

## MANUAL MATERIALS HANDLING WORKSHOP: BUSINESS-TO-BUSINESS

This first Manual Materials Handling (MMH) Workshop was jointly sponsored by the Ergonomic Assist Systems & Equipment (EASE), a non-profit organization and research council of the Material Handling Industry of America (MHIA) and by the Wholesale and Retail Trade (WRT) sector of the National Institute for Occupational Safety and Health (NIOSH). NIOSH staff took the lead in recruiting the RWW attendees. Similarly, EASE provided the leadership and connections to draw in the MH experts.

The MH Workshop was held at the Georgia World Congress Center, Atlanta, in conjunction with the MODEX 2012 EXPO show featuring over 500 of the leading providers of MH solutions. The objective of the workshop was to prevent MH injuries by reducing or eliminating the MH hazards. To accomplish this objective, we adopted a "business-to-business model." The model was based on a simple concept of introducing those businesses that were seeking solutions to those businesses that provided solutions. The solution providers were twelve MH experts from companies that design and manufacturing various types of material handling equipment. The solution seekers were loss control experts from a variety of RWW businesses seeking new approaches and/or technology.



# WORKSHOP PROGRAM

## AGENDA

Day one focused on the MH challenges posed by the warehouse/distribution centers, in which trucks are manually loaded and unloaded by store employees. Day-two examined the challenges found in stocking and maintaining the retail displays. Each day's session began with a presentation by a RWW representative who showed photographs of various manual material handling tasks, which included combinations of lifting, lowering, reaching, carrying, pushing, and pulling.

The challenge for the MH experts in attendance was to present design suggestions or solutions that would reduce the repetitive and forceful motions. The ensuing discussions revealed some of the key provisions and details about size, costs, and feasibility of various mechanical assist devices. The afternoon sessions were held on the MODEX Expo floor where more than 500 national and international MH companies were exhibiting their individual solutions to a range and variety of MH problems. The afternoon sessions allowed the RWW attendees to meet individually with the MH experts and also witness the technology on display.

### Attendees:

Of the final 54 registrants, 17 were safety/loss prevention representatives from the RWW industries, followed by the material handling industry with 14, and 17 attendees were listed as practitioners, loss insurers NIOSH provided four observers and a co-chair for the event. The other co-chair was from EASE. The retail food and beverage industry provided the largest number of attendees, followed by the home improvement businesses, and mass merchandisers/ supercenters attendees. The workshop format encouraged open discussion and interaction among the attendees.



## WORKSHOP OUTCOME

As noted, a main goal of the RWW attendees was to find practical and cost-effective solutions for improving the MH efficiency and reducing injuries associated with MH jobs. Similarly, a main goal of the MH experts was to share examples of their technology and explain how it could be used in the RWW businesses. What did happen may be even more important. There was a gradual realization by both the MH experts and the RWW attendees that there were no easy fixes.

As a result, this MMH Workshop is viewed as first step in finding practical and cost effective solutions for the RWW industries; likewise, it is a first effort for the MH industry to embrace the challenges of designing new MH devices for a very cost-conscious industry. Even the smallest savings can have a significant impact. As an example, the average inventory of a typical grocery store is about 35-thousand items and that stock is replaced every 20-30 days; hence, any MH device that would cut even a few seconds from the handling of each unit or container could within a year or less easily pay for itself in reduce labor costs and improved efficiency.



**SUSTAINABILITY** The sustainability of any partnership rests on fulfilling mutual needs.

Specifically, the MH manufacturers recognize the potential for expanding their customer base by providing the practical and cost-effective MH solutions to the RWW industries. Similarly, the RWW industries recognize the need to improve the efficiency of their supply chains by incorporating practical and cost-effective material handling solutions, and thereby reducing lost time from injuries and improving customer service, which supports growth and profits.

The prospects for continuing the workshop model has already been assured as RWW businesses and the MH industries continue the dialogs that were initiated at this first joint MMH Workshop. Although the phrase “win- win” is often overused, the phrase is most applicable here because each of the parties understand what will be gained by participating in strong collaborative relationships that seek to develop improved material handling-assist devices. This is the essence of the Prevention through Design (PtD) programs promoted by industrial engineers.

**Why this Workshop:** Materials handling occupies on average 60% of the work time of employees in such retail and wholesale businesses as the food/beverage, lumber/home improvement, supercenters/mass merchandisers, and beverage distribution. The bulk of the material handling (MH) is done manually and often repetitively. Over time, the repetitive and often forceful material handling motions of bending, lifting, carrying, reaching, and lowering contribute to overexertion injuries that lead to lost work time injuries and workers’ compensation claims[1]. Employers, practitioners, and researchers continue to seek solutions to these costly injuries and associated employee losses[2].

**Traditional solutions** involving administrative controls, including training, and policies, have had minimal long-term impact on the incidence and severity of overexertion injuries from manual material handling (MMH)[3]. Engineered solutions in the form of mechanical assist or lift devices are commonly used in large production and construction businesses, yet few, if any, of these assist devices had found their way into retail, wholesale, and warehousing (RWW) businesses over the course of the past 30 years.

**Each Business is Unique:** Although we have treated the RWW industries as a single entity, the reality is the RWW sector is an amalgamation of more than 1.6 million businesses that are engaged in unique retail, wholesale and warehousing operations. Perhaps, the only common denominator for this group is MMH. Given the diversity of the businesses that are included in RWW, it is wise to develop a product and related marketing plan that takes into consideration the unique features of the specific business category.



## Conclusions and Future Directions

This first MMH Workshop, held in February 2012, served to alert the Wholesale and Retail Trade (WRT) and Warehousing businesses to the opportunities and challenges that define modern material handling. The challenge is the recognition that the 'successful solutions' will require an investment in research and development. The opportunity is the recognition that there is a major untapped market for the right type of mechanical assist device(s). Those devices that are successful will provide for greater efficiency and reduce the physical demands associated with material handling (MH) jobs. This is in the tradition of free enterprise where demand drives supply.

### Future Prospects:

As a result of the workshop findings and discussion with the loss control insurers and underwriters of workers' compensation, it is clear that the demand for engineered solutions to MMH jobs will continue to grow. The first reason is inflation arising from the rapid increase in the cost of claims, both medical and indemnity payouts. The second is the impact of aging and the decline in the fitness of our workforce [4]. The implications are clear: "many employees can't do what they used to do." When the design engineers, however, from the MHIA apply their expertise to those MH jobs, new innovative engineered solutions are being developed to enable today's workforce "to do what they used to do" and to do those jobs efficiently and without the risk of injuries.

### What Next?

**The next major opportunity for hosting a second MMH workshop will occur at ProMat 2013 (Jan. 21-24, Chicago). ProMat is similar to MODEX, but considerably larger with many more exhibitors. ProMat provides a facility for major material handling expo, complete with an appropriate slogan: "where supply chain solutions meet." The theme could also be "where solutions to the RWW supply chain are found."**

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