North American Transport Logistics

Prepared by HLI Rail & Rigging, LLC

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About HLI Rail & Rigging, LLC

HLI Rail & Rigging, LLC specializes in the transportation and rough-setting of transformers throughout North America.

The company's operations are directed from three US offices:

Houston, TX:	Rail Operations & Engineering
Philadelphia, PA:	Rigging, Sales and Project Management
New York, NY:	Accounting & Administration

- ***During 2012, HLI successfully completed the delivery and setting of over <u>520 transformers</u>.***

About HLI Rail & Rigging, LLC

Projects are completed in an efficient and cost-effective manner. HLI considers all available transportation methods when preparing a logistics plan.

Transport Options Include:

- **Rail**
- **Road Transportation**
- **In-land and Coastal Waterways**

Many projects will involve multiple modes of transportation, either for logistical reasons or due to schedule limitations.

HLI works with a broad base of expert sub-contractors, whose professionalism and local knowledge complement HLI's already considerable experience.

Transport Method Selection

Many criteria have to be assessed before a transport plan can be developed and budgeted.

1. Gather data on the cargo and the origin / final destination.

Often the port of entry to the US can be chosen to suit the most efficient inland transportation method.

2. Delivery Location:

- Exact address of sub-station / foundation pad
- Proximity to a suitable rail siding.
- Access to sub-station for road transport.
- Availability of local rigging / transportation sub-contractors.
- Transport route into area or from rail siding – are there obstructions such as low or under capacity bridges, power lines or local ordinances that restrict travel of oversized loads.

Transport Method Selection

3. Transformer Body

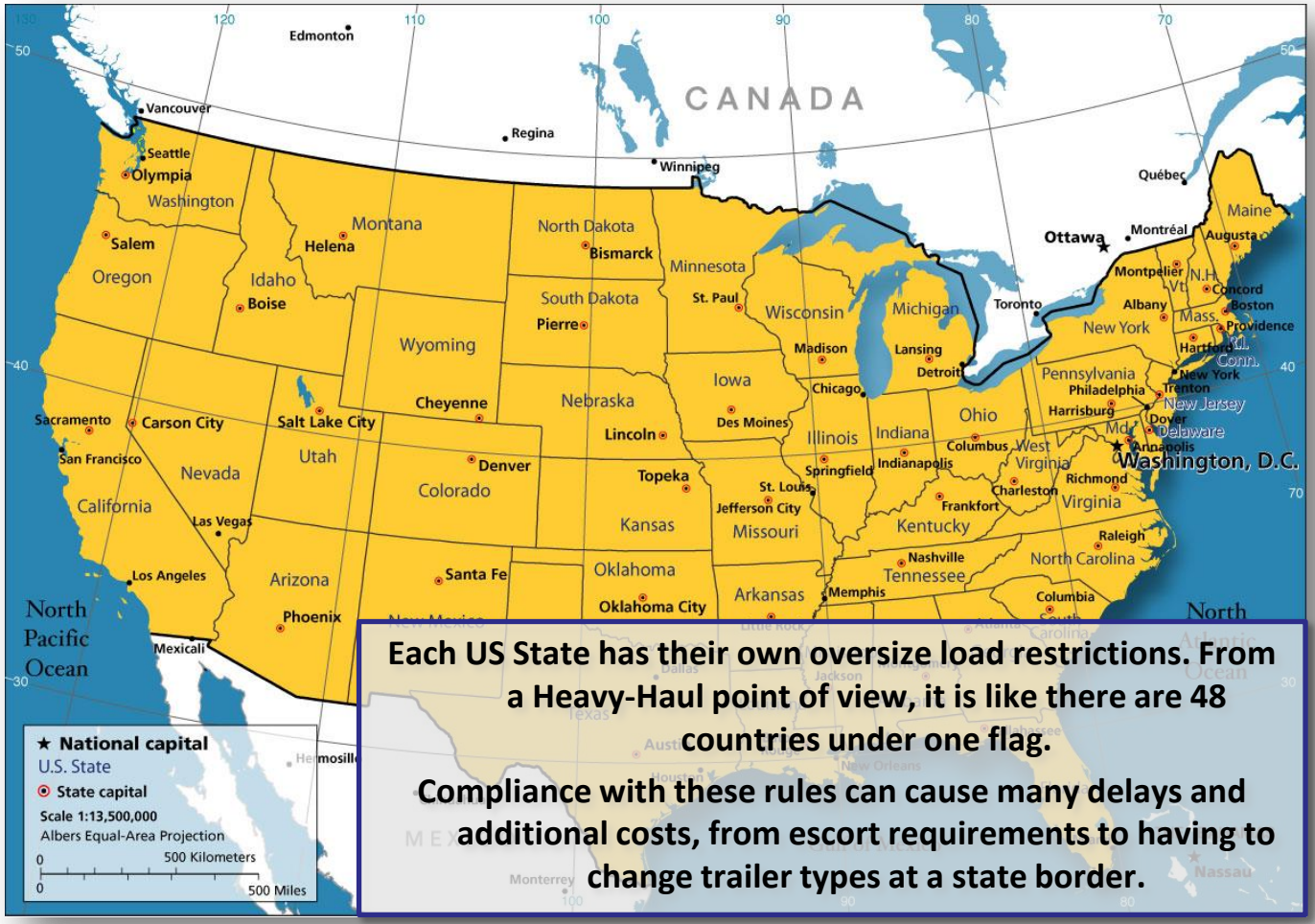
- Exact weight and dimensions of transformer.
- Rigging points and method.

- **It is vital that there is regular communication during the design of the Cargo, as the smallest changes can have a significant affect on the transportation method and cost.**

- **Obtaining railroad clearance to move over-dimensional loads to their destination can be a very detailed process. Some loads clear by only a very small margin.**

- **Badly placed external fittings or changes made to the cargo design after clearance has been obtained can increase costs dramatically or even prevent the rail car from moving all together.**

In-Land Transportation



Each US State has their own oversize load restrictions. From a Heavy-Haul point of view, it is like there are 48 countries under one flag.

Compliance with these rules can cause many delays and additional costs, from escort requirements to having to change trailer types at a state border.

Inland Transportation

Similar Provincial Restrictions apply in Canada…

Transport Method Selection

How do we decide what is the most cost effective and efficient method of transportation of the transformers?

Transport Method Selection

What are our options?

RAIL

BARGE

ROAD

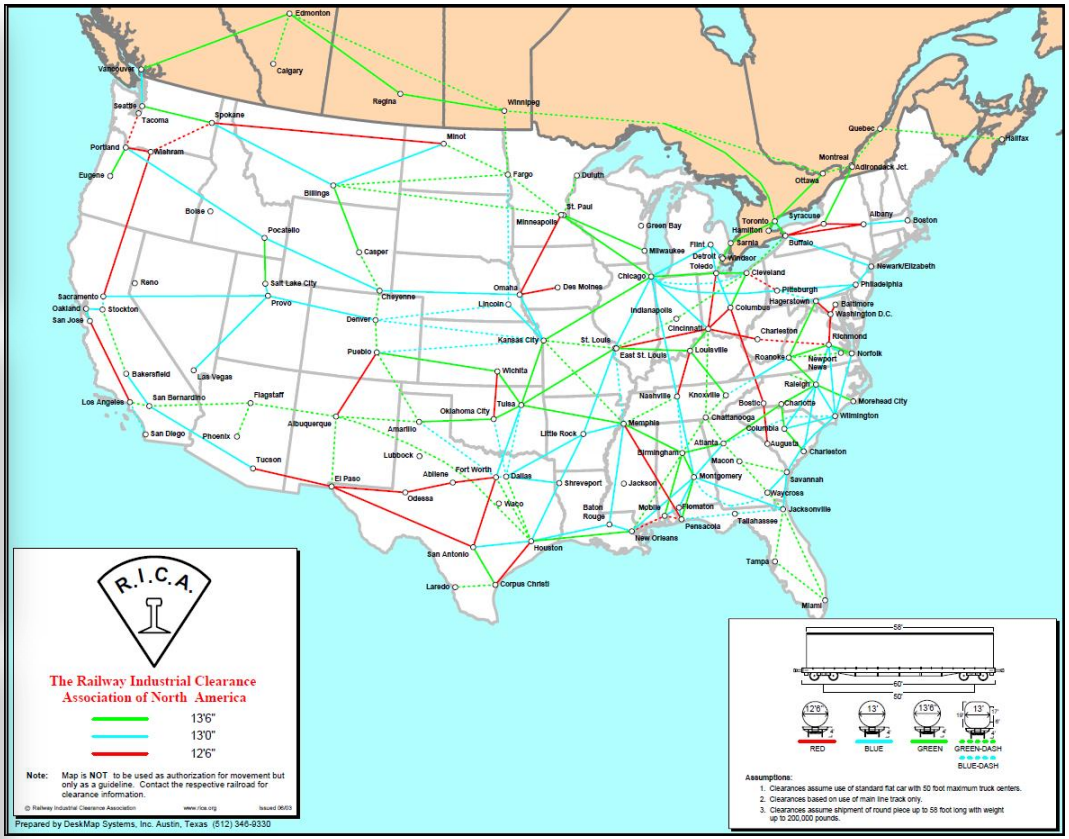
Transport Method Selection

How do we decide which is the most efficient?

- **In our experience Rail is always the cheapest and is therefore our first option.**
- **Use of Road and Barge options have to be decided on a job to job basis.**

Rail Transportation

Railroad Route & Clearance Map

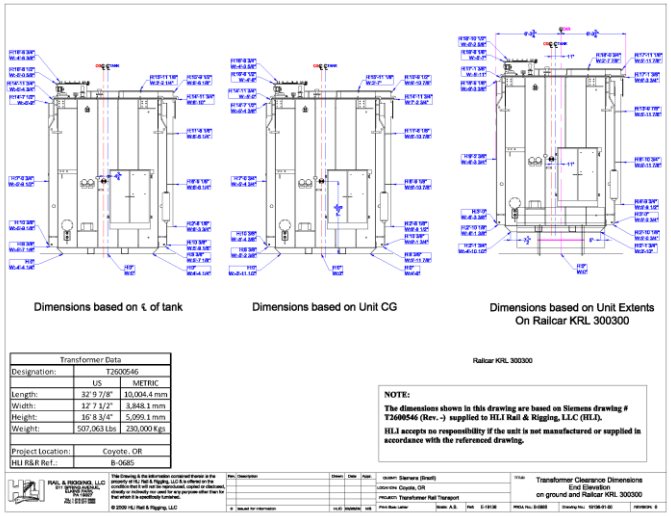


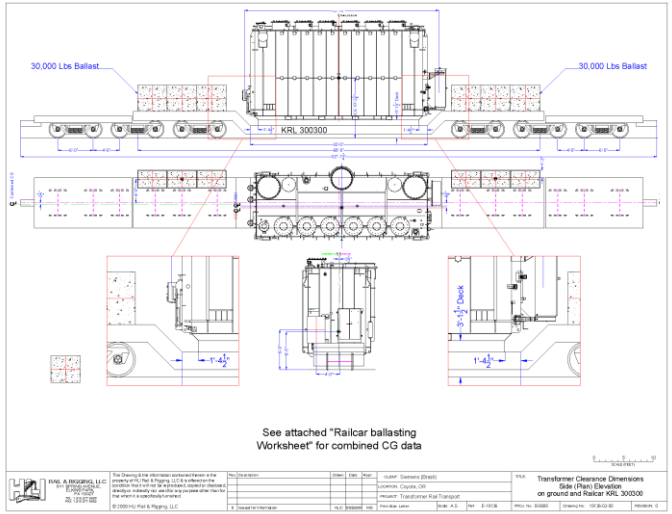
It is often necessary to switch from railroad to railroad when obstructions are encountered on the route.

Rail Clearance

How do we check if Rail is possible?

1. Detailed Rail Clearance Drawings are produced:





2. These are submitted to the different railroads on the intended route.

Note that there are several major railroad companies and each have different rules and capacities.

Rail Clearance

Rail Road Over-Dimensional Clearance Process

- A dimensional load is defined as a load with one or more of the following characteristics:
- Width greater than 10' 6"
- Height greater than 15' 10" above the top of the rail
- Loads that overhang the ends of the rail car
- Loads weighing more than 220,000 .lbs or requiring more than four axles
- Step 1: Request Clearance
- All of the above types of loads must be cleared by the Railroad Clearance Department prior to moving.
- The shipper must receive clearance from the originating railroad. If the origin is located on a short line or handling carrier, then the first line haul carrier should be contacted.
- The following information will be required in order to submit clearance request:
- Requesting Party's Name, Company & Address
- Proposed Ship Date
- Origin & Destination
- Shipper & Receiver
- Commodity
- Shape, Dimensions & Weight
- Load Type (Bolster, Overhang, Schnabel, etc.)
- Most Railroads will assess a charge between $500 and $1500 for the preparation and provision of a Dimensional Load Clearance Form. This fee must be paid before the Clearance Team can respond to your request.
- In addition to the initial clearance review most railroads have implemented a Dimensional Service Review (DSR) to determine if operating resources are available to handle the dimensional shipment. The DSR will be required if any one of the following is involved:
- Shipment width exceeds 13' 0"
- Shipment weight exceeds 499,999 lbs
- Required speed is less than 45 mph
- Special Train service is required
- Schnabel or Bolster cars are required
- Loads requiring movement in corridors against the flow of traffic in directional-running territory
- Shipments requiring a DSR will be managed through the following process:
- Step 1 - The shipper of the proposed movement will submit the Dimensional Load Clearance Form online.
- Step 2 - The Clearance Group will determine if the proposal requires a DSR.
- Step 3 - If the proposed shipment does not require a DSR, the proposal will be processed by the Clearance Team.
- Step 4 - If the proposed shipment does require a DSR, the proposal will be sent through the DSR process to determine if operating resources are available to handle the proposed shipment. This process will be in addition to the current Dimensional Clearance Process.
- the railroad will respond when both processes are complete (estimated timeframe is 30-45 days).
- When both processes have been completed, the Railroad Marketing & Sales Representative will develop a freight rate applicable to the approved shipment.
- Step 2: Obtain a Freight Rate
- Freight rates on machinery not requiring a Dimensional Service Review (DSR) are contained in Tariffs available through most railroad web sites, access requires a user id and password and successful completion of a credit application.
- Freight rates on railroad web sites are not applicable for shipments requiring a DSR. You must contact your Marketing & Sales Representative to obtain rates for these types of shipments.
- *Note: Clearance and DSR approval must be received before your Marketing & Sales Representative can provide you with a rate.
- Step 3: Industrial Track Agreement
- An Industrial Track Agreement is a contract between the Railroad and the Shipper for rights to utilize a railroad track, private track, or to lease track from the owning railroad.
- An Industrial Track Agreement must be in effect before a car can be ordered or shipped. The track agreement allows the Railroad to evaluate each shipment and identify the best place to load and unload the commodity. At this point a cooperative effort is required between the Railroad the Rigging company responsible for offloading the railcar as State DOT restrictions and requirements will influence this location.
- Step 4: Order a Freight Car
- The shipper must order cars from the originating railroad. If the origin is located on a short line or handling carrier, then the first line haul carrier should be contacted. I
- Standard Flat Cars (*Note: To order a railcar you must access a secured railroad web site requiring a user ID and password. If you do not have a user ID, you will need to obtain one.)
- To request heavy-duty flat cars, please contact the Railroad Dimensional Clearance Department. Car orders should be placed at least six (6) to eight (8) weeks in advance of a loading date.
- *Note: A rail car order cannot be placed until all of the following have been completed and verified by the Clearance Department:
- Movement must be cleared by all railroads (See "Step 1: Requesting Clearance")
- DSR (if required) must be completed and approved (See "Step 1: Requesting Clearance")
- A freight rate must be obtained and a UP rate authority must be submitted on the bill of lading. Team Track or Industry Track Agreements must be signed and in place.
- Final origin and destination Zone/Track/Spot must be identified and clearance must match that Zone/Track/Spot.
- Step 5: Loading & Securing
- The shipper is responsible for loading, tie-down, and securement of the load to the rail car. Prior to movement, shipper is responsible for providing center of gravity measurements on all loads. Lateral and Longitudinal Centers of Gravity must be on center of car in accordance with AAR Rules for Open Top Loading. Final Drawings depicting loading arrangement, including Center of Gravity in all three dimensions.
- Step 6: Receive Mechanical Inspection
- All loaded dimensional shipments must receive securement inspection and measurements prior to shipment from the originating rail carrier.
- *Note: All loads must be approved by the Railroad Mechanical Department before the shipment can receive final clearance and be moved.
- Step 7: Submit Billing Instructions
- The bill of lading should be submitted through the web-based Bill of Lading Form. (*Note: This is a secure site requiring a user ID and password. If you do not have a user ID, you will need to register.)
- *Exceptions: Shipments requiring the use of idler cars or bolstered loads cannot be billed via the web-based form.

Barge Transportation

Once the clearance process has been completed:

- If Rail is possible, we rail to the closest rail siding to the destination.
- If Rail is not possible, we have to investigate alternative methods.

What are our other options?

- If it is a very heavy transformer, very long distance by road, and/or extremely difficult to move, the transportation would have to be done by barge or truck.

Barge Transportation

Map of Navigable Inland Waterways

Barge / Road Transportation

As you can see from the preceding map, Barge delivery is possible to some areas, but not to others. This is why each one of these barge / road transport operations has to be worked on a job by job basis, as DOT rules and regulations are extremely strict.

For example, different states prefer different trailer types.

Dual Lane Beam

Dual Lane Modular

Modular

Modular Drop Deck

Due to these varying regulations, it is often necessary to change trailer types at state borders. Therefore, this option has to be treated as a last resort as it is extremely expensive.