

## Freight Services

The Alaska Railroad (ARRC) provides seamless freight operations between shipping points in North America to many destinations in Alaska. Port facilities in Seattle, Whittier, Seward and Anchorage provide crucial links between marine and land transportation modes. Rail yards in Seward, Whittier, Anchorage and Fairbanks offer centralized distribution hubs for other transportation modes.

### Freight Revenue & Expense

Freight is the Alaska Railroad's bread-and-butter, generating more than half of ARRC's operating revenues (excluding capital grants). In a typical year, the railroad hauls 3-4 million tons of freight. In 2020 and 2021, the pandemic lowered freight demand, and ARRC hauled about 2.5 million tons in each of those years. In 2022, freight activity rebounded, with ARRC hauling 3.7 million tons and generating 60% of operating revenues (excluding grants).

Major lines of freight business include:

- **Petroleum** – Some petroleum products move from Anchorage to a fuel distribution center in North Pole. A fuel distribution system established in 2020 moves products between rail-linked facilities in Anchorage and Fairbanks.
- **Barge / Interline Services** – Alaska Rail Marine (ARM) moves rail shipments to/from Alaska via Seattle, interchanging with railroads in the Lower 48, and frequently hauling



*Petro Star's new fuel distribution system came on line in 2020, with terminals in Anchorage (pictured) and Fairbanks.*

freight originating in Canada and Mexico. Containers and railcars arriving in Alaska via ARM barge move from Whittier to Fairbanks, Anchorage and other railbelt communities, such as Birchwood, Healy and Eielson AFB.

- **Trailers/Containers on Flat Cars** – TOFC/COFC moves north and south between Seward, Whittier, Anchorage and Fairbanks.
- **Coal** – Coal from Usibelli Coal Mine in Healy moves to the Fairbanks area for local markets.
- **Gravel** – Seasonally (April to October) aggregate products move from mines in the Matanuska-Susitna Valley to Anchorage.
- **Miscellaneous/In-state Local** – Other freight includes specialty movements of very large or oddly-shaped equipment and materials, as well as in-state shipments of cement, scrap metal, military equipment and pipe.

Freight-hauling involves capital- and maintenance-intensive expense. ARRC continues to seek ways to improve efficiency with newer equipment, time savings, fuel conservation, and less wear. One example is the recent purchase of four new van loaders used to load and unload containers and trailers to/from trucks and railroad flatcars. TOFC/COFC operations in Anchorage and Fairbanks are more efficient and reliable, lowering costs and improving service for intermodal customers.



*Four new van loaders were purchased and put into service by early 2021.*

## Mitigating Impacts

Railroads are ideal for safely and efficiently transporting heavy, bulky freight, ranging from natural resources such as petroleum, gravel and coal, to containerized cargo and heavy equipment. If not for the railroad, many more trucks would be needed to haul commodities over state and municipal roadways.

The table below illustrates how the Alaska Railroad mitigates the impact of moving natural resource products by keeping more than 200,704 dump trucks and fuel tank trucks off the road in 2022 alone. Also during 2022, the railroad moved 23,714 cargo-filled trailers and containers by railroad flatcar instead of by truck on the highway.

Hauling heavy, bulky commodities by rail also makes sense from a fuel conservation standpoint. According to the American Association of Railroads (AAR), a freight train can move a ton of freight an average of 484 miles on a single gallon of fuel.

According to a independent study produced for the Federal Railroad Administration, railroads on average are 3-4 times more fuel-efficient than trucks. Thanks to locomotive and other technology improvements, railroad fuel efficiency has improved substantially since 1980.

## Freight Equipment

The railroad's freight revenue service fleet includes 682 railcars, with 648 owned by ARRC and 34 leased. The railroad has developed a comprehensive fleet management program involving rehabilitation and replacement. The railroad's revenue-service freight fleet includes:

- **Flat Car** – Moves trailers and containers, pipe, lumber, and heavy equipment. *Fleet: 296 cars*
- **Air Dump** – Side-dumping railcars used primarily to transport ballast and other rock material for track maintenance. *Fleet: 31 cars*
- **Open Top Hopper** – Moves bulk solids, primarily coal and gravel, and unloads from the bottom. *Fleet: 326 cars*
- **Covered Hopper** – Moves dry bulk, including grain, fertilizer and cement. *Fleet: 29 cars*

ARRC also hauls cargo with cars owned or leased by customers, who contract ARRC to perform operating maintenance only.

- **Tank Car** – Moves liquid bulk cargo including jet fuel, gasoline, asphalt, vegetable oils, aircraft deicer, and various other chemicals. *Fleet: 209 privately leased/owned.*

## Positive impact of trains moving natural resources in 2022

Natural Resource	Railcars Hauled	Average Number of Trucks Equivalent to One Railcar <sup>1</sup>	Truck Moves Replaced <sup>1</sup>	Transport Miles <sup>2</sup>	Vehicle Miles Eliminated <sup>3</sup>
Petroleum, Gravel, and Domestic Coal <sup>2</sup>	28,913 Tankers and Hoppers	Petroleum: 5 tank trucks/ tanker railcar Gravel: 8 dump trucks/hopper Coal: 6 dump trucks/hopper	200,704 trucks not traveling on highways	Petroleum: 356 Gravel: 40 Domestic Coal: 111	19.7million vehicle miles not driven on highways



Assumptions (source Los Angeles Fire Department; Alaska Railroad):

<sup>1</sup> The number of trucks replaced by a railcar includes movement of the loaded truck and movement of the empty truck to be reloaded.

- **GRAVEL:** A road-legal 40-foot side-dump truck has a heaped capacity of 32 cubic yards = 25 tons gravel. Each hopper railcar holds about 100 tons of gravel – 100 divided by 25 tons / truck = 4 x both ways = 8 trucks / hopper railcar.
- **COAL:** Typical Usibelli coal is about 1 cubic yard per ton, so each 40-foot side-dump truck could haul 32 tons. Each hopper railcar holds about 100 tons of coal – 100 divided by 32 tons / truck = 3 x both ways = 6 trucks / hopper railcar.
- **REFINED PETROLEUM:** Large road-legal distribution tank trucks typically hold about 9,000 gallons. A rail tanker car typically holds 22,700 gallons – 22,700 divided by 9,000 / truck = 2.5 x both ways = 5 tanker trucks / tanker railcar.

<sup>2</sup> Petroleum trains operate between Fairbanks and Anchorage, 356 miles one-way. Gravel trains operate between Mat-Su Valley and Anchorage, 40 miles one-way. Coal trains operate between Healy and Fairbanks, 111 miles one-way.

<sup>3</sup> Refers to approximate vehicle miles traveled (VMT) eliminated from state highways, based on the number of equivalent trucks multiplied by miles the resource is moved.