

CASE STUDY

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Wind Turbine Universal Railcar

Company Profile

Wind turbine manufacturer with 40 years of experience in designing, manufacturing, installing and servicing wind turbines, delivering more than 101 GW of sustainable energy worldwide.

Business Challenge

The customer requested a strategy and fixture designs to transport multiple wind turbine components on same 8 axle railcar with the ability to interchange components without any hot work. Wind component fixtures and securement designed to meet or exceed AAR OTLR's requirements and accommodate the following wind component combinations:

- Nacelle/Drivetrain
- Drivetrain/Hub
- Drivetrain/Drivetrain
- Hub/Hub/Hub
- Nacelle/Hub
- Nacelle

Solution

BNSF Logistics' engineers developed an innovative solution that provided the convenience of wind component interchangeability and minimal loading/unloading times without any onsite welding to secure components to the railcar via universal fixture plates. Bolts, in conjunction with fixture plates, are utilized to attach interchangeable securement fixtures with ease. Storage boxes were constructed and fixed onto each of the 8 axle railcars to accommodate all required fixtures, hardware and accessories. When car is empty, no attached fixtures extend beyond non-dimensional shipment requirements, thus minimizing cost when moving empty railcars to new destination for loading.

Process/Procedure

BNSF Logistics successfully completed the product design by fully understanding both the customer's needs and AAR's OTLR's requirements.

- Worked closely with the customer to create a satisfying, easy to operate product design.
- Performed securement calculations to meet AAR OTLR's requirements
- Created and submitted figure loads to AAR OTLR committee.

Benefits Achieved

- Created an innovative universal car securement strategy for transporting different combination of wind components
- Minimal loading and unloading time and labor
- Submitted figure loads to AAR OTLR committee
- Met and exceeded customer's expectations.

