Until Automation Does It All
Apply Good Ergonomics to Protect Your Workers Now

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Chairman

EASE Council
17 Member Companies
60 Industries/technologies
Ergonomic Resources and Tools
Health and safety News
Case Studies
Checklists and Technical Support
White Papers
Speakers and Presentation Materials
Workshops and Outreach to the user
Products available - solutions to material handling problems

Ergonomic research services
Wheels
Casters
Jib Cranes
Full power stackers
Positioners (automatic and manual)
Manipulators
Balancers
Work station cranes
Pneumatic hoists
Electric hoists
Tilters (portable & fixed)
Manual turntables
Bridge cranes
Stainless steel gondolas
Work positioners
Below hook slings
Adjustable height work benches

Vacuum lifts (portable & fixed)
Vacuum positioners
Pallet invertor/rotators
Industrial platform trucks & carts
Modular cranes
Pillar & wall mounted cranes
Carton flow rack
Intelligent assist devices
Conveyance systems
Manual stackers
Transfer cars
Pillar mounted cranes
Personnel lifts
Work stations
Two wheel hand trucks
Powered & manual hand pallet trucks
Industrial magnets
Scissors lifts
Until Automation Does It All

.... Apply Good Ergonomics to Protect Your Workers Now
A Long, Long, Long Time Ago…

• **Circa 1982-83**, Modern Materials Handling published a year long editorial series…titled “Factory of The Future”

...imminent transformation of manufacturing to “lights-out” factories

...operating around the clock with no people
Still Driving a Car….

• Worried that your investment will soon be obsolete in the looming world of autonomous vehicles?

• 5 to 7 year leases are driving current record demand …with no decline in sight

• Yet studies, reports and editorials describe an immediate driverless highway system.

• 90% of autonomous might be done…The final 10% is years away.
Automation might not be for everyone... and the decision to automate is not easy

Expensive....
Complexity....
Inflexible....
Resources....
Maintenance....
Return on Investment....

POWERED BY POSSIBILITIES.
EASE Encourages Automation

<table>
<thead>
<tr>
<th>It contributes to:</th>
<th>It solves:</th>
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<tbody>
<tr>
<td>• Efficiency</td>
<td>• Safety</td>
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<td>• Capacity</td>
<td>• Productivity</td>
</tr>
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<td>• Consistency</td>
<td>• Quality</td>
</tr>
<tr>
<td>• Predictability</td>
<td>• Worker Issues</td>
</tr>
<tr>
<td></td>
<td>• Better than ergonomics</td>
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A new eFulfillment DC

- 2.1 million square feet - operating 24/7
- Capacity to ship 150,000 orders per day
- “We tested every technology out there!” Facility Mgr.
- Planned Headcount is 3000 (6K hands & 6K feet)
- System selected because it provided the best ROI
What Would Happen If…

....a robot on an AGV was designed to pick orders in a classic warehouse with aisles of pick-pallets lined up under a multitiered rack system?

What would happen for a worker on a walkie if he or she were provided with the same easier access that the automation solution required?
What Will Happen After…

• the same **work cell + process** were designed for the robotic operation…were assigned to an average worker?

• Time and time again…
  - Productivity, quality, capacity will increase
  - Safety and well being will increase
  - Job satisfaction and engagement will increase

• Not a lights-out, 24/7 gain…but a lot more than doing nothing!
Workforce Crisis

- Most prevalent critical issue is the ever diminishing pool of available workers

- Most often proposed solution “Automation”

- Most often heard answer to “When?”

- .... “Good question!”
Hey! Hey! Hey! we’re gonna automate

UGH!

Boss said that 10 years ago
For those companies that can’t make the leap to automate they should ............ DO SOMETHING!

EASE Can Show You How
Rob Jorden
VP of Engineering
Blickle Wheels & Casters USA
Pallets

MANUAL LOADING AND UNLOADING OF PALLETS CONTINUES TO BE ONE OF THE MOST COMMON AND MOST INJURY PRONE TASKS IN INDUSTRY TODAY.
The problem.....

....is manually handling, loading & unloading pallets.
Opening up the pick slots
Spread pallets out……

...allowing access to all the goods on the pallet
Load positioners automatically hold the top layer of goods in the 30” to 40” ergonomic window. Turntables eliminate having to walk around.
As much as 40% of the time required unloading a pallet, can be spent walking around it!
Vacuum tube lifters eliminate back bending – serious issues for anyone and for the older worker or obese, a VERY serious issue.
Handling heavier cases is made easy for all workers.

The productivity gains can be enormous often freeing up workers for other tasks.
Pallet positioner adapted to an an walkie rider

Notice the top layer is about at the same elevation
Pallet positioner adapted to an order picker
Manual Turntables
Pallet rotators make quick work exchanging pallets

Damaged product on the bottom of a pallet can be easily removed
Vacuum lifters are efficient and very useful in areas when sorting cartons or case goods require multiple pick and place tasks.
Vacuum lifters are also highly efficient for handling bags and pails.
Stackers are highly maneuverable in tight quarters and can eliminate the manual lifting.
These lightweight aluminum stackers are highly maneuverable...

....they provide easy access to loads to eliminate reaching

...and increase efficiency and productivity!
Powered two wheel hand trucks
Skid lifters

Manual and powered

Careful only for skids or open bottom pallets
Manufacturing and assembly operations are moving to towables.
Lifts and positioners to position the carts in the work cell
Tilters or turntables......

...to ergonomically position the carts
Freestanding workstation cranes

Effortless and precise control
Articulating hanger assemblies
Enhanced structure stability – no cross bracing
Single & Double girder cranes

Increased efficiency with handling heavy loads in tight work areas
Monorail Systems and Aluminum Modular cranes
Pillar & Wall Mount Jib cranes
Properly placed supplies and tools eliminates walking around and promotes a highly efficient work space.

These are powered adjustable height benches.
More than half the benches sold today are powered
Containers

Manual loading and unloading of wire baskets, containers, Gaylords and totes leads to incidents of upper & lower back injuries

All shapes & sizes
Understanding the issues
Spring loaded positioners to elevate the goods.

Speeds picking the parts and reduces the bending/reach issues.
High hinge tilters are ideal for gaining access to the bottom and back of containers.
Sometimes people need to work in containers.

Position is everything in ergonomics.
Carts & Platform Trucks
Using the right one for the task helps the worker be more efficient.
Rule #1 – don’t overload a cart!
Max. push force

Starting it moving: 45 lbs

Keeping it moving: 20 lbs

Vertical handles 18-20” apart or horizontal handle at 37”

Load does not block line of sight

Max. load 500 lbs.

Lightweight items only

Good traction (Coefficient of Friction: 0.6+)

Swivel: 8”

Non-swivel: >14”

Max. speed Walking pace 3 ft./sec (2 mph)

Sealed precision bearings or well-maintained roller bearings

POWERED BY POSSIBILITIES.
Wheel and bearing choice will have a huge impact on the rolling friction
Examples of good applications

Examples of poor applications
Some solutions not only solve the back problem, they can eliminate wasted motion and increase efficiency.

Battery powered scissors lift cart
Self leveling carts bring the bottom half of the load...

....into the correct operating range which eliminates bending and reduces reaching
Roller conveyor can be used in existing rack and shelving

Greatly reducing the stress on storing or retrieving heavy cases and cartons.
Carton Flow - Retrofit Application
Copy available on back table

www.mhi.org/EASE
Ergonomic Guidelines for Manual Material Handling

Free download

Ergonomic Guidelines for Manual Material Handling

Copy available on back table
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