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It's Going Nowhere Without Riggers and Craters

By Joan Trombetti

Unlike sellers of medical equipment or medical service engineers that face the same problems every day, riggers and craters moving medical equipment in and out of hospitals and other facilities are faced with an endlessly shifting landscape.

New and challenging problems, it seems, are de riguer with each project. But working in concert with the de-installer, riggers and craters create innovative approaches to the most difficult relocation assignments.

The rigging and crating industry has a market value worth millions of dollars annually. Though the business can be lucrative at times, insurance plays an expensive and key role. Most companies carry a \$2 to 6 million dollar umbrella policy, due to the job's unique risks and effect on balance sheets. Riggers must carry general liability, equipment coverage, business auto, trucker and workers' compensation insurance, among others.

JC Duggan, Brooklyn, NY carries \$6 million in liability insurance. John Duggan, vice president of the company says the hardest part of handling equipment in a city like New York is the environment that he and his staff contend with.

"Many of our major hoisting jobs require closing streets," says Duggan. "Last summer, we had to close the eastbound direction of 34th Street to hoist a 3T MRI magnet over a 15-story building to rig it in through a rear wall opening." That's no small undertaking given the Big Apple's landscape.

Whether moving an MRI, CT scanner, nuclear camera, gamma knife, linear accelerator or an entire laboratory, for every new job a rigger and crater faces, plans that were originally laid out can change without warning. It's safe to say it takes years of rigging to learn the proper techniques, how to

calculate geometry and forces and how to use the proper equipment for each piece of medical equipment moved.

Ronald Cortamilia, Director of Logistics at Med Trans Logistics, Port San Lucie, FL, says his company has successfully transported and rigged medical equipment for some of the largest OEMs. "We specialize in medical imaging and pharmaceutical equipment," says Cortamilia. He said that Med Trans has rigged MRIs that weigh 8000 to 70,000 pounds.

Many riggers, he says, tend to underestimate medical equipment rigging. "Moving a printing press as opposed to an MRI magnet are two entirely different rigs," says Cortamilia. "The site conditions for rigging in a hospital versus an open warehouse pose challenges that can't be taken lightly."

What You See is What you Get

An experienced rigger will look at a job and visualize the process. Does the machine need to be dismantled? What route in or out of the building looks to be the most efficient? What equipment is going to be needed? What must be done to protect the walls and floors from damage? Is the ceiling too low in certain areas to get the machine in or out? Does the floor have to be braced from below?

Fran Ambrose, president of F. Ambrose Rigging, Montgomeryville, PA, said that the logistics of rigging never end. "From making sure that all the proper permits are in hand, to having the right equipment (often times fabricating it) to ensuring the job is done the right way, it's all in a day's work. If an MRI gets damaged, the aftermath has a snowballing effect that not only adversely affects the rigging company, but also

the hospital or medical facility involved, and the patients awaiting what could be a lifesaving procedure,” he says.

Ambrose is a master of his trade. His company has been in business for 30 plus years, has a staff of 25, a number of which are family. Ambrose has organized the handling of 3000+ MRIs. “Every situation is different,” he says. “Some rigging and crating jobs need special equipment and accessories, and we have our own welding and woodworking shop to fabricate the pieces we need. We can rig, warehouse and transport just about anything.” Ambrose owns a fleet of state-of-the-art equipment including forklifts with a capacity to hold up to 80,000 pounds, air ride trucks and trailers, high capacity lift gates, crane service and aerial platforms for high rise removals.

Like Ambrose, NOR-CAL Rigging & Installations, San Leandro, CA, is an MRI specialist. Company president, Steve Owen says his company business is about 90 percent MRI. “We move about two to three a week,” he says. Like other rigging companies, NOR-CAL fees run about \$5,000 for a fairly simple move, while more challenging rigging jobs can run as high as \$200,000. “We are about to rig a job in Indiana that should run around \$100,000 because we need to use a 350 ton crane,” Owen says. One particularly nettlesome job that stands out in Owens’s mind is moving an MRI out of an antique building where garage floors had to be demolished and a ramp had to be constructed to get the machine out. “We were dealing with four or five other unions to make sure the project was carried out to



the finish without a problem.” Although NOR-CAL covers a \$3 million dollar insurance policy, with a \$2 million dollar umbrella, Owen is proud to say in the 23 years he’s been in business, “there has never been a problem.”

Professional riggers tend to have a wide variety of tools to get the job done, including cranes and forklifts. Many utilize a variety of industry-specific tools like hydraulic jacks, hydraulic comealongs, hydraulic pushers, chains and all kinds of ‘nuts and bolts’. They have to have both U.S. and metric tools, since many of the machines sold in the U.S. are metric. Designing equipment and accessories to fit the need is also a common practice among many reputable rigging companies.

Diamond Rigging, Batavia, IL, technicians, for example, are very much into design. They built the Hitachi Alta ire cold heart cart for long runs or tight doorways, aluminum gantries for MRI installations and stainless steel rigging and jacking equipment for Mires. One of the most challenging jobs Max Mayer, company president, has faced was installing an Aries Elite over a basement. “My crew and I worked under a scaffolding structure, jacked up the 34,500 pound unit 24 inches and rolled the magnet onto a steel supported structure independent of the building – all during ‘Taste of Chicago’ traffic,” said Mayer. “We started the job at midnight and finished at 6:00 am.”

For smaller, lighter and less complicated medical equipment moves, it is not uncommon for reinstallation companies to handle their own rigging, but for bigger jobs there is no substitute for experience.

Richard Babyak, president, Transit Solutions, North Braddock, PA, says common mistakes include, “not adhering to the facilities policies and procedures, not making arrangements with shipping/receiving departments and not making sure the equipment is source free and decontaminated. I feel that mistakes are made by not having the experience or the ability to provide the services, being unfamiliar with the equipment and taking shortcuts,” he says.

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Meanwhile, Bob Holt, vp-gm, Quickway Rigging & Transfer, Minneapolis, MN, says his company works in partnership with others to make sure the whole job, runs seamlessly. "Quickway is involved in the transportation, unloading, uncrating and placement of MRIs, CTs and many other medical systems, as well as the relocation of those systems," says Holt. "The numbers vary, but annually we move approximately 25 to 30 medical systems, with an average cost of \$5000 to \$30,000. The more difficult the job is, quite obviously, the more expensive."

Bill White, operations manager, Brandon Transfer & Storage, West Palm Beach, FL, says moving an MRI runs anywhere from \$5,000 to over \$8,000. "Some weigh 34,000 or more pounds, so the type of crane required usually determines the fee. For complicated jobs when a crane has to reach 60 to 70 feet, and a tractor trailer truck has to have the capacity to counter-weight – the job can run over \$18,000," he said. Gamma knives are generally thought to be the most expensive medical machines to move.

Michael Ahng, operations manager, Reed Machinery & Transportation, Aurora, IL, a full service rigging, moving and specialized transportation company, suggests the biggest mistake a rigger makes is not using the proper rigging points on a piece of equipment per the manufacturers directions.

Ahng described his most versatile piece of equipment as the 30/0 Versa-Lift, which has the ability to extend its counter weight and lift 30 tons. It has a compact design allowing it to fit into tight quarters. He says MRIs are difficult to handle because each manufacturer has different rigging specifications for each model and many require metric tools and shackles for lifting. "In addition, the imaging rooms can have many obstacles that must be overcome for installations and de-installations," says Ahng.

Delicate Medical Equipment

Many see MRIs as being able to withstand force, but realistically, the machine is extremely delicate and proper care must be taken when rigging and crating. According to Aaron Buckley, Strategic Analyst for Chick Packaging Group, Inc., Chicago, IL, "the choice of equipment used to rig an MRI should be well thought out, because an unbalanced center of gravity could create havoc." Chick uses a tri-lifter, which helps remove the MRI from the delivery truck and a 35,000-pound forklift that enables workers to place the machine on MRI skates, which are essential to navigate the machine around corners. Chick Packaging Group has twelve locations throughout the US.

MEI, LCC, Albany, OR, has combined rigging and crating into one function according to Bill McGinty, operations manager. "By combining the two functions, MEI has more control and can coordinate all the activities involved in a project and pass along efficiencies and provide quality assurance to their customers." MEI president and CEO, Dan Cappello said that pricing a project is dependent upon the model of a machine and the peculiarities of the move path (length, turns, elevation, etc.). "A simple move could be priced as low as \$2000, with more complex moves running as high as \$50,000 or more," he said.

For the most part, rigging outside of the United States (except in Western Europe) is handled by trucking companies.

Sometimes, riggers do their own crating, while others work in concert with professional craters and trucking companies.

For example, O.B. Hill Trucking & Rigging, Natick, MA is a multi-million dollar business offering rigging, millwrighting services, crane and boomtruck services, flatbed, lowbed, over-dimensional and specialized trailer service, as well as crating, warehouse and storage facilities to much of the Northeast. The company's Randy Curtis said OB has moved more than 165 MRI machines in the last 18 months, including medical installations for companies like GE Medical Systems, Philips, Siemens, Toshiba, Varian and others.

Like rigging, crating demands experienced hands. For example, crating for an air shipment is different from crating for ocean shipments. When you are shipping by air, you don't want to over crate, because charges are incurred per pound. Depending on what is being shipped, air shipment tends to handle fragile machines with more care than shipping by ocean, which requires heavier crating.

Phil Jacobus, president of DOTmed, says, "When DOTmed auctions equipment, it sometimes handles shipping. Anytime DOTmed ships internationally, it always recommends to the 'successful bidder' that they ship an entire container – even if the equipment they are shipping doesn't fill the container. It is much more likely that your machine will arrive safely and without damage if it is completely contained."

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Riggers and Craters



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Many times, ships carrying delicate medical machines sail from a cold climate to a warm climate or warm climate to a cold climate. It is not uncommon for moisture to build up inside the top of the container that holds the equipment. Craters use desiccant to absorb the moisture, and some will install the equipment in a vacuum bag, sucking out all the air, protecting the equipment from moisture buildup. If moisture builds, some equipment is prone to rust during short shipments so when the system is turned on, the circuit board can short out.

Bob Cralle, General Manager, Chick Packaging California, Inc feels that vacuum bagging is a necessity when shipping high-value and fragile medical equipment. "The combination of vacuum bagging in addition to desiccant protects the delicate electronics contained in many of these machines," states Cralle."

Larry Knight, Director of Operations at Sunrise Medical Technology, Inc. (SMTI) says the company handles the de-installation, rigging and shipping of MRIs under power using trucks. "When we transport MRIs, we do it in a way that allows the cold head to continue to run and less helium is lost," says Knight. "We do this for land and sea transport." SMTI does not use vacuum bags when crating. They use expansion bags because Knight believes they are a much more flexible fixture for crating moderate to heavy small equipment.

Sometimes craters must use special wood, depending on the country that they are shipping to. Many countries require

wood that has been disinfected, so that it is not prone to insect infestation while traveling internationally.

Freight Dynamics, Minneapolis, MN, is a \$2 million a year, third party logistics company that provides national packaging and crating for the medical industry. Operation's Specialist Mitch Findley said that when picking up medical equipment that is not packaged for transport, moving technicians use pads and straps and lock the equipment into place in a truck. "We bring the equipment back to the facility where it is offloaded and packaged to our specific packaging instructions," says Findley. "Freight Dynamics is ISPM (International Standards for Phytosanitary Measures) 15 Certified and authorized to build and export wood crates in accordance with the the International Plant Protection Convention (IPPC)."

International Packing and Crating (IPC) maintains a fully insured manufacturing and warehouse facility in Itasca, IL, specializing in wooden packaging for both domestic and international shippers. Company Senior Vice President, Art Gutierrez says crew chiefs go directly to a site to work with riggers to measure and build the necessary crating needed for each machine. "If a machine is traveling internationally, we will use vapor barrier corrosion protection," he says. "This vapor barrier is placed around the machine to protect it. Once it's on, we vacuum all the air out and add dessicant before we seal it to make sure no moisture or corrosion occurs."

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