From OHSA Citation to Ergo Cup Celebration: The BIW Journey

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General Dynamics, Bath Iron Works

Applied Ergonomics Conference Webinar
Bath Iron Works

- Designer & Builder of Navy Surface Combatants
  - Established in 1884
    - Owned, General Dynamics
  - 6,500 employees
  - 4 Unions
  - 29 Trade Classifications
What We Do
Challenges

- Hazardous Environment
- Physically Demanding Work
- Challenging Work Environment
How it all began...

OSHA Site Specific Targeting Program

- 2007 On-site inspection
  - IH, Recordkeeping, Ergo
High # Injuries from Grinding

Carpal Tunnel Syndrome

Compressed nerve

Carpal ligament

Median nerve
Mitigate OSHA Hazards

Follow DMAIC Process

1. **Define** - Injuries, OSHA citation
2. **Measure** – Risk Assessment
Tip #1: Gaining Trust

… Tank Story

Employee Asks You to Try Their Job – DO IT!
3. Analyze

- 33 Potential Solutions
- Impact Analysis
- Prioritization Matrix

### Mitigate OSHA Hazards

#### 3. Analyze

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<th>Solutions</th>
<th>Hands/Wrist</th>
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**Legend:**
- *Low* = ≤ 20%
- *Med* = 20-30%
- *High Med* = 30-40%
- *High* = >40%
Mitigate OSHA Hazards

4. Improve

4 Categories

1. Administrative/Work Practice (5)
2. Hand Tools (3)
3. Custom Equipment (4)
4. Long Term Grinding Reduction

Established Mfg. Ergo Steering Committee with 4 sub-teams (ORG)
Mitigate OSHA Hazards

Eliminated High Vibration Tools

- 65% less vibration
- 2-3x removal rate
- 1/3 weight

- 70-90% less vibration
- 75% less vibration
- 20% more removal
Mitigate OSHA Hazards

Custom Developed Tools

95% Risk Reduction
Eliminates force, rep. motion, vibration
50% Improvement Productivity
50% Less Consumables
Mitigating OSHA Hazards

5. Control
Verify Results and Impact

65% Risk Reduction
50% Time Savings
Welcome to the Shipyard,
Ergo Boy
Tip #2: Don’t Assume

It’s Not Heavy..........
It Just Needs Handles!

Spend Time to Understand Culture, Risks and People
Participatory Program

SEE, Solve, Share
Engage & Empower

3 Tier Process

I. Self,
II. Trained,
III. Expert
In the Beginning ..........

- Simple Risk Tool
  - 13 Yes/No questions
  - Clever use of “SEA”
- Feedback
  - Too Complicated
  - Spelled SEA wrong
Tip 3: Do Not Give Up

... After Much Reflection
Learning to “SEE” (Shipyard Ergo Evaluation)
SEE – Solve

GO GREEN
WORK IN YOUR POWER ZONE

POWER ZONE
Low Risk
Moderate Risk
Higher Risk

GENERAL DYNAMICS
Bath Iron Works

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Solve Problems by Engaging Employees

Ergo Cup Competition

- Recognition
- Integrate in PII initiatives
- Safety/Ergo Committees
  - Quarterly Winners
  - Grand Champion - Attends AEC

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Ergo Cup Winners

Excellence Award for “Cost Savings”

Team-Driven Workplace Solution Excellence Award, “Ergo Risk Reduction”
Conclusion

Science

Practical