

# TACUA

texas association of college and university auditors

## Fundamentals of Construction Auditing What you need to know



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# Overview

- Generally, construction represents a major capital spend and considerable risk to an organization.
- Understanding that risk and controlling the construction project empowers organizations to gain control over capital spend, limit overpayments, control change and maximize work towards a successful completion of a project.
- The presentation will equip auditors with the key (auditable) elements of construction projects, such as:
  - Key players
  - Phases of construction
  - Construction risk, and
  - Common construction audit findings
- We also discuss the issues around managing a construction audit project, especially as it relates to timing and project interactions.

# Introduction of Speaker

## **Bill Mansfield, Partner, Sirius Solutions, L. L. L. P.**

- Former “Big Four” and Fortune 500 Management Experience
- Over 12 years with Sirius Solutions leading multiple consulting engagements and service areas within the Business Processes and Controls Service Line
- Subject Matter Expert in Financial and Operational Reviews including Construction Projects

## Notable other Courses

**Notable other courses at the conference that are clearly helpful to this area include:**

- The one before on how to actively engage your Audit Committee - you need support from the highest level and their authority
- The course that follows on Computer Forensics - such investigation is always part of construction audit work
- Hidden in Plain Sight on the Internet - many relevant things are available via the internet for Construction Audits
- Fraud Risk Assessment - leverage off of it, especially with regard to construction and where things could go wrong, such as scope creep, overcharges and missing critical deadlines

# Management Advisory Approach

- Auditors are the eyes and ears of senior management. Why would you have them show up late to the project?
- Key Concepts
  - The original idea – what is being constructed and why, and who authorized and owns it
    - Planning – “begin with the end in mind” ~ Carnegie, “to fail to plan is a plan to fail” J. Mansfield, “the best laid plans of mice and men, often go awry” shortened from Robert Burns
  - Authorization for Expenditure (AFE)
    - Bids - commonly three or more and can be sealed or not depending on materiality and organizational controls
  - Contracts
    - Reduction of requirements to writing, ambiguity favors the non-writer
    - Lump sum/fixed fee, Time and Materials, Cost Plus

## Management Advisory Approach (cont.)

- Guidance -- Regulations
  - American Institute of Architects (AIA) for standardized contracts and other forms
  - Floor Area Ratios (FAR) for Zoning
  - Occupational Health and Safety Act (OSHA)
  - Department of Transportation (DOT)
  - Environmental Protection Agency (EPA)

## Management Advisory Approach (cont.)

- Supply Chain / Procurement / Purchasing
- Amendments / Change Orders (CO's)
- Labor
- Materials
- Equipment
- Retainage
- Bonding
- Allocations - indirect labor

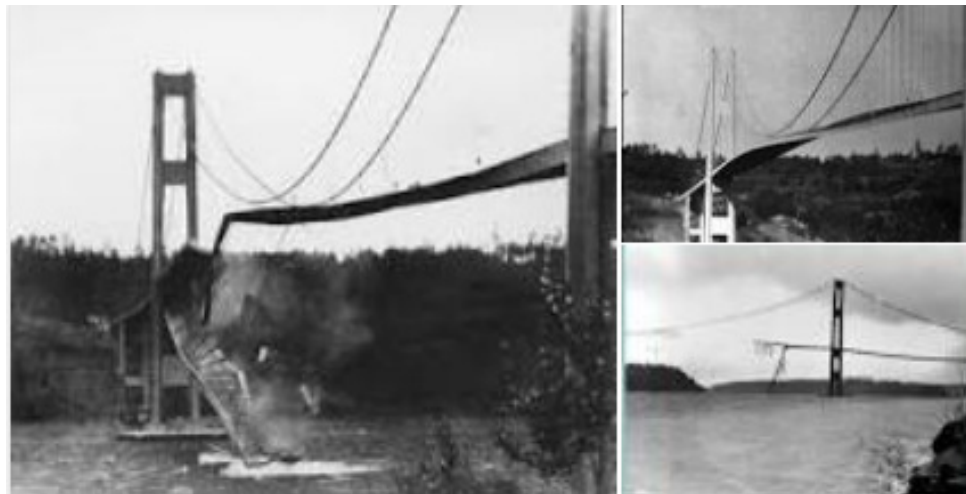


# Risk Management

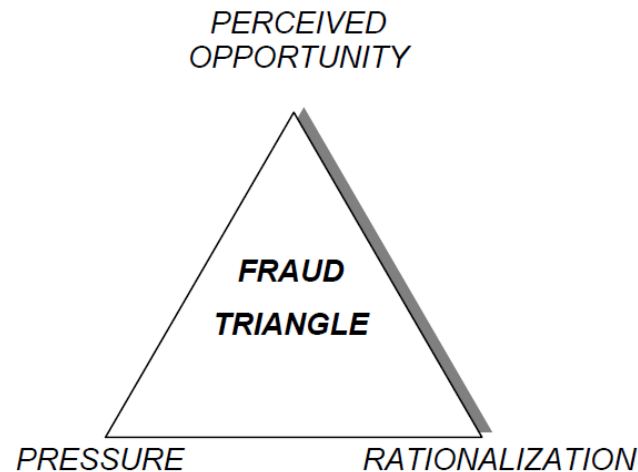
- Objectives, Risks to achieving them, and Controls to mitigate these risks
- Types of Controls: Preventive, Detective, Automated, Manual, SOD, Anti-fraud
- Controls within the context of processes and sub-processes
- Controls within the context of a Control Framework
- Operational versus Financial Controls
- Financial Statement Assertions: Completeness, Existence/Occurrence, Rights/Obligations, Valuation, Presentation and Disclosure (CO, EO, RO, VA, PD)

## What could go wrong?

- Cost overruns
- Failure to complete on time
- “Normal failure” -- Labor issues/strikes, weather, equipment malfunction, material not suitable, i.e., bad batch of concrete or steel
- Black Swans – perfectly designed and built bridge brought down by swaying in the wind – Tacoma, Washington
- Fraud



## A Bit More on Fraud



- The causes of fraud are summarized in an axiom known as the Fraud Triangle, developed from the work of Dr. Donald Cressey. The three elements for the Fraud Triangle are: Pressure or Motive – Opportunity – Rationalization.
- Generally, fraud occurs when someone with a financial need (motive) gains improper access to funds (opportunity) and is able to justify the act to themselves and/or others (rationalization).

*From the Encyclopedia of Fraud (3<sup>rd</sup> Ed.)*

## How to break it down for the audit

- Develop the background using the original idea and known AFEs, contracts, purchasing, accounting, project management, etc.
- Develop Audit Objectives (To determine whether....)
- Develop Audit Program Steps
- Consider Audit Communication and Reporting (....end in mind)

Tools to keep on hand to facilitate the process:

- Standard beginning Work Program
- Standard written methodology
- Standard weekly status report
- Standard final audit report

## Resources and General Concepts

- Gather and review audit resources, such as
  - Training materials
  - Industry guidelines
  - Items your department has on hand
    - Books
    - Periodicals
    - Internet sites already identified as applicable  
(Townsend/Thompson, NACA, ACFE, IIA, AICPA (Construction Audit Guide) COPAS
- Consider the general concepts to pursue
  - Compliance, such as with contract terms, regulations, purchasing policies and procedures, operational and accounting controls
  - Cost Recovery
  - Progress Status, such as % complete and milestones-bonuses/penalties

## Consider the Most Common Findings

- Labor – padding timesheets and charging at higher skill rate
- Materials – substitution of cheaper inferior goods
- Equipment – excess hours for idle equipment on job site
- Retainage – failure to maintain until complete and approved
- Bonding – failure to procure or maintain throughout project
- Cost allocations – incorrect cost spread to your job versus others
- Fraud – over billing, corruption including bribes and kickbacks
- Safety – Inappropriate site access
- Substance Abuse – working under the influence

# Cost Overruns

- “Construction cost overruns have run rampant for decades. Cost containment is the number one goal of developers, corporations, lenders, and public owners alike.”

*Barry LePatner, Author, “Broken Buildings, Busted Budgets: How to Fix America’s Trillion Dollar Construction Industry”*

- A large study in 2002 of public works construction revealed that costs are under estimated in 9 of 10 projects
  - This study covered 20 nations, 5 continents and 70 years of data
  - While the study focused on public projects, the tendency to under estimate is just as likely in private projects
  - Consequently, there is an expectation of cost overruns that allows errors to go unnoticed and contractors to seize the opportunity to overbill

*Journal of the American Planning Association, Vol. 68, No. 3, Summer 2002. American Planning Association, Chicago, IL*

## Cost Overruns (cont.)

What we have seen and how we can help:

- Pipeline system twice the original estimate
- JV plant over eight times the original estimate
- Chemical plant three times the original estimate
- We are able to recover one to three percent in well controlled environments and considerably more where there was poor control
- The real key though is to establish control in the beginning and maintain it throughout the project, because you can never recover all overrun related payments and losses



## Key Financial Challenges

- Errors will occur, whether honest mishap or fraudulent
- Significantly more transactions must be managed, at a faster than normal pace
- Critical internal controls in purchasing or other key processes may be compromised
- Other People's Money (OPM) has less meaning than if viewed as your own
- Understanding the importance of integrity ***and maintaining good supplier relationships*** by sticking to facts and being professional when resolving concerns

# Project Management Control

- Project Plan
  - Be familiar with the latest approved plan -- circumstances change (this doesn't)
    - Projects often begin with incomplete or vague plans
    - Plans are continually updated
    - Additional cost of re-engineering, more materials and labor

## Project Management Control (cont.)

- Contracts
  - Be familiar with the terms that govern the project as that is what you are executing
    - Is there a “not-to-exceed” amount?
    - Are there other active agreements with the same contractor?
    - Do you have audit rights?

## Project Management Control (cont.)

- Spending vs. Plan – Reporting must be adequate to show whether on time and budget -- timely enough to take action
  - Requires good actual spending info broken down like plan
  - Need good up-to-date plan info for comparison – moving target
  - Must have info often enough to take corrective action – plant went from \$200M to \$600M

## Project Management Control (cont.)

- On-site supervisor span of control must be adequate to monitor and guide personnel/contractors
  - Project managers must go on-site to observe whether span of control is reasonable
  - Assess whether supervisors are truly qualified and willing to push back as necessary

## Project Management Control (cont.)

- Supporting documentation must always be maintained to control cost
  - Daily labor & equipment use
  - Materials received
  - Inventory records
  - Weather
  - Delays
  - Injuries

# What You are Looking For

- Assurance that project cost and completion time are on track
- Quick resolution of issues
- Spending with nothing to show for it

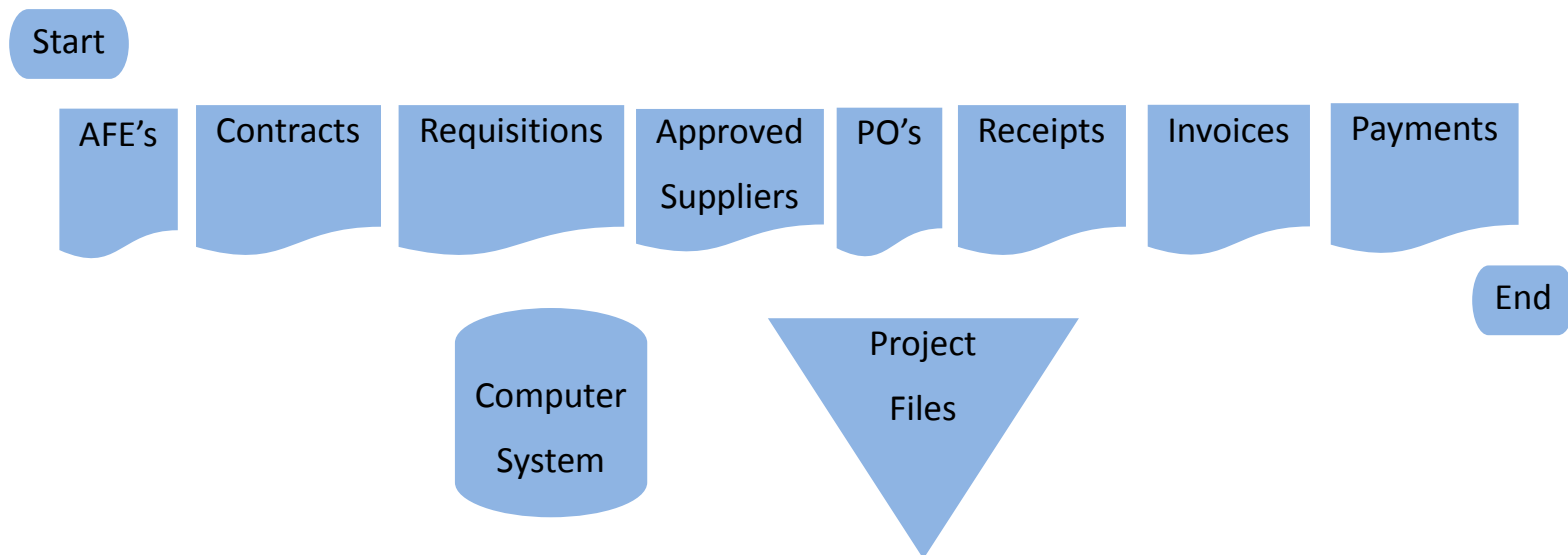
“Momma always said, ...”

*Forest Gump (1994) Tom Hanks*



## What You are Looking For (cont.)

- Stronger controls that prevent or detect future errors/losses
- Improvements to contract and purchasing processes that make it easier to get things done right the first time





# Warning Signs

- Large number of change orders
- Unexpected delays
- Unexplained inventory

*This classic photo has been helping teach about CO's for years*



## Warning Signs

- Costs greater than planned through milestones
- Price increases (labor, equipment, materials, insurance)
- Under utilized equipment on job sites

*Did you rent it or buy it?*

*If you bought it, do you get to keep it?*

*If so, what are you going to do with it?*



## Warning Signs

- Unusually close association between company employees/vendors/contactors/subcontractors

*In situations where fraud was the reason for cost overruns, 25% of survey respondents experienced losses **over \$1,000,000!***

*2008 Report to the Nation on Occupational Fraud and Abuse, The Association of Certified Fraud Examiners.*



“let me show you my shocked face”

E-Trade

# Common Frauds

## **Fraud is deceit – Merriam-Webster Dictionary**

- Charging for excess hours
  - padding timesheets
  - setting up ghost employees
- Using higher rates than per contract rate sheet
- Charging for skilled versus unskilled labor
- Doing personal things on project time
  - Calls
  - Errands
  - other including own or supervisor projects
- Charging travel expense per diem where not applicable

## Common Frauds (cont.)

- Billing for equipment on-site that is seldom or never used or otherwise unnecessary
- Using lower quality materials than per contract
- Allowing vendors to over deliver materials
- Related Party transactions
  - Working inflated hours at inflated rate
  - Vendor charging higher prices and delivering excess quantity or lower quality
  - Subcontractor concern all around
- Outright corrupt activities including bid rigging and kickbacks are all too common

## Why Errors & Frauds Occur

- To err is human – and now we have computers and can really crank this up; inputs are so important !!! – think six sigma
- Financial Pressure – there is need and greed
- *Opportunity – controls limit/block/remove temptation*
- Rationalization – appeal to morals, per a Coalition Against Insurance Fraud (CAIF) survey<sup>1</sup>, 63% of respondents refrain because of “moral character”, 15% did not want to get caught, and 7% did not want to be prosecuted.
- Slippage – Sometimes it is just hard to hold it all together; controls become lax, paperwork gets behind, etc.
- OPM – people just cannot treat the money as if spending their own, and taking the same care – not budget conscious

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<sup>1</sup>Encyclopedia of Fraud (3<sup>rd</sup> Ed.) p. 89

# Controlling Opportunity

- Opportunity is controllable
  - Ensure processes and procedures include controls to prevent or detect errors or fraud
  - The most common and strongest control is segregation of duties (SOD's)
    - Start with cash and transportable assets and work your way out “auditing around the cash register”
  - Approval and matching controls really keep cash from going for something you do not need
  - Educate personnel to be alert, aware, pay attention
  - Promote openness through proper channels
  - Employees – do background checks
  - Only use approved Vendors and Contractors
  - Keep an eye out for “family and friends”
  - OPM – Remember you are also a stakeholder

# Summary

- Overruns in construction are epidemic
- Fraud is likely and driven by financial need, compounded by opportunity and consummated by rationalization
- Opportunity is controllable – segregation of duties is strongest and prevention is preferable but detection may work the best in certain situations
  - Deterrence is also effective per the most recent Council of Sponsoring Organizations (COSO) report on Fraudulent Financial Reporting: 1998-2007 p. 45, “the consequences of fraud are severe for individuals and companies including fines...disgorgement...criminal prosecution...bankruptcy...”
- Keep an eye out for “family and friends”
- OPM – NOT. You are in on the investment for a return for your organization, which includes your job and your pay check



# Conclusion

- About rationalization
  - Attitude towards OPM goes a long way toward fixing this concern
  - It happens; every time we make choices
  - Make thoughtful choices – “I just wasn’t thinking clearly”
  - The truth has a certain ring – choosing right = green light
  - Tone at the Top -- Each supervisory level up through the CEO and BOD can reduce the odds of fraud occurring by paying attention and removing opportunity and thus temptation through SOD and other controls
- Details – we said all the above to say this, “the devil is still in the details”
  - Projects can be off from the start if plans and engineering fall short
  - Lack of tracking detail including timeliness of information will throw a project off during execution
  - Lack of detailed finishing touches and testing can defeat a project at the end
  - Welcome audits from the beginning to the end – that is as hard to feed as it is to swallow, but it is good for the health of the project
- Questions?

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