*Boundless Moves... In **ANY** Direction!*

Burkhalter

Single-sourcing Makes Multimodal Transport Predictable and Efficient

a report by
Burkhalter Specialized Lifting, Rigging, *and* Super-sized Multimodal Transport

Columbus, Mississippi, US

Super-sized cargoes for nuclear energy projects require a unique combination of talents that are saturated with experience, safety and innovation. When the extreme size or weight of these cargoes ruleout a single mode of transport, a multimodal transport solution – any combination of rail, road and water – becomes necessary.

It is understandable that multimodal projects compound the complexity of super-sized transport because each mode of delivery requires specialised lifting, rigging, planning, loading and unloading. According to Burkhalter, super-sized multimodal projects require an uncompromised single-source approach with specialised equipment and craftsmen/engineers that are experienced in every aspect of the project.

A Global Reach

As the world continues to shrink, the heavy-rigging and transport industries continue to grow, as does its need for global logistics/transport systems. Freight forwarders are no longer sufficient when the task becomes providing the most economical, reliable and safe carriage of super-sized/heavy shipments.

This is especially true when seeking reliable service along with sizeable savings in global transport costs. Global costing must be determined in advance and remain predictable to facilitate logistics planning and scheduling. Therefore, the cargo market requires a transportation solution with a global reach that networks any mode or combination of modes, e.g. multimodal.

As the need for multimodal transport increases, it is optimum for logistics/transport providers to have global systems that manage the complete movement of product from factory to its final destination. These expert services provide a comprehensive advantage because they ensure a smooth flow of cargo with a predictable schedule of costs over time. It is widely believed that value-added components of this service, e.g. experience, reputation and safety, are the main factors in success and excellence – especially in highly competitive industries like multimodal transport of super-sized/heavy cargoes where timeliness and lowering costs drive market share.

Adaptability via Innovation

Multiple transport modes are expected to work together in a complementary fashion to go from point A to point B utilising quality logistics, reliable transportation and efficient transfer points. People travel in a multimodal manner when they take a car to the airport, ride a bus from the car park to the terminal, and then fly in an airplane to anywhere on the globe. This occurs without much planning because each mode is accessible, efficient and reliable.

When moving people, a non-stop flight is preferable to a multi-leg trip with layovers. Airlines do this to fill their planes, which make them more efficient and ultimately profitable. The goals of super-sized multimodal transport are as different as they are similar to moving people. They too want to be efficient, but may not be able to transport a super-sized/heavy load without some degree of adaptability through innovation.

This is especially true when cargo is super-sized and weighs in excess of 600,000lbs. One such Burkhalter project required the receiving of a 615,000lb steam generator from Japan, unloaded via ship's gear, trans-loaded onto beams and stands on a deck barge, towed by barge up the Tennessee-Tombigbee Inland Waterway, and rolled off at West Point, Mississippi, with Goldhofer hydraulic platform modular trailers (HPMTs). The generator was then hauled 13 miles, trans-loaded to an extra-heavy 12-axle rail car and a special train (one car-one engine) arranged for rail transport to Ackerman, Mississippi. The cargo had to be transferred to rail because the bridges on the route would not support the weight over the road. Once in Ackerman, the generator was trans-loaded back to Goldhofer HPMTs and transported the final nine miles to the Red Hills Generating Station. Once on site, the generator was lifted and set on its sole plates in an award-winning operation that utilised an

engineered configuration of strand jacks.

When a super-sized/heavy cargo needs engineered rigging, receiving, trans-loading, lifting, setting, cribbing and specialised transport multiple times, it is advisable for a single point of responsibility, but only when there is extraordinary experience at every leg in the operation. Transporting a 600,000lb generator over multiple modes of transport is an extremely technical rigging assignment that few companies could accomplish.

What made the final rigging more complicated was the final resting place of the 600,000lb generator stator. It had to be lifted 45 feet and moved 100 feet laterally to a raised slab/pedestal – inside a building. A safety-engineered solution lifted, moved and set the super-sized/heavy generator stator without incident.

Specialised lifting and rigging engineers solved the technical aspects of the project with an 880,000lb lift capacity frame, strand jacks mounted across the top beams and an integrated hydraulic lift/slide jacking system. Upon completion, it was another award-winning performance.

'They' Said It Couldn't Be Done

Everyone said the wide 600,000lb generator could not rail to a power project in Des Moines, Iowa, but adaptability with innovation proved everyone wrong. Understanding that its long-time customer needed absolute assurance that it could be done, multimodal transport engineers performed a laser survey of any rail obstructions on the proposed route.

Working with the manufacturer of a massive 16-axle railcar, Burkhalter engineers installed jacks on the car's suspension to initiate a leaning action to miss obstructions. The combination of the laser survey, proper railcar selection and the engineered tilt modification proved that the innovative plan would definitely work.

At Burlington, the three major components were unloaded by barge roll-off and hauled to a rail siding location. The two low-pressure (LP) turbine components were loaded onto highway transporters and delivered to Des Moines. The generator was carefully loaded, exactly-centred, onto a 16-axle FD railcar. It took 18 hours by special train, with crew members riding along. During the 165-mile journey, clearances as close as one-half of an inch were encountered as the massive generator passed through three truss bridges and a canopy at the Amtrak station in Ottumwa.

A combination of barge, rail and highway transport was used to move a generator and turbine components from the Gulf of Mexico to Des Moines. Craftsmen crews received the shipment at the Port of Mobile. The generator and two LP turbine components were placed on a barge for river transport to Burlington, Iowa. Burkhalter Specialized Transport hauled an additional 26 truckloads of cargo from port to job site.

No government bureaucrat, politician or special interest group decided by what means the shipment would be made. Their role was to protect the local infrastructure and to oversee a solution that would not impede commerce. The super-size and weight of the turbine/generator and economic efficiency and feasibility studies determined which modes of transport were best to use. More often than not, the mode(s) of transport decision is indicative of what is possible after weighing the varying degrees of efficiency, e.g. time and cost.

Super-sized/heavy multimodal transport is a complex operation that requires a timely co-ordination of assets and a strict adherence to scheduling. Something as unlikely as inland logistics will often determine whether a global project is successful because it improves costs, maintains quality across multiple modes of transport and keeps everything on schedule.

Extraordinary Resources

Back in 1967, *US News and World Report* featured an article that described a growing interest in multimodal transport services provided by a single transportation company – two or more transport modes under a single corporate umbrella. With regard to super-sized cargoes, this is where we are today, but not because of a corporate giant trying to corner the transportation market. Multimodal transport of super-sized and heavy cargoes requires extraordinary resources, experience and innovation to make it work.

Without exception, super-sized/heavy cargoes do not go multimodal without reason. Specialised lifting, rigging and transport companies and their customers would prefer using a single mode of transport, because each transfer requires a loading and an unloading – a costly and time-consuming set of necessary operations. What are the options available to specialised transport companies with cargo that is too tall for an underpass, too heavy for a bridge or too wide for a rail line? They need to use an alternative mode of transport to get around the obstacles and/or use specialised equipment to engineer a safe and efficient solution.

A Hybrid Solution for

Super-Sized/Heavy Cargoes

Moving super-sized and heavy cargoes in steps over rail, road and water is nothing new. However, this process was traditionally accomplished with multiple companies linked by their reputations for a specific expertise, i.e. heavy lifting, logistics, specialised rigging and super-sized/heavy and specialised highway transport.

What began as a need for specialised lifting, rigging or transport services limited to a single leg in a multimodal plan has grown into a need for a completely integrated transportation methodology that is centrally managed and responsible for cargoes from start to finish.

Benefits of Single-sourcing Multimodal Transport

- Project-centric responsibility;
- seamless transitioning between modes;
- start to finish management of cargoes;
- improved communications and reporting;
- synchronised rigging with transport services;
- automated billing, payrolls, permits, scheduling;
- accurate forecasting and costing; and
- project safety/completion incentives.

Understandably, single-sourced business models require more experience and resources by the companies that operate in this manner. The services rendered under a single-sourced business model extends from the carrier assignments, logistics and rigging on through to the final delivery, freight payments auditing, reporting and performance reconciliation.

'One Time Right' Philosophy

Planning the lifting, rigging and multimodal transport of a super-sized/heavy cargo with a high-quality and safe solution adds upfront costs, but they pale in comparison to the financial loss that is likely from a failure during any leg of a multimodal rigging/transport. And the potential for losses, especially from deploying a multitude of vendors, is what truly substantiates the value of a 'One Time Right' philosophy.

The best way to ensure success and limit liabilities is to adopt a One-Time Right philosophy to create balance, synchronisation and flow over every lifting, logistical, rigging and transport detail. Doing something right the first time must be the company's attitude toward quality and excellence.
Another component of One-Time Right is employee involvement. One-Time Right works best when every employee contributes to the elimination of waste, and identifying and solving problems. It requires total employee involvement.

The One-Time Right philosophy assures quality at the source – or before-the-fact prevention – where the focus on quality is on-going for every craftsman, engineer, equipment operator, specialised transport equipment, process and plan. Nothing must escape the scrutiny of employees working as a team to achieve quality.

The goal of super-sized/heavy multimodal transport must be quality at the source – also referred to as doing it right the first time – and throughout each transfer. However, doing it right the first time is not the traditional approach to quality. The traditional approach is known as after-the-fact assessment where a product is produced or a service is performed, then it is inspected and the source of quality is seen as the inspection bench. This is obviously an unacceptable standard of performance for super-sized/heavy rigging and transport, where cargoes are often irreplaceable or impossible to rapidly repair.

To assure a high-quality and safe solution, every manoeuvre must be procedurally designed, planned and executed by a team of highly trained engineers, superintendents and project managers in accordance with a company's quality system. This must include all aspects of heavy lifting, rigging and multimodal transport.

The Value of Single-sourcing

Super-sized/heavy multimodal transport is a complex operation that requires a timely co-ordination of assets and a strict adherence to scheduling. Burkhalter recommends a centrally managed, single-sourced business model to expedite multimodal projects and produce predictable results. By single-sourcing every aspect of multimodal transport, the most complex projects become manageable, predictable, and efficient.

When single-sourcing super-sized/heavy lifting, rigging and multimodal transport, many direct and indirect costs are dramatically reduced as information flow improves. A single source of contact and responsibility are at the core of establishing control over multimodal projects. Internal communication with craftsmen/engineers, along with external communications with clients, regulatory groups and vendors, ensure, continuity.

The ability to integrate additional transport modes in the movement of super-sized cargoes is often by

necessity after feasibility studies determine what is possible. This flexibility is another example of how a single-sourced multimodal project can be expertly managed on the fly because of its centralised authority and complete responsibility for the project.

A Professional Focus on Safety

Lifting and moving super-sized/heavy cargoes requires a team effort where nothing is left to chance and experience controls every aspect of projects. Experienced craftsmen and specialised lifting, rigging and transport equipment make difficult multimodal transport possible and safe. Always seek a professional focus on safety. Not only does this keep even the most complex projects on schedule, but it also minimises liabilities as it maximises potential.

When the risks are high and the consequences for failure severe/costly, hire an experienced team that has a pristine safety record. Safety is a time-honoured philosophy that must extend from the top down to be successful. This is due to its substantial upfront costs and the hiring of safety professionals that are responsible for its adherence. Crews must be fully outfitted with the latest safety equipment and be knowledgeable in its operation. Safety is fundamental to the success of any super-sized/heavy project and needs to be integrated into all planning, lifting, rigging and transport.

Burkhalter's long history in the safe delivery of super-sized cargoes via multiple modes of transport further supports its standing as an industry leader. Because of its reputation for excellence, safety and innovation, Burkhalter is often the vendor of choice on mission-critical shipments of cargoes that are irreplaceable, valuable and impossible to rapidly repair.

It is imperative that time-proven methods and the latest computer modelling techniques are used in collaboration with expert craftsmen with exemplary standards of precision and safety. These qualities will only be found with highly reputable companies with a long heritage in providing professionally engineered rigging, heavy lifting and specialised-transport services. The best choice is a company where every aspect of its business complements a vision to always be the 'Premier', 'First-Choice' provider.

Look for companies with decades of heavy lifting and rigging experience in coal, gas and nuclear power generating, chemical, refineries and other processing plants. To win multimodal projects in these industries, companies must maintain a talented/professional crew of superintendents, engineers and craftsmen, a modern array of specialised equipment/tools and a pristine safety record that is second to none. Be sure to identify these capabilities and resources before assigning a super-sized/heavy multimodal project. ■

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