

# Rail Transportation in Alaska

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By Greg Huff

**R**ail transportation is an important link in Alaska's development. Over twenty railroads operated in Alaska since the late 1800s. Railroads hauled hundreds of millions of tons of coal, gold, copper and other minerals from inland mines to tidewater ports, and transported millions of passengers. As the minerals played out or were no longer profitable, mines closed, community populations dwindled and slowly the railroads disappeared. Today two operational railroads remain in Alaska and only one, the Alaska Railroad (ARR), is fully operational. The other, White Pass and Yukon Railroad (WP & YR), is only providing limited summer passenger service.

These two railroads have had long histories in Alaska, far longer than any other Alaskan railroads. In long-term economic effects the ARR has, by far, had the most impact. This article explores the past of the these two remaining railroads and discusses their current and future outlook.

## White Pass and Yukon Railroad

The oldest of the two existing Alaskan railroads, The White Pass and Yukon Railroad, operated between 1900 and 1982. After a six year closure, the line will start limited operations again this summer. The new operations are limited to passenger service and will travel from Skagway to White Pass and return, a three hour round trip through 49 miles of spectacular scenery. The primary customers will be tour ship passengers. In the past the train traveled to Whitehorse and was a key transportation link to the rich Yukon mineral deposits.

Construction began on this narrow gauge railroad in 1898 and ended in 1900. The 110 miles of track (20 miles are in Alaska) provided a transportation link between the Yukon gold fields and tidewater. The railroad was profitable for some 20 years, but when gold production fell off in the 1920s and 1930s the railroad experienced many hard years.

The White Pass & Yukon revived during World War II. The railroad hauled military equipment from Skagway to the interior for construction of the Alcan Highway and Conal pipeline system. After the war the railroad returned to civilian management, in poor shape due to heavy use.

During the 1950s the line was upgraded and modernized. Revolutionary at the time, the railroad (in connection with its barge lines) introduced the first containerized freight service in Alaska.

The railroad remained operational until 1982 when mineral prices made the Cyprus-Anvil mine in the Yukon uneconomical to operate. Without ore haulage the railroad could not maintain a profitable operation. Before closing in 1982, the railroad carried about 600,000 tons of freight and 65,000 passengers annually. When the railroad closed it took about 160 year-round jobs and over 4.5 million in annual payroll from Skagway's economy.

The start-up this summer creates some 20 jobs for the summer months in Skagway, but without new developments the days of this railroad as a large employer are over.

**Over twenty railroads operated in Alaska since the late 1800s.**

The concept of the Alaska Railroad (ARR) existed for at least two decades before its construction. In fact, two companies attempted to build a railroad on the route of the present day ARR. The first attempt was the Alaska Central Railroad. Construction started in 1904 with its primary goal of reaching the rich coal fields in the Matanuska Valley. Four years and only 51 miles of track later the company was bankrupt. The Alaska Northern Railroad acquired the defunct railroad in 1908 and built an additional 21 miles of track to Kern (near Girdwood). However, without money to continue construction or operate the railroad's days were numbered.

By 1914, legislation passed empowering the President to buy or construct a railroad not more than 1,000 miles in length. The railroad was to connect Alaska's interior navigable waterways and rich coal and mineral deposits with an ice-free harbor. Two route proposals existed—Alaska Northern's Seward to Fairbanks route and the Copper River and Northwestern Railroad's proposed route from Cordova to Fairbanks. The federal government decided for the Alaska Northern route and purchased the 72 miles of existing track.

The "Government Railroad" project started in April 1914 with an initial appropriation of \$35 million. Com-

pletion of the project occurred nearly ten years later in July 1923. The cost was \$60 million and the 481 miles of mainline track was renamed the Alaska Railroad. It was the first frontier railroad financed entirely by the federal government.

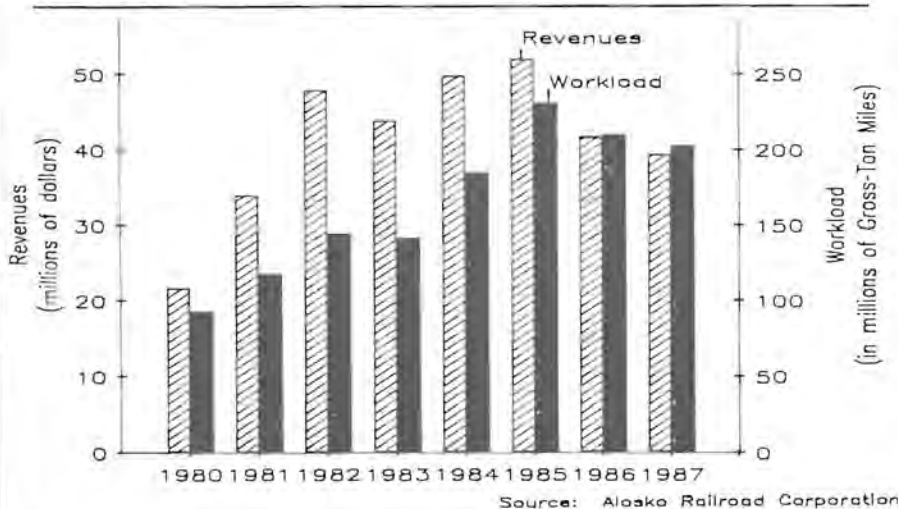
The railroad was built, but completion only connected the tracks from Seward to Fairbanks. Work remained before the ARR was on par with lower 48 railroad standards. However, that work was not to be done for some time. From 1924 to 1945 the railroad received no capital or operating appropriations from Congress and the railroad could not finance improvements due to the general lack of economic activity along the line. Deterioration of the already marginal railroad prompted some government officials to call for abandonment of the line.

World War II prevented the Alaska Railroad from being abandoned. The military provided ARR with a sharp increase in traffic, needed income and a link to Whittier. The 3.5 miles of tunnels to Whittier were completed in 1943, cutting the distance from Anchorage to ice-free tidewater by 51 miles. However, even with military assistance the railroad's equipment and property were in no better condition than before the war.

After the war the federal government considered abandoning the ARR, but decided to rebuild instead. By the end of the rehabilitation period in the early 1950s, at a cost of over \$95 million, the railroad was complete. During the 1960s two events caused long-term changes in the character of the railroad; initiation of railcar barge service between Alaska and both Canada and the continental U.S. and opening of year-round container ship service to the Port of Anchorage. The most important event was the railcar barge service. This service gave additional options to Alaska shippers and made it possible to ship items directly to Alaska without reloading in Seattle and Alaska ports.

In the 1970s another event transformed the railroad into its present form. During the construction of the trans-Alaska pipeline between 1974 and 1977 the railroad carried its most profitable volumes of traffic since World War II. More important the rail-

Figure 1  
Alaska Railroad Revenues and Workload, 1980-1987



road emerged from a period of heavy usage in better physical condition than it was at the beginning of the period. An infusion of federal dollars and equipment saw to that.

### The Alaska Railroad in the 1980s

During the early and mid 1980s the railroad experienced several changes, the most important being a transfer from federal to state ownership.

While discussion about a transfer of the ARR to state ownership had taken place since 1968, it was not until January 5, 1985 that the transfer happened. Alaska purchased the railroad from the federal government for \$22.3 million. The Alaska legislature created a public corporation called the Alaska Railroad Corporation (ARRC) to operate the railroad and manage its properties. In addition to the purchase price, the state contributed \$11 million for initial working capital and capital expenditures.

With three years of operation under its belt the ARRC has made a profit in two of the years. The railroad has increased retained earnings by over \$2 million to \$9.2 million (Table 1) and has received no subsidies from the state. This happened during a time of declining freight tonnage and revenues caused by a sagging Alaskan economy.

### Operations

The railroad has 481 miles of main-line track extending from Seward and Whittier through Anchorage to Fairbanks. Branch lines extend to Eielson Air Force Base, Anchorage and Fairbanks International Airports, Palmer, and Usibelli Coal Mine.

The principle freight of the railroad is bulk products such as coal, petroleum products, sand and gravel, pipe and freight classified interline and TOFC/COFC (Trailer-on-flatcar/Container-on-flatcar). The ARR also has an extensive passenger operation.

### Freight Market

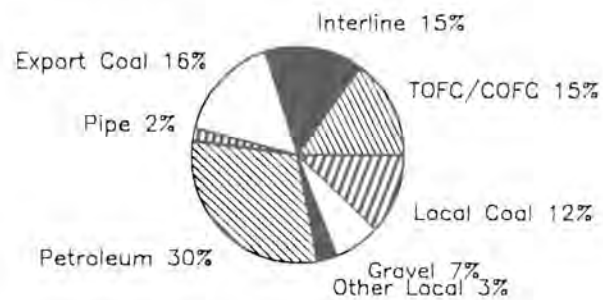
Two types of freight travel the railroad: Local freight and freight with connections to trucking lines and water carriers. Total freight revenues and ton-miles (one ton of revenue generating freight travelling one mile)

from 1980 to 1987 are illustrated in Figure 1.

The railroad also hauls drilling pipe from Whittier and Seward to Fairbanks, where it is transferred to trucks and delivered to the North Slope. The impact of slumping oil prices on drilling activity resulted in a dramatic drop in pipe freight from the peak of 74,000 tons in 1985.

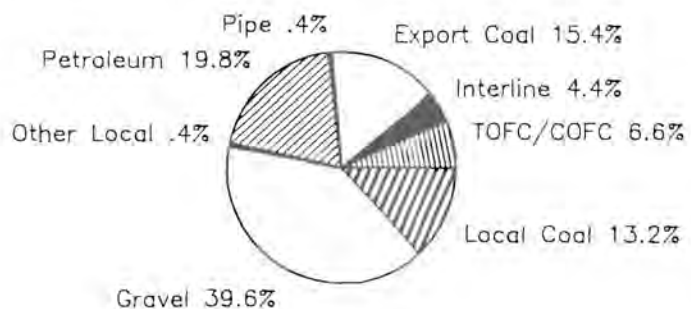
The export component consists almost exclusively of coal shipments to Korea. The Usibelli coal mine began exporting coal to Korea in 1985, when they struck a deal with Suneel Corporation. The coal is exported out

**Figure 2**  
Overview of Freight Markets, 1987 Revenues



Source: Alaska Railroad Corporation

**Figure 3**  
Overview of Freight Markets, 1987 Gross Tonnage



Source: Alaska Railroad Corporation

of the Seward coal port facilities. This \$21 million coal facility was constructed in 1984 and can handle 4 million tons of coal per year. In 1985 the railroad hauled 57,000 tons and approximately 600,000 to 700,000 tons each year since. Usibelli's contract with Suneel runs until 1992 and calls for as much as 900,000 tons of coal to be exported each year.

Freight is also transferred from the ARR at Nenana to river barges. This helps connect the railroad to communities along the Tanana and Yukon rivers.

### Passenger Service

The passenger service provided by the ARR includes three primary routes: Anchorage-Denali-Fairbanks, Portage-Whittier and Anchorage-Seward. The shuttle service between Portage and Whittier is the ARR's most traveled passenger route followed by the Anchorage/Fairbanks and Anchorage/Seward routes.

Passenger trains to Seward began regular service in 1986, after a 30-year absence. Although the railroad was the original link between Anchorage and Seward it was discontinued when highway travel became more popular.

The Whittier route is the only means of overland transportation to and from Whittier. The shuttle transports many Anchorage commercial fishermen and pleasure boaters who have their craft moored in Whittier. Passengers from the Alaska Marine Highway Systems route between Valdez and Whittier and tourists from tour ships docking at the Whittier Port also travel this route.

Local freight travels strictly between ARR served origins and destinations. It includes: coal moved from Healy to power plants at Clear Air Force Station, the University of Alaska in Fairbanks, Fort Wainwright and Eielson Air Force Base; gravel moved from Palmer to Anchorage transfer sites; and petroleum products between Fairbanks and Anchorage. The OWL (Oil Worker Limited) train transports jet and motor fuel from the petroleum refinery at North Pole to Anchorage daily. The OWL returns to Fairbanks with gasoline and other petroleum products. Revenues and tonnage generated from these sources are illustrated in Figure 2 and the change in revenues are contained in Table 1.

Revenues generated from gravel haulage were down 65% from 1985 levels, due to declining construction activity in Anchorage. In 1987, gravel contributed nearly 40% of the railroad's total tonnage (Figure 3), yet only 7% of its revenues.

Interline traffic is the interchange of goods between ARR and either Alaska Hydro-train or Canadian National Railway through the car-barge facility at Whittier. Currently, freight originating from the West Coast arrives from Seattle aboard Alaska Hydro-train and freight originating from the Midwest, East and Canada travels via the Canadian National Railway, from Prince Rupert to Whittier. In 1987, this freight component represented \$6.1 million in revenues, down from \$10.5 in 1985 because of a weak railbelt economy.

Currently, TOFC/COFC traffic originates from Seattle to Anchorage by Totem Ocean Trailer Express (TOTE) and Sea-Land Services (Sea/Land). However, in 1985 a new truck trailer "roll-on and roll-off" barge service was introduced between Seattle and Seward for transfer to the

**Table 1**  
**Alaska Railroad Corporation**  
**Revenues by Commodity and Other Key Figures**  
(in millions of dollars)

Commodity	1985	1986	1987
Pipe	\$3.3	\$2.2	\$ .7
Coal	9.4	10.1	11.2
Petroleum	11.8	10.2	11.6
Gravel	7.8	4.1	2.7
TOFC/COFC <sup>1</sup>	7.0	7.6	5.8
Interline	10.5	6.7	6.1
Misc. Local	2.1	.8	1.2
Total	52.0	41.7	39.4
Passenger	4.3	4.6	5.4
Real Estate	4.3	5.3	5.2
All Other	6.6	6.6	3.7
Total	15.3	16.5	14.3
Total Revenue	67.2	58.1	53.7
Total Expenses	60.1	59.1	50.7
Net Profit (Loss)	7.1	(1.0)	3.0
Retained Earnings	7.1	6.1	9.2

Source: Alaska Railroad Corporation  
TOFC/COFC: Trailer-on-flatcar and Container-on-flatcar

ARR. This service increased the railroad's market share of containerized cargo, but the barge company went under after two years. In 1987, the TOFC/COFC comprised 15% of revenues and 6.6% of the tonnage. Because of a down economy revenues from this source fell 24% below 1986 levels (Table 1).

The biggest increase in ARR's passenger load (Figure 4) can be attributed to the growing number of port calls by cruise ships. In 1983 nine ships stopped at Whittier, by the next year the number had nearly doubled and by 1987, port calls totaled 57. Tour ships are also docking at Seward, 19 calls in 1987 and 30 expected in 1988. The impact on railroad passenger counts is not as large as port calls to Whittier because of the highway link between Seward and Anchorage.

The most popular destination on the Anchorage-Denali-Fairbanks route during the summer months is Denali Park. Increased tourism and an increasing number of tour companies booking ARR travel makes the future look bright for this run. In 1984, the ARR began hauling sky domed cars purchased by Alaska Tours and Westours on its Anchorage-Denali-Fairbanks run, which has proved to be very successful.

This type of agreement reflects the railroad's new emphasis on passenger marketing. The ARR devised a contracting arrangement similar to that used in freight marketing and the ARR works in cooperation with tour operators, tour wholesalers, and travel agents.

Although passenger service has grown, the services still do not make money. The past few years the summer runs have covered operating expenses. The purchase of specially rebuilt self-propelled diesel railcars in late 1985 helped reduce the cost of wintertime rail service and made the service to Seward viable.

### Real Estate

The ARR controls approximately 38,000 acres of land from the port of Seward, Whittier and Anchorage inland to Fairbanks. Rentals received on leased real estate consist of about 10% of total revenues. These

revenues provide a buffer for the lean times. Railroad officials state that real estate rental is one of the most profitable portions of railroad operations.

### Work Force

The work force patterns follow the same trends as freight revenues and ton-miles. When traffic load increases so do jobs available with the railroad. During the boom of the 1980s employment levels peaked at 712 in 1984 as freight volumes were beginning to peak. The economic downturn beginning in 1986 forced employment down to 599 by 1987. The hardest hit community, in terms

Figure 4  
Alaska Railroad Total Passengers 1980-1987

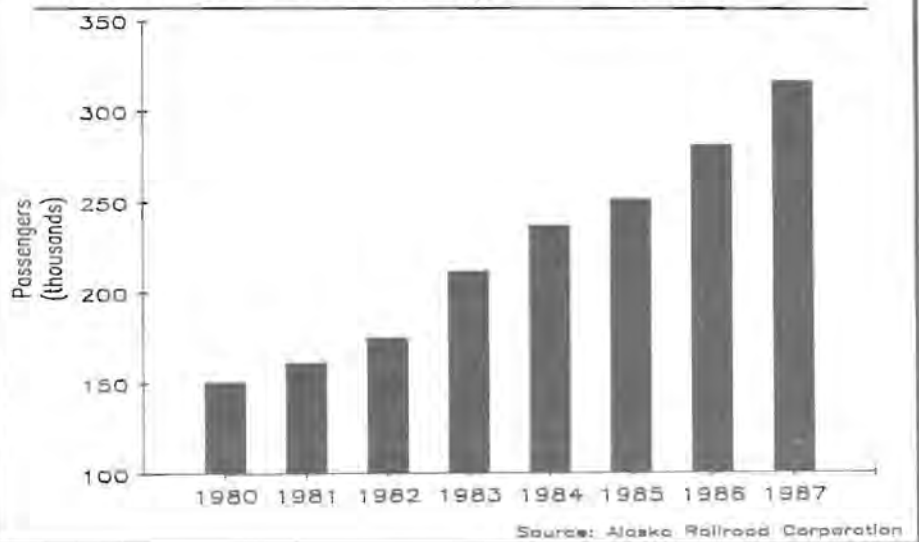


Table 2  
Alaska Railroad Employment  
By Location  
1980-1987

	1980	1981	1982	1983	1984	1985	1986	1987
Denana	6	6	6	4	4	3	4	4
Healy	41	22	19	19	19	17	16	13
Fairbanks	85	101	84	73	78	74	80	68
Summit/Talkeetna area	18	17	15	14	14	15	17	15
Wasilla	3	3	3	3	3	3	4	4
Eagle River	9	9	8	10	11	12	13	10
Anchorage	469	495	552	559	566	551	534	434
Moose Pass	6	6	7	6	5	6	6	4
Seward	6	5	5	5	8	13	13	10
Whittier	6	5	6	5	4	6	6	4
Total	649	669	705	698	712	700	693	566

Source: Alaska Department of Labor, Research and Analysis.

of jobs lost, was Anchorage, where 100 railroad workers were laid off in 1987. Employment by geographic distribution is contained in Table 2.

### Market Competition

The ARR is virtually free from competition in the transportation of bulk natural resources (coal, gravel and petroleum) because they are usually unsuitable for road haulage. The Interline and TOFC/COFC market is a different matter.

Cooperatively, the railroad receives piggyback traffic bound for Fairbanks from Sea/Land and TOTE, but it also indirectly competes with these firms with rail deliveries to Anchorage via railbarge from the Port of Whittier. The ARR is a major player in the competition between containerships and railbarges for sea delivery from the lower-48 and Canada. Overall, the ARR estimates it has about one-third of this market.

The ARR also has an impact on which port handles deliveries to the railbelt. For example, drilling pipe delivered by the railroad from Seward or Whittier to Fairbanks bypasses the ports of Anchorage and Valdez. Lumber and building products delivered by the railroad to Anchorage via the Port of Whittier bypasses the Port of Anchorage even though Anchorage is the cargo's destination.

The shippers' choice of carriers is usually based on price and service characteristics such as the value of cargo and delivery requirements. Deregulation of the railroad by the passage of the Staggers Rail Act of 1980 made it easy for the ARR to react to market forces. This strengthened ARR's competitive position in the interline and TOFC/COFC markets.

### Future

What does the future hold for the Alaska Railroad? Railroad officials are confident the railroad can continue to be profitable, even during times of falling revenues and tonnage. After two lean years indications are that revenues will increase in 1988 due to increased interline and TOFC/COFC freight volume.

What about expansion of the railroad to new areas? Construction costs at \$2 to \$3 million per mile make expansion too risky at this juncture. Furthermore, the ARR does not have the financial muscle to undertake a major expansion. There would need to be a coordinated effort by state government and private enterprise for expansion to occur.

The proposed move of the main ARR yard from Ship Creek to Eagle River is currently on the railroad's long term plan. As with an expansion, the ARR does not have enough financial strength to accomplish the move by itself.

A key element of the ARR's plans for the future call for an aggressive marketing program. The effort will establish the identity of the Alaska Railroad throughout the Northwest and Alaska shipping communities. One of the main goals of the ARR will be to provide competitive pricing.

The primary factor in ARR's long term success is the haulage of natural resources, raw and refined. This will continue to be the railroad's "bread and butter" for the foreseeable future.

### Conclusion

The Alaska Railroad has shaped Alaska's past and will have an opportunity to influence the state's future. By most measurements the ARR has been a success. It has connected Interior Alaska with open Pacific ports and assisted in developing the urban communities in the "railbelt" of Alaska. In 1920, about 10% of Alaska's population lived in the railbelt; today it is home to 70% of Alaska's residents.

After 71 years of federal ownership the fate of the railroad is now in the state's hands. The state struck a good deal when it purchased the railroad. With its debt wiped clean and an infusion of state start-up capital the ARR had a new beginning. After three years of state ownership the railroad has remained profitable and the track has been upgraded to its best condition ever. This makes the Alaska Railroad a transportation asset to the economy of Alaska.