PROPRIETARY PROPERTY OF ROBERT C. BALLEW

DO NOT DISCLOSE

Accident Precursors And Their Identification

By Means of BBA / AATAT's "Real Time" Statistical Analysis And Systemic Feedback

RECOMMENDATION: *Organizations involved in operations with significant safety and reliability concerns should evaluate the opportunities for risk reduction through precursor analysis programs.*

A complied report and observations by:

Bob Ballew & Associates, L.L.C.
d.b.a. – Advanced Approach Training And Testing

Bob Ballew, C.P.M. ret.
W: 817 244-3647
C: 817 929-8758

The Accident Precursors Project

Overview and Recommendations

The National Academy of Engineering (NAE) was founded in 1964 as a sister academy to the National Academy of Sciences (NAS) to provide engineering leadership in service to the nation. The NAE operates under the charter granted by Congress to the NAS and is a private, independent, nonprofit institution that provides advice to the federal government, and conducts independent studies examining some of the most important contemporary topics in engineering and technology. NAE members are the nation's premier engineers, who are elected by their peers for their seminal contributions to engineering. The NAE is devoting significant energy to ensuring that the engineering workforce of the future will be strong, dynamic, and diverse, and will welcome and foster the talents of America's best and brightest.

In 2003, the National Academy of Engineering Program Office undertook the **Accident Precursors Project** to examine the complex issue of accident precursor analysis and management.

This seven-month project was designed to document and promote industrial and academic approaches to detecting, analyzing, and benefiting from accident precursors, as well as to understand public-sector and private-sector roles in using precursor information. The committee examined an array of approaches for benefiting from precursor information and discussed these approaches in a workshop held on July 17 and 18, 2003, in Washington, D.C.

Best Practices Implementations

In the pursuit of Best Practices, Bob Ballew & Associates, L.L.C. has adopted the results of the National Academy of Engineering Program Office's Accident Precursors Project's Final Report and integrated some of the recommendations into our aggregate and proprietary Computer Based Training And Testing system.

The following pages describe how we can help increase your appeal to investors, the general public and your employees.

Please read the attached report. It is the official record of the project and the workshop with additional yellow highlights our management believes to be "on point" for your consideration and implementation.

Attention: Safety And Operations Management

Accident Precursors Identification By Means of Statistical Analysis

What if we could help your company and your Risk Managers immediately identify 30% of your locomotive engineers, switchmen, conductors and yardmasters that could not answer the following question about rolling hazardous materials correctly.

What if we could identify your "Top 10 Most Missed Questions" on your recurring recertification tests? What about "Top 100 Most Missed Questions"?

Juries, insurance companies and Risk Managers might and probably would favorably reward your affirmative actions to identify and correct the problems.

Question # 999 Statistics:

HAZARDOUS MATERIALS - This question of this test is open-book. You may use your company issued HAZMAT BOOKLET to answer this question. The train diagrammed below does not comply with the Placement in the Train Chart. Which switching move listed below would you make to bring the train into compliance?

Offered 349 **times**

Correct 233 **times or** 66%

Partially correct 233 **times or** 66%

Unanswered 16 **times or** 4%

Frequency	Choice	Percent
233	Move the fourth car (Pipe) behind the fifth car (Box).	67%
90	There are no switching moves that can be made to make the train comply with the Placement in Train Chart.	26%
10	Move the first car (Flat car) behind the third car (POISON).	3%

Show all responses.

This theoretical graphic indicates an industrial and safety knowledge problem that certainly could be considered an ongoing accident precursor indication.

Attention: Risk Management And Legal Department

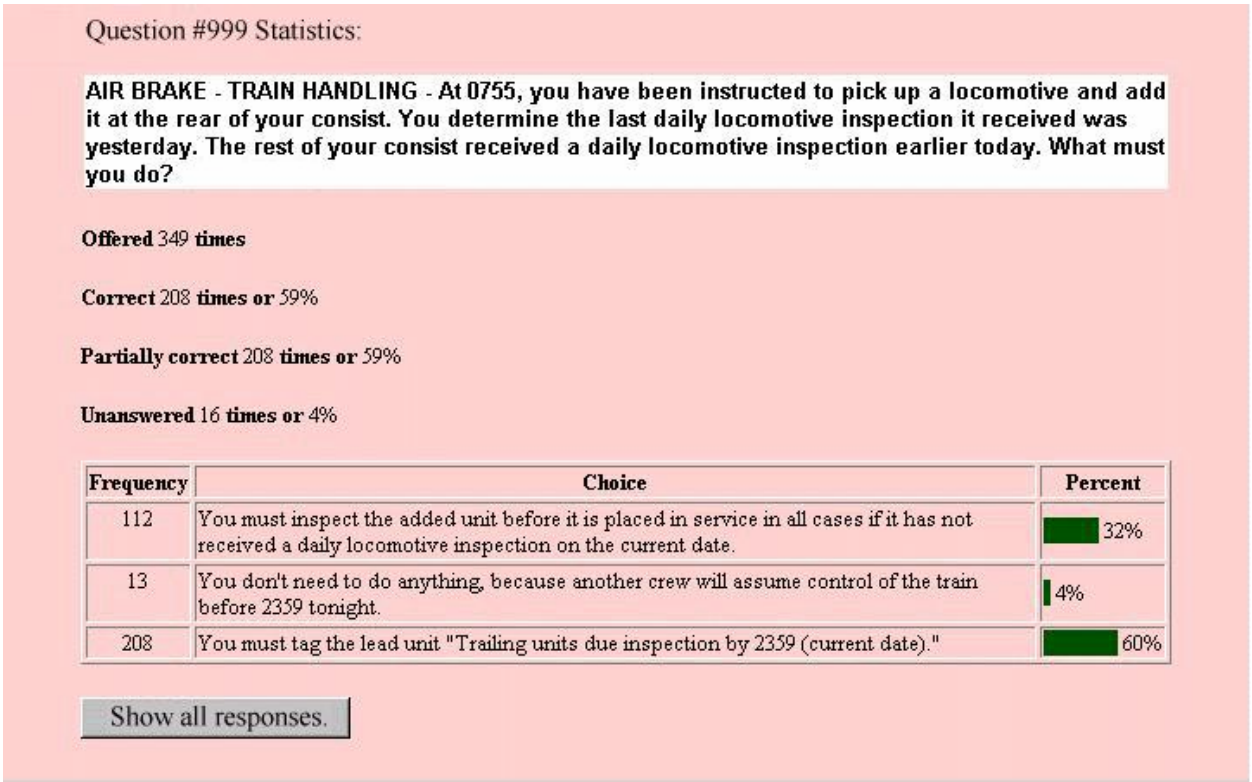
Mitigate Your Liability And Reduce Court Awards?

Just do it!

(1) Ask your Risk Management Representative what the liabilities are after you (1) discover an incorrect answer being taught or scored as correct, (2)but take little or no immediate action to correct it and distribute the corrected information.

(2) Also, ask your Legal Representative about the value of quickly identifying heavily missed answers under both (1) the Due Diligence theory of law and (2) the recent litigation case law results and financial catastrophes pertaining to the theories of ***"in the exercise of ordinary care …knew or easily could have known / should have known."***

A theoretical example (locomotive engineer recertification tests) might go like this:



Question #999 Statistics:

AIR BRAKE - TRAIN HANDLING - At 0755, you have been instructed to pick up a locomotive and add it at the rear of your consist. You determine the last daily locomotive inspection it received was yesterday. The rest of your consist received a daily locomotive inspection earlier today. What must you do?

Offered 349 **times**

Correct 208 **times or** 59%

Partially correct 208 **times or** 59%

Unanswered 16 **times or** 4%

Frequency	Choice	Percent
112	You must inspect the added unit before it is placed in service in all cases if it has not received a daily locomotive inspection on the current date.	32%
13	You don't need to do anything, because another crew will assume control of the train before 2359 tonight.	4%
208	You must tag the lead unit "Trailing units due inspection by 2359 (current date)."	60%

Show all responses.

Finally, corporate criminal negligence might be a litigation and FRA sanction consideration by various parties if your company could have taken action easily but chose not to. Could you exercise ordinary care and use a pencil and paper log to accumulate all or the most frequently missed questions on all current tests?

Attention: Personnel And Executives Departments

Reduce Costs And Offset Baby-Boomer Retirements?

More direct pressure will be placed on many areas of corporate employment, cost and efficiencies as the Baby-Boomers retire.

Retirements, increased travel costs and skeleton crew assignments lend themselves to our system in a recurring and cost-effective Life Cycle Cost Evaluation (LCCE) and Life Cycle Cost Analysis (LCCA).

Our proprietary, sole-source, aggregate training and testing system is designed as an adjunct to your existing certification and compliance systems, not a competitor or replacement. It is specifically efficient and on point for employees deployed or permanently assigned to remote or geographically dispersed locations.

The more it is used for an increasing number of employees, the more cost savings are realized.

Many U.S. federal laws, statutes and regulations require the employment of either a (1) Life Cycle Cost Evaluations or (2) Life Cycle Cost Analysis when buying goods or services with taxpayer funds. A simple LCCE (Life Cycle Cost Evaluation) is used if one competing item or system is so clearly and decidedly more cost- or life-span efficient. If there is no obvious distinction, then a LCCF (Life Cycle Cost Analysis) is required.

An achievable goal of leveraging the increasing computer literacy of the new generation of employees manifests itself in economies of scale with computer technologies.

EXECUTIVE SUMMARY

Recurring savings are achieved when a continually increasing quantity of employees (1) choose to study for advancement and required recertification exams on their own time at their home and (2) actually study and take the required tests at home or in front of a proctor who is not required to score the tests and then review the missed questions with the employees. These functions become automated while freeing up the instructors and proctors for more specific and timely tasks. Additional savings are achieved when short-crews, travel, lodging, meals and miscellaneous corporate business expenses are eliminated. These are the accumulated cost savings and advantages of allowing Computer Based Training and Testing to do what it does best. Global and systemic accident precursor information is accumulated in real time by means of our proprietary and aggregate computer based training and testing. If you do not believe it, see the case study on the next page.

August 2008 CBT Results

(Records on file at AATAT.)

August 11, 2008

Hello _____,

I was performing some statistical analysis for some of our railroad customers tonight and it identified a series of events I thought you should know about. I had the good fortune to run across the great email notification results of one of your employee's GCOR study and testing efforts. After some basic calculations, it was quite striking. I won't disclose your employee's name for Privacy reasons but I have attached a more detailed report for your information and use. Your employee took our online CBT GCOR Practice Test six times on one day, starting with a failing score of 80 and, five days later, took it again. The employee then took the GCOR Final Test and passed it with a high score of 96. That is quite a change for two days of study for a "New Hire." Please congratulate your employee for us. Any comments?