

AS/RS: ANOTHER ACRONYM FOR ROI?

by *Pete Wetmore*

The warehouse of the future has arrived at newspapers such as the Dayton (Ohio) Daily News, The Indianapolis Star and the Omaha World-Herald.

They are not alone in adopting an AS/RS, or automatic storage and retrieval system, to manage their inventories of newsprint (and in Omaha, pallets of preprints, too). In addition to newspapers, industries such as retailing and food distribution rely on AS/RS for materials and product handling. An AS/RS facility usually looks like a big Erector set, with steel bars and beams running every which way.

Next door to NEXPO is WoF2002, the three-day Warehouse of the Future educational program and its concurrent trade show, the Distribution and Fulfillment Expo. NEXPO attendees were invited Monday to visit WoF and sit in at one of six education stations where specific warehousing issues are addressed.

AS/RS was one of the topics covered in the 45-minute presentation. Presenters also discussed customized free-standing mezzanines (ideal for saving space), industrial batteries and proper forklift-battery maintenance (these 3,000-pound batteries would give the Energizer bunny a hernia).

Warehousing is big business, explained Len DeWeerd of Retrotech Corp. of Fishers, N.Y. Contract warehouses alone generate more than \$10 billion in revenues annually.

With many medium-sized manufacturers having to move 500 to 1,000 pallets a day, AS/RS makes economic sense. Facilities are taller than conventional warehouses, but occupy as much as 70 percent less land and have less total area. This alone cuts operational costs such as heating and cooling, plus an automated system requires less labor and fewer pieces of support equipment such as forklift trucks, DeWeerd said.

AS/RS is ideal for any operation with high material flow rates (think newsprint on a Saturday night), more than one work shift and peak loads

that may be difficult to staff, he said. Materials or products are received, stored and moved with precision by a robotic lift, which reduces damage and consumes less energy than conventional material-transfer tools.

A case study from the food-distribution industry illustrates savings that accompany AS/RS, explained Daniel Labell, president of Westfalia Technologies of York, Pa (Westfalia plans to be an exhibitor at NEXPO2003 next June in Las Vegas, where WoF2003 will be held at the same time.)

Assuming that a new warehouse must be built, the choice between conventional design and AS/RS will drive the building's design, Labell said. A conventional structure would be 39-feet tall, have five levels and multiple aisles for forklifts to traverse. It would have total space of 2.3 million cubic feet—roughly 50 percent more than an AS/RS facility.

The AS/RS building would have two aisles for two robotic storage and retrieval devices, stand 75 feet tall and have 10 levels, most of which would never see a person walking on them. This building would cost \$8.5 million to build, \$1.9 million more than a conventional warehouse.

“That is the number we’re going to try to justify,” Labell said.

Savings would include \$420,000 a year on labor, assuming 14 employees at \$30,000 per year. Product damage would be reduced by \$100,000 a year and storage-rack damage by \$40,000. Other cost reductions would include building maintenance by \$15,000, vehicle maintenance by \$14,000 and energy by \$100,000.

After adding in miscellaneous items, the cost to operate an AS/RS facility would be \$135,000 a year, compared to \$880,000 for a conventional design. Using a discounted cash-flow technique, Labell calculated that over 20 years, the return on investment would be \$5.2 million, or a rate of return of 53 percent.

Not that's ROI.