

## CASE STUDY

### CONTACT

Marketing Department  
Marketing@bnsflogistics.com  
+1-855-481-9658

BNSF Logistics  
1600 Lakeside Pkwy, Suite 100  
Flower Mound, TX 75028  
www.bnsflogistics.com



# Wind Energy Component Fixture Design

## Company Profile

In 2015, BNSF Logistics acquired Transportation Technology Services (TTS), a registered Professional Engineering firm in Texas and a leader in design for railcar transport of wind energy components.

## Business Challenge

Founded in 2001, TTS focused on railcar designs and modifications. To meet emerging market challenges for movement by rail, TTS quickly expanded into the design of shipping fixtures and load configurations for wind power components. These components include blades, towers, nacelles and hubs.

## Solution

As the company developed and tested fixture designs, the business quickly grew to shipments in the tens of thousands of wind components using these fixtures.

- 2004 - Scope increased to overseeing rail loading at ports, ensuring wind energy components were loaded and secured on railcars per TTS design specifications and when necessary, providing degreed engineers for on-site support.
- 2009 - The development of standardized, re-usable fixture designs allowed TTS customers to begin running universal blade and tower trains. Clearance submission became streamlined. First TTS patents were obtained for wind energy transport.
- 2012 - As a testament to a well designed product line, business grew to 10 universal blade trains and 5 universal tower trains in active service for various customers.

## Process/Procedure

The BNSF Logistics design process includes: 3D CAD modeling, Stress Analysis using FEA techniques and field testing of new equipment to assure safe, dependable and robust products.

Utilizing nearly a dozen US patents, BNSF Logistics blade fixtures can be repositioned on railcars in order to accept different blade designs. The ability to re-use fixtures for various types and sizes of blades makes transporting them more efficient and cost-effective for our clients.

The BNSF Logistics universal tower saddle reduces costs for shipping towers via rail. Current saddle designs are fixed diameter units, which are only useful for a specific tower size. In contrast, the BNSF Logistics tower saddle is versatile, designed with the ability to adapt to different tower sizes. This allows for multiple tower sections to be used with the same basic saddle, preventing obsolescence and lowering costs.

## BENEFITS ACHIEVED

- Clearance Drawings for use by Railroad Route Clearance Departments.
- AAR Open Top Loading Rules compliant securement designs.
- Well designed, safe, economical and dependable transportation.