THE

BASICS OF

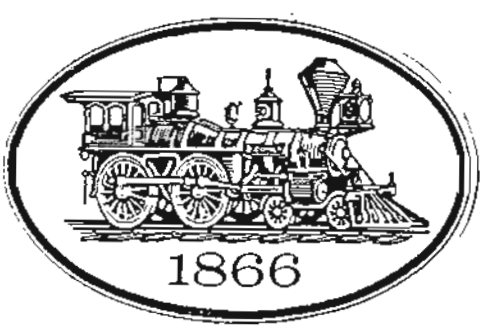
BOILER AND MACHINERY COVERAGE

RIMS '93 CONFERENCE

ORLANDO, FLORIDA

TUESDAY, APRIL 27, 1993

2:00 PM - 4:00 PM



PROGRAM AGENDA

RIMS'93 CONFERENCE
Orlando, Florida

Tuesday, April 27, 1993
2:00 p.m. - 4:00 p.m.

Panel Session: "The Basics of Boiler and Machinery Coverage"
(In 103)

Moderator:

Edward J. Moran
Director, Corporate Risk
Ball Corporation
Muncie, Indiana

OPENING REMARKS - "SETTING THE STAGE"
(A discussion of how Risk Management is changing)

Edward J. Moran

INTRODUCTION OF PANELISTS

Edward J. Moran

THE CASE FOR MACHINERY BREAKDOWN INSURANCE

Nolan Russell
Director, National Accounts
The Hartford Steam Boiler Inspection and Insurance Company
Hartford, Connecticut

NEW DIRECTIONS IN THE MACHINERY BREAKDOWN MARKET

Nolan Russell

ENGINEERING/INSPECTION SERVICES: THE KEY TO LOSS CONTROL
(The application of practical and profitable loss prevention technologies.)

Jill Raye Howes
Manager, Boiler/Machinery Engineering
The Hartford Steam Boiler Inspection and Insurance Company
Chicago Branch
Lisle, Illinois

DISCUSSION (Questions)

SUMMARY and ADJOURNMENT

REMOTE FIELD EDDY CURRENT
Case Study

Problem: A Midwestern oil refinery's boiler was plagued by random outages.

Cause: High-pressure steam escaping from failed tubes cut into healthy adjacent tubes like a knife. Refinery production dropped as the outages forced costly downtime. A domino effect ensued. Company officials feared replacement of entire tube sections – an estimated cost between $150,000 and $250,000 dollars.

Remedy: RFEC specialists were able to test the tubes and pinpoint which needed repair or replacement. By replacing some tubes and plugging others, the boiler was returned to reliable production.

SAVINGS:

$150,000 in direct expense and an estimated $500,000 in prevented unscheduled outages.

VIBRATION MONITORING
Case Study

Problem: Vibration monitoring was in use at a hospital where an 800HP centrifugal air compressor was operating in a small room. Because of the excess noise associated with operating the machinery within the confined space, hearing or feeling vibration was difficult.

Cause: Vibration monitoring detected misalignment of the motor pinion teeth and gear drive.

Remedy: Although the machine was not scheduled for an internal inspection for three years, the hospital agreed to inspect the gear box. Since it was winter, with reduced demand for air conditioning, the work could be accomplished without interrupting the hospital schedule.

When the gear box was disassembled, the causes of the vibration were found and corrected. Had the problem gone undetected, the compressor, motor, and gear could have all failed.

SAVINGS:

The cost to repair: $30,000 dollars. This does not include the costs associated with business interruption had it failed during the warmer months.

MOTOR TESTING
Case Study I

Problem: Using motor testing technology, 11 of 37 motors tested at an IPP steam plant in the Northeast were found to be in trouble. Another four were in critical condition. One of the critical motors was an 800 HP boiler feed pump.

Cause: Further testing revealed a poor splice in the motor's junction box, which had already melted most of the electrical tape.

Remedy: The junction was respliced, and the motor was saved – a simple, inexpensive repair compared to the replacement and downtime costs.

SAVINGS:

Motor Replacement Cost: $25,000

Plus Labor and Unscheduled Downtime

MOTOR TESTING
Case Study II

Problem: Using motor testing technology, 6 of 25 motors were in trouble and three were in critical condition, including a 50-year-old 200 hp fan.

Cause: Testing revealed that the fan's bearings were worn.

Remedy: The bearings were replaced, saving the motor from complete failure.

SAVINGS:

Motor Replacement Cost: $8,000

Plus 50% Production Loss

TRANSFORMER OIL TESTING
Case Study

Problem: High concentrations of combustible gases were found in a 1.25 MVA transformer used to supply power to a production area and feed a group of motor control centers.

Cause: Expert analysis indicated a likelihood that there was an unintentional core ground.

Remedy: Arrangements were made to rent a spare transformer, while the original was removed from service during a routine maintenance outage. Upon internal inspections the prediction was confirmed.

Had the condition gone unheeded, the transformer would have failed catastrophically. The cost to the plant would have been $80,000 to replace the transformer, with a 7 day business interruption. A lesser damaging failure, requiring only a rewind, would have cost $40,000 and still required at least 7 days of downtime.

SAVINGS:

The averted failure saved the plant a potential $40,000-$80,000 in direct damage loss, with 7 days of business interruption.*

Average Daily Value = $5,200

7 x Average Daily Value = $182,000*