Focus on MRL

The Future Is Now

By Sally Wilk

""The wave of the future,' says Shannon Knall, manager of international public relations for Otis Elevator Company, 'is a move towards creating buildings in which the machine room is eliminated."' – ***Building Operating Management,*** *October 1, 2000*

W. John Reinartz of Reynolds & Reynolds Electronics, Inc. agrees. "Here we are eight years later and it appears that it is happening."

Reynolds & Reynolds Electronics, Inc. was founded in 1989 and is recognized today as the leading supplier of emergency return systems to the elevator industry. Until seven years ago, Reynolds & Reynolds (R&R) concentrated their efforts on the hydraulic market. W. John Reinartz joined Reynolds & Reynolds in January of 2001 as their Vice President of Sales. He accepted the position of President in late 2002 and took the company in a new direction. Market research indicated that the elevator controller market was forecasting increased sales of traction elevators. R&R paralleled the direction by designing new products for the traction market.

Going Green

This is a historic time for the United States and for the world. The world is going green. The green movement is well underway and many companies are ahead of the curve. These companies include, but are not limited to, KONE, Otis, Schindler, ThyssenKrupp and Reynolds & Reynolds.

While KONE still provides its hydraulic customers with an outsourced solution, KONE believes the future is in Machine Room-Less, gearless technology for low to mid rise buildings. KONE states that it was the first elevator escalator company to introduce the Machine Room-Less concept to the industry and to this day, has installed over 300,000 worldwide.

KONE'S EcoDisc in a Machine Room-Less Application

Otis went green as early as 1997. In an Otis Elevator press release and in the August 19, 1997 edition of The Hartford Courant News, Otis announced that it would "supply elevators . . . for the . . . Conde Nast Building at 4 Times Square . . . in New York City. Otis won the contract in part on its approach to the environment, health and safety . . . . 'This will be the first installation in the United States of high-speed elevators with AC (alternating current) variable frequency drives,' [said Otis Vice President Ray Moncini.] 'These drives consume less energy and operate more cleanly than traditional DC elevator drive systems.' AC-powered elevators improve indoor air quality, Otis [said.] Since their motor generators don't use carbonless brushes, they don't produce carbon dust particles that can infiltrate

heating, ventilating and air conditioning systems."

Schindler's SPEC-DATA® Sheet for the 400A® Traction Elevator System states that the elevator "reduces the amount of vertical and horizontal building space required . . . ." The 400A "consumes 30% less energy than traditional geared models" and is "eco-friendly."

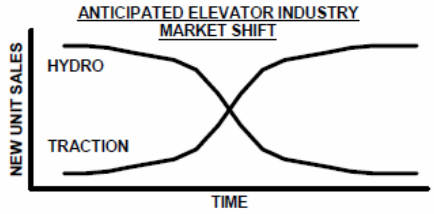
According to the US Green Building Council, "The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. LEED is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings." ThyssenKrupp is a proud member of the US Green Building Council.

Reynolds & Reynolds Electronics, Inc. has always encouraged elevator OEMs to use battery backup as a method for passenger rescue as opposed to the more expensive and less environmentally friendly diesel generator solution.

Keeping Up With Technology

The building market expects that an elevator will have the capability of preventing passenger entrapment in the event of a power outage. For the past twenty years, elevator contractors have offered battery backup units (BBU) to their hydraulic elevator customers. However, contractors were not able to offer BBU for traction elevators because these units did not exist.

In 2002, Reynolds & Reynolds Electronics began designing the Traction Powervator®, an Emergency Rescue Unit designed specifically for traction elevator systems. Up until the late 1990s, BBU for traction was not feasible because the batteries could not support the high power draw required by the larger DC, AC and SCR motors associated with early traction elevator systems.



When OEMs began adopting the VVVF motor technology, R&R recognized that it was possible to design an emergency rescue unit that took advantage of the decreased power draw of the VVVF. The challenge was to create an emergency battery backup unit designed for traction elevators that would work with the physics of the elevator to enable the elevator control system to move the elevator car to the next available floor (up or down, depending on the weight of the car versus the counterweight) at Inspection Speed and open the elevator doors in order to prevent passengers from being trapped inside. Reynolds & Reynolds was awarded CSA certification for their now patented innovation.

T-REX Project – Parking Garage

The first OEM to marry this technology with their elevator system was KONE on their T-REX Project in July of 2003 as specified by Lerch Bates. T-REX was a Transportation Expansion Project that transformed the way people in the metro Denver area traveled along the southeast corridor of Interstates 25 and 225. The project used a multimodal transportation approach to address some of Denver's traffic problems and was referred to as "the next generation of transportation projects" on the www.trexproject.com website.

Reynolds &Reynolds Electronics' Traction Powervator

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Today, many elevator consultant specifications call for a battery backup unit for traction elevators. Most independent controller manufacturers have investigated, purchased and/or tested traction battery backup systems for their controllers. Several of the major elevator OEMs are offering battery backup as an optional feature for their traction elevators. It seems that Shannon Knall of Otis was right in 2001 when she said, "The wave of the future is a move towards creating buildings in which the machine room is eliminated." Welcome to the future.