



How technology has contributed to rail freight services?

Railway networks are complex, and maintaining safety is not an easy task. Thousands of people work hard day and night to ensure the safety of the passengers and the freight. With time railroad has also technologically upgraded and it is still in the process. New technologies are contributing to the efficiency of the rail network. It has made the railway system flexible and adaptable. All the railroad employees are also trained to handle the tasks according to the latest techniques. Such as various freight dispatching software are introduced in the [freight dispatcher training program](#). Let us know about some major technological advancement in the rail freight services—



- **Measuring every inch of the railway track**

Track geometry cars are used to identify the problems in the railroad tracks. It travels along with the car and measures every inch of the rail track, elevation in the curves, gauge, and track alignment. Freight railroad ensures safety and conducts surveys to avoid even the smaller problems. It is because if smaller problems are not identified in the initial stage, they may become large in the future.

- **Protecting the bridge in piers**

Sonar technology is used to check the stability of the bridge piers. Sonar sends out the sound waves which bounce off the bridge piers and the ground surface below the water. Based on the nature of echo, the concerns related to the bridge piers are identified and resolved. Sonars help identify the erosion around the piers.

- **Use of the smart sensors**

There are smart sensors placed alongside the railway track. Technologies such as the infrared and lasers help to know the strength and health of the wheels of the train. If wheel bearings are overheated it may lead to train derailments. A hotbox detector is used to check the temperature of the bearings. Some countries also have acoustic bearings detectors that evaluate the sound of the bearings to collect the data.

- **Planning the repairs and maintenance**

Machine learning or artificial intelligence is used to predict the maintenance issues of the railroad. Various algorithms and numbers are used by the machines to plan the repairs and maintenance of the tracks. This is very beneficial for the safer and efficient railroad network.

- **Analyzing the images**

Thousands of images can be collected in seconds and further they can be used to identify the problems. With the help of technology, one can keep an eye on various aspects at the same time. It has made monitoring easy.

The bottom line

Technology has made things easier and maximized the safety and efficiency of rail networks. These are some of the technological advancements that have contributed to the development of railroads. Today every country uses the technology for monitoring the train movement and ensuring the smooth movement of the railroad traffic.