice

- Required

  - Expressly required in all contracts

  - Notice is a fundamental part of contract/subcontract administration

  - Notice IS change administration

- All notions of equity and fair play demand prior notice

  - Failure of notice provides simple technical defense

- Consequences of no notice?

  - An undocumented change will not be compensated

  - An undocumented change can unintentionally shift design liability



# Remember the (basic) model

$$\begin{array}{r} \text{Contract Value} \\ - \text{cost to perform} \\ \hline \text{Profit} \end{array}$$





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