What Railroads Haul: Crude Oil

Everything from transportation fuels and plastics to polar fleece jackets, toiletries and medicines are made from crude oil. Railroads are a safe, cost-effective way to move crude oil to markets all over the country.

The “shale revolution” created more U.S. crude oil production.

U.S. crude oil production in 1970 averaged 9.6 million barrels per day. By 2008, it had fallen to just 5 million barrels per day as new fields failed to keep pace with depletion of older fields. However, thanks mainly to growth in shale oil, U.S. crude oil production grew to 12.3 million barrels per day in 2019 before falling to 11.3 million in 2020. Texas and North Dakota have accounted for most of the increase in U.S. crude oil output in recent years. Production also rose sharply in New Mexico, Oklahoma and Colorado.

Rail shipments of crude oil have fluctuated.

Historically, pipelines have transported most crude oil. However, especially in North Dakota, higher crude oil production outpaced growth in pipeline capacity. Railroads helped fill this gap. Originated carloads of crude oil on U.S. Class I railroads surged from 9,500 in 2008 to 493,146 in 2014. They then fell sharply the next few years as new pipelines were built, but carloads rebounded somewhat in 2018 and 2019. They fell again in 2020. Terminated carloads of crude oil on U.S. Class I railroads rose from 9,344 in 2008 to a peak of 540,383 in 2014 before falling sharply and then rising again, in part because of large volumes of crude oil originated in Canada and shipped by rail to refineries in the United States. In 2021, U.S. Class I railroads terminated 236,069 carloads of crude oil.

At its peak in 2014, crude oil accounted for 1.6% of total originated carloads and 1.7% of total terminated carloads. In 2021, crude oil’s share was down to 0.3% for originations and 0.6% for terminations.

In 2020, the average carload of crude oil originated in the United States carried 650 barrels of oil. Based on that, the 91,152 carloads of crude oil originated by U.S. Class I railroads in 2020 were equivalent to around 162,000 barrels per day, or approximately 1.5% of U.S. production. In 2014, the peak year for rail crude oil shipments, railroads accounted for around 11% of U.S. crude oil production.

Key Takeaways

• Railroads safely move crude oil, which is used to produce thousands of different products.

• In 2008, U.S. Class I railroads originated 9,500 carloads of crude oil. Thanks to the shale revolution, that grew to a peak of 493,146 carloads in 2014. Since then, rail carloads of crude oil have fluctuated.

• In 2021, U.S. Class I railroads terminated 236,069 carloads of crude oil.

• A variety of factors affect rail crude oil volumes, including pipeline capacity and crude oil prices.

• More than 99.99% of all hazmat moved by rail reaches its destination without a release caused by a train accident.