Raytheon ... Who We Are

We are ... 
- A Customer Focused Company that places the highest value on People, Integrity, Commitment and Excellence
- 2003 Sales: $18.1 billion
- More than 78,000 employees worldwide
- Headquarters: Waltham, Massachusetts

Our Vision
- Be the most admired defense and aerospace systems supplier through world-class people and technology

Working as One Company Focused on the Customer

Raytheon ... Who We Serve

Our Customers are men and women in uniform, pilots and their passengers, and our partners in government agencies and industries.

Superior Customer Solutions

Raytheon Business Headquarters

78,000 employees; 2003 Revenue: $18.1B

About Raytheon

2003 ERGO accounted for 27% of incurred cost

24 17 6 6 2 1

% Injuries

Raytheon’s diverse workforce
Identify Sites with greatest need
- Lagging Indicators: 2003-2004 Incidence & Severity Trends
- Leading Indicators: Process Improvements & Program Maturity

Development of Resources
- Foster internal expertise
  - Facilitate Site/Business Unit Program Review
  - Lead Management Training, Site Train-Trainer Programs
  - Conduct Site Hazard Assessment

Deploy Resources to Sites
- Business Unit Program Reviews
  - Emphasis on implementation rather than data collection
  - Emphasis on sustainability
  - Emphasis on budget and planning rather than ‘fix it today’

Ergonomics Training
- Employee Involvement at all levels
  - Shared responsibility, self-assessment, early reporting

Equipment Design/Selection
- Upgrade to adjustable equipment
  - Tool and Workstation selection criteria, long term ergonomics budget planning.

Workstation Design/Adjustability
- Increase requirements for adjustability
  - Workstation design criteria, long term ergonomics budget planning.
Eliminate awkward lifting

- Encourage and reward employees participation
  - Six Sigma, Manual Handling policies/procedures, employee self-assessment, audit for hazardous conditions

Before
- Old Method

After
- New Method

Eliminate heavy lifting

- Encourage and reward employee participation
  - Six Sigma, Manual Handling policies/procedures, employee self-assessment, audit for hazardous conditions

Before
- Weight of fixtures reduced by 2/3

After

Eliminate lifting whenever possible

- Encourage and reward employees participation
  - Six Sigma, Manual Handling policies/procedures, employee self-assessment, audit for hazardous conditions

Before
- Unnecessary lifting of tanks eliminated

After

Prioritized approach

- Involve employees in selection process
  - Establish priorities for change based on employee concerns

Before

After

Attention to detail

- Reduce repetitive motion
  - Hardware with reduced threading requires fewer turns, less rotation of the wrist.

Before

After

www.bakermanufacturing.com

www.carrlane.com

Attention to detail

- Reduce repetitive motion
  - Inaccessible hardware replaces with easily retrievable knobs

Before

After
**Workstation Design**

- Improved workstation design
  - Inaccessible workstation replaced with adjustable tilt, extended eyepieces, lowered controls

**Workstation Design**

- Improved workstation design
  - Inaccessible workstation replaced with adjustable sit/stand table

**Workstation Design**

- Improved workstation design
  - Eliminate sharp edges and contact stress from corners

**Improve Fixed Work Heights**

- Improved workstation design
  - Pallet stands and raised equipment minimize bending, stooping

**Team Approach**

- Improved methods
  - Identify heavy lifting conditions and eliminate hazardous conditions

**Reduced Cumulative Fatigue**

- Decreased potential for hand static stress/fatigue
  - Eliminate unnecessary weight of standard hoses and coupling hardware
Reduced Cumulative Fatigue

- Decreased potential for hand static stress/fatigue
  Eliminate unnecessary exertions due to pushing, pulling, turning

Design-in Ergonomics

- Eliminate undesirable lifts
  Establish design criteria to eliminate heavy lifting

Component design method calls
For top and side machining

Method for using different type of fastener, eliminating side machining, is being evaluated

Fixture for top machining, 2-3 lbs.
Fixture for side machining, 50-60 lbs.

Known benefits of Ergonomics

- employee comfort and well being
- employee involvement
-Increased communication
- Innovative problem-solving, continuous improvement

Cost Effective Solutions

Madina Joshi, Certified Professional Ergonomist
Corporate Ergonomist

Thank You!