

RAIL TRENDS



Railway Association
of Canada



2021



- — Class 1 railways
- Shortline railways
- Passenger railways

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MEMBER COMPANIES 2020

APR	Alberta Prairie Railway Excursions
AMTK	Amtrak
AMC	ArcelorMittal Infrastructure Canada S.E.N.C.
BCRY	Barrie-Collingwood Railway
BRR	Battle River Railway NGC Inc.
BCR	BCR Properties Ltd.
BSR	Big Sky Rail Corp.
BNSF	BNSF Railway Company
BTRC	Boundary Trail Railway Company Ltd.
CN	Canadian National Railway
CP	Canadian Pacific Railway
CBNS	Cape Breton & Central Nova Scotia Railway
CR	Capital Railway
CTRW	Carlton Trail Railway
CEMR	Central Manitoba Railway Inc.
CFL	Compagnie du Chemin de Fer Lanaudière Inc.
CSX	CSX Transportation Inc.
EMRY	Eastern Maine Railway Co.
ETR	Essex Terminal Railway Co.
EXO	exo
GEXR	Goderich-Exeter Railway Company Ltd.
RMR	Great Canadian Railtour Company Ltd.
GWR	Great Western Railway Ltd.
HBRY	Hudson Bay Railway
HCRY	Huron Central Railway Inc.



KRC	Keewatin Railway Company
KLTR	Knob Lake and Timmins Railway
LMR	Last Mountain Railway
GO	Metrolinx
NBSR	New Brunswick Southern Railway Company Limited
NCR	Nipissing Central Railway Company
NS	Norfolk Southern Railway
ONR	Ontario Northland Transportation Commission
OSR	Ontario Southland Railway Inc.
OBRY	Orangeville Brampton Railway
OVR	Ottawa Valley Railway
PDCR	Prairie Dog Central Railway — Vintage Locomotive Society Inc.
QGRY	Québec Gatineau Railway Inc.
QIO	Quebec Iron Ore Inc.
QNSL	Québec North Shore and Labrador Railway Company Inc.
RS	Roberval and Saguenay Railway Company
CRR	Romaine River Railway Company
SFP	SFP Pointe-Noire (Chemin de fer Arnaud Québec)
SFG	Société du chemin de fer de la Gaspésie
SSR	South Simcoe Railway
SOR	Southern Ontario Railway
SRY	Southern Railway of British Columbia Ltd. (and Southern Railway of Vancouver Island (SVI))
SLQ	St. Lawrence & Atlantic Railroad (Québec) Inc.
TTR	Toronto Terminals Railway Company Ltd.

CFC	Train Touristique de Charlevoix Inc.
PCHR	Trillium Railway Co. Ltd.
TRT	Tshiuetin Rail Transportation Inc.
UP	Union Pacific Railroad Company
VIA	VIA Rail Canada Inc.
WCE	West Coast Express Ltd.
WP&YR	White Pass and Yukon Route Railroad

Current membership:

<https://www.railcan.ca/who-we-are/rac-members/>

ASSOCIATE MEMBERS 2020

Absopulse Electronics Ltd.

Allied Track Services

Amsted Rail

Ashcroft Terminal

Atlantic Industries Limited

Bayside Canadian Railway

British Columbia Institute of Technology

CAD Railway Industries Ltd.

Canadian Heartland Training Railway Services Inc.

Canadian Rail Research Laboratory

Canadian Urban Transit Association

Cando Services Limited

Cégep de Sept-Iles

Confederation College of Applied Arts and Technology

CPCS Transcom Limited

Crescent Point Energy

CSTP Inc.

Davanac Inc.

Dillon Consulting Limited

Dominion Railway Services Ltd.

Drain-All Ltd.

Forma-Train

Frauscher Sensor Technology USA Inc.

GATX Rail Canada Corporation

Groupe Pelletier Entretien

Harsco Rail

J Lanfranco Fastener Systems Inc.

Koch Fertilizer Canada ULC

L.A. Hébert Ltée

McCarthy Tétrault

McIntosh Perry Consulting Engineers Ltd.

Messer Canada Inc.

Montréal Port Authority

NARSTCO

Ontario Steel Haulers Inc.

PNR Railworks Inc.

Rail Cantech

RailTerm

RailVision Analytics

RB&C Maintenance of Way

Red River College

RTC Rail Solutions Ltd.

Sait Polytechnic

Sands Bulk Transport

Sandy Cooke Consulting Inc.

Société du port ferroviaire de Baie-Comeau (SOPOR)

Soulanges Railway Services Inc.

Stantec Inc.

Suncor Energy Products Partnership

Toromont Cat

Torq Transloading

T-Rail Products Inc.

Tybo Contracting Ltd.

Universal Rail Systems

VIP Rail ULC

Wabtec Corporation

Walker Industries Inc.

Whiting Equipment Canada

X-Rail Signalisation Inc.

Current associate membership:

<https://www.railcan.ca/who-we-are/rac-associate-members/>

FOREWORD

This is the 29th edition of *Rail Trends*, the Railway Association of Canada's (RAC) annual report on the performance of Canada's railway industry.¹

This publication contains a rolling 10-year review of financial and statistical results, reflecting multiple aspects of railway performance in Canada.² This edition covers the 2011 to 2020 period.

The data in *Rail Trends* is reported by RAC member railways³, including:

- 38 shortline freight railways
- 6 Class 1 freight railways⁴
- 6 tourist railways
- 5 commuter railways
- 2 intercity passenger railways

Canadian Class 1 freight railways (CN and CP) account for the majority of freight rail activity in Canada. For that reason, most of the freight data presented in *Rail Trends* reflects Class 1 carriers.

While the RAC represents the vast majority of non-Class 1 railways in Canada, it does not represent that entire sector. Data pertaining to non-Class 1 railways in this report should be viewed with that lens.

1 This document contains revised data and, as such, supersedes earlier versions of *Rail Trends*. Please see Appendix D – Statistical Revisions for more information.

2 In some cases, relative variations reflect a change in the way certain members report data, or a change in membership.

3 Some railways perform more than one service. The list of railways provided is by the railways' primary service.

4 Data from the four U.S. Class 1 railways are treated as shortline data in *Rail Trends*.

The data in *Rail Trends* is categorized into the following sections:

- Freight Transportation
- Fuel
- Passenger transportation
- Safety
- Operating finances, investments, and taxes
- Employment
- Track and equipment

Data reflects performance in Canada only. All monetary statistics are in Canadian dollars. Figures may not add up to totals due to rounding. A glossary of railway terms appears in Appendix A, conversion factors can be found in Appendix B, safety-specific definitions are provided in Appendix C, and notes on statistical revisions are provided in Appendix D.



READERS' COMMENTS

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EXECUTIVE SUMMARY

2020 was a year like no other. The COVID-19 pandemic caused unprecedented impacts on human health, workers, businesses, and governments in Canada and around the world. But one thing did not change, and that was the perseverance of Canadian railways, which continued to deliver services to the industries, communities, and passengers that depend on them from coast to coast to coast.

The freight railway sector showed its resilience, effectively managing the uncertainty and volatility presented by the COVID-19 pandemic. Railways operated efficiently under evolving restrictions, protecting employee health while delivering essentials such as energy products, personal protective equipment, medicines, vaccines, and agricultural and food products. On the passenger side, intercity and commuter railways kept trains running, providing transportation services to essential workers and Canadians that rely on them. Unfortunately, restrictions caused many tourism railways to cancel their 2020 operations altogether.

Throughout the pandemic, railways did not lose sight of their strategic priorities and stayed on the [Right Track](#). In fact, 2020 was a year of records in the areas of safety and fuel-efficiency.

RAC members' top priority has always been **safety**, and the 2020 safety performance data reflects this. Rail safety improved in 2020 as the total number of accidents decreased by 15.7% compared to 2019. In 2020, the freight accident rate improved by 15.1% to 1.82 accidents per billion gross ton-miles – the second lowest rate in the past decade. The dangerous goods accident rate improved by 35.6% to 0.17 accidents per 1,000 dangerous goods carloads, which is the lowest rate in the past decade.

Rail will continue to play a key role in helping Canada decarbonize and achieve its targets of reducing GHG emissions by 40-45% below 2005 levels by 2030, and net-zero by 2050. Through operational efficiencies and investments in fleet modernization, Canada's railways continue to deliver greater fuel efficiency as part of their commitment to **environmental responsibility**. In 2020, freight fuel efficiency improved by 4.3% to 696 revenue ton-miles per gallon (or 223 revenue tonne-kilometres per litre), the best on record.



Railways provide a low-cost, low-emissions transportation option for shippers to get their products to market. In 2020, railway freight rates decreased by 1.9% to less than 5 cents per revenue ton-mile. Despite volatility in traffic volumes from month to month, as well as by commodity sector, in 2020, total freight volumes were only slightly lower than in 2019. And despite the elevated levels of uncertainty, Canadian railways continued to make significant capital investments to facilitate future **growth**. In 2020, railways invested \$2.6 billion into their Canadian assets, which is the second highest level on record, behind \$3.1B in 2019. RAC members also contributed \$1.9 billion in various taxes to Canadian governments.

Improvements in safety, environmental, and economic performance all have one thing in common: they're driven by **innovation**. Canada's railways continue to innovate and invest in state-of-the-art technologies. In recent years, railways have leveraged big data and made significant advancements in automated inspections and predictive analytics to enhance safety. Investments in modern locomotives and operational improvements are driving fuel-efficiency, while an expanding suite of digital applications are supporting the growth of rail shippers.

DELIVERING FOR CANADIANS: A 10-YEAR SNAPSHOT OF RAIL IN CANADA

	2011	2019	2020
FREIGHT TRAFFIC			
Revenue ton-miles (billions)	247.2	312.2	309.8
Revenue tonne-kilometres (billions)	360.9	455.8	452.3
Gross ton-miles (billions)	466.6	592.9	581.0
Gross tonnes-kilometres (billions)	681.2	865.5	848.1
Freight train-miles (thousands)	66,808.6	68,376.7	63,382.8
Freight train-kilometres (thousands)	107,517.7	110,041.3	102,004.4
Carloads originated (thousands)	4,062.4	5,708.4	5,497.2
Tons originated (thousands)	338,764.1	366,956.4	366,396.2
Tonnes originated (thousands)	307,326.6	332,902.5	332,394.2
Intermodal carloads originated (thousands)	890	1,927	1,905
Freight revenue per ton-mile (cents)	4.17	5.07	4.97
Freight revenue per tonne-km (cents)	2.86	3.47	3.41
Gallons of fuel consumed (millions)	461.0	498.1	460.7
Litres of fuel consumed (millions)	2,095.8	2,264.2	2,094.3
RTM per gallon of fuel consumed	566.1	666.9	695.9
RTK per litre of fuel consumed	181.8	214.2	223.5



	2011	2019	2020
PASSENGER TRANSPORTATION			
Total passengers carried (thousands)	73,080	107,557	23,979
FINANCIAL INFORMATION			
Operating expenses (millions)	9,773.6	12,626.2	11,763.8
Operating revenues (millions)	11,533.5	17,903.6	16,764.1
Operating income (millions)	1,759.9	5,277.5	5,000.3
INVESTMENTS			
Total investments (millions)	1,845.1	3,119.8	2,629.5
TAXES			
Taxes paid (millions)	957.2	2,120.4	1,852.4
EMPLOYMENT			
Employees	33,703	36,196	33,321
Average wage per employee	83,163	99,332	100,886
TRACK AND EQUIPMENT			
Total miles of freight track operated	27,102	26,499	26,551
Total kilometres of freight track operated	43,617	42,645	42,730
Freight cars (thousands)	72	61	62
Locomotives	2,978	3,840	3,755

FREIGHT TRANSPORTATION

REVENUE TON-MILES, GROSS TON-MILES AND FREIGHT TRAIN-MILES

The COVID-19 pandemic impacted the freight sector throughout 2020. While the sector experienced volatility in traffic volumes from month to month, as well as by commodity sector, in 2020 total freight volumes were only slightly lower than in 2019. In 2020, freight rail traffic, measured by revenue ton-miles (RTMs), decreased by 0.8% from 2019, but was 3.9% above the 2015-2019 average. The freight sector's workload, measured by gross ton-miles (GTMs), decreased by 2.0% from 2019, but was 2.9% above the 2015-2019 average.

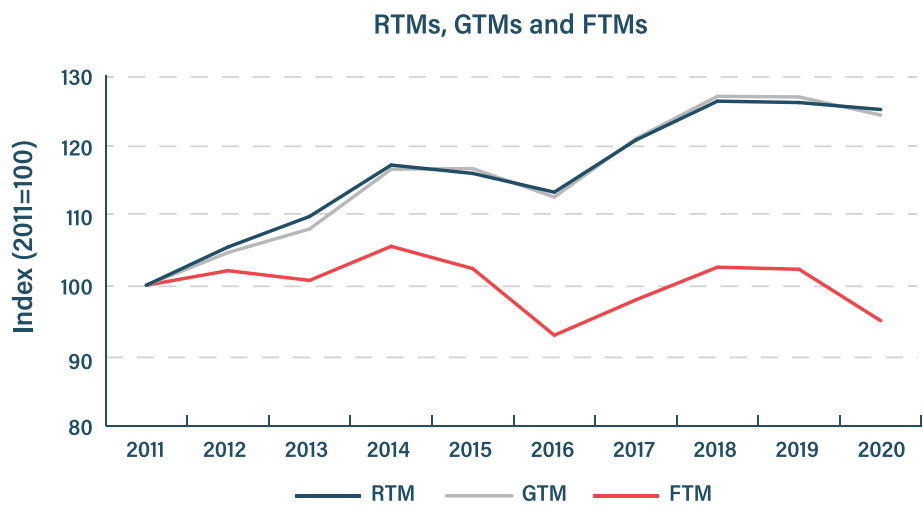
In contrast, the distance travelled by Canada's freight trains, measured by freight train-miles (FTMs), decreased by 7.3% from 2019, and was 4.8% below the 2015-2019 average.

Over the past decade, FTMs have remained relatively stable while RTMs and GTMs have trended upwards, increasing by a total of 25.3% and 24.5%, respectively. Much of this improvement in operational efficiency can be attributed to increases in the average length and weight of trains (see [Freight Train Performance](#) on page 26).

RTMS, GTMS AND FTMS

	RTM Millions	RTK Millions	GTM Millions	GTK Millions	FTM Thousands	FTK Thousands
2011	247,187	360,857	466,588	681,151	66,809	107,518
2012	260,723	380,617	488,518	713,165	68,196	109,750
2013	271,736	396,695	504,553	736,574	67,299	108,307
2014	289,890	423,197	544,443	794,808	70,526	113,500
2015	286,869	418,786	545,136	795,819	68,407	110,091
2016	280,217	409,075	525,771	767,549	62,023	99,816
2017	298,825	436,240	565,148	825,034	65,437	105,310
2018	312,758	456,581	593,461	866,366	68,571	110,354
2019	312,216	455,790	592,862	865,491	68,377	110,041
2020	309,831	452,308	580,971	848,133	63,383	102,004

Note: See appendix D for an explanation on revised data.



CARLOADS

In 2020, the number of Canadian originating carloads decreased by 3.7%, from 5.7 million in 2019 to 5.5 million. This peculiarity of a downturn in traffic is in contrast to the long-term trends. The overall weight of goods transported by RAC members decreased by only 0.2% compared to 2019. As a result, the average tonnage per carload increased by 3.7%.⁵

Over the past decade, originating carloads have increased by 35.3%, outpacing the 8.2% growth in originating tonnage, leading to lower average carload weights. While this at first may seem counterintuitive since railways are investing in higher-capacity railcars, much of this trend can be attributed to a change in the mix of traffic with the significant growth of intermodal shipments. Intermodal carloads have been growing at more than twice the rate of total carloads, and the average weight of an intermodal carload, even with double stacking, is significantly less than that of a non-intermodal carload.⁶

5 Tons (tonnes) per carload is calculated by dividing tons (tonnes) originated by carloads originated.

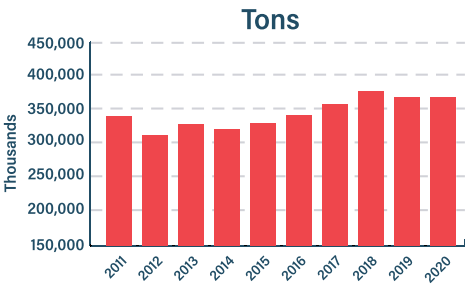
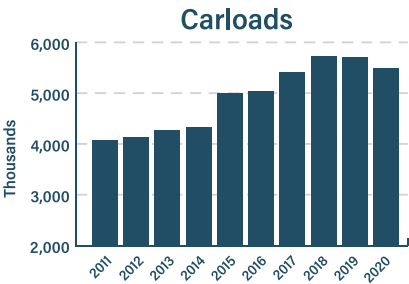
6 Data from Statistics Canada's *Monthly Railway Carloadings* shows that in 2020, the average weight of a non-intermodal carload was 85.1 tonnes, compared to 14.9 tonnes for an intermodal unit. Double stacking involves carrying two layers of intermodal containers on a single railcar.

ORIGINATING CARLOADS AND TONNAGE

	Carloads originated Thousands	Tons originated Thousands	Tonnes originated Thousands
2011	4,062	338,764	307,327
2012	4,120	311,619	282,700
2013	4,269	327,145	296,786
2014	4,332	319,781	290,105
2015	4,995	328,212	297,754
2016	5,035	340,628	309,017
2017	5,410	357,152	324,008
2018	5,732	376,625	341,674
2019	5,708	366,956	332,903
2020	5,497	366,396	332,394

Note: See appendix D for an explanation on revised data.

Originating carloads and tonnage



FREIGHT CARLOADS AND REVENUES BY COMMODITY

The RAC tracks 11 commodity groupings of freight moved by railways in Canada. In 2020, intermodal, minerals, agriculture, and fuel & chemicals were the largest groupings of carloads transported by Canada's railways, accounting for over three-quarters of total carloads.

There were significant changes in carloads by commodity in 2020 compared to previous years, owing in part to the impacts of the COVID-19 pandemic. Demand for Canada's agricultural products remained strong, however, there was a global container shortage affecting intermodal shipments, most automotive manufacturers were shut down for approximately two months, and the demand for energy fell significantly. The largest increases in 2020 were agriculture (76,700 carloads or 14.2%) and minerals (58,800 carloads or 5.7%); the largest decreases were fuels & chemicals (-110,000 carloads or -17.0%), machinery & automotive (-54,400 carloads or -26.0%), and coal (-37,200 carloads or -10.3%).⁷

⁷ The largest increases and decreases are listed by absolute number of carloads, and not percentage.

ORIGINATING CARLOADS BY COMMODITY GROUPING

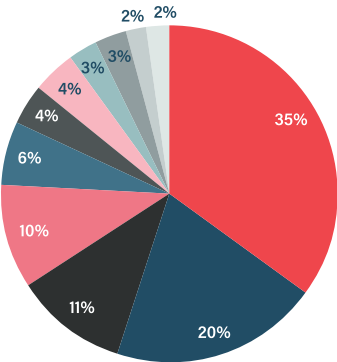
	Agriculture	Coal	Minerals	Forest products	Metals	Machinery & automotive	Fuel & chemicals	Paper products	Food products	Manufactured & miscellaneous	Intermodal	Total Commodities*
2011	466,305	348,556	790,520	228,448	160,827	186,522	432,657	157,780	54,948	94,935	890,168	3,811,666
2012	472,474	353,201	805,952	209,654	161,541	220,216	479,669	149,740	60,906	93,129	946,223	3,952,706
2013	465,816	383,013	810,750	215,254	150,906	199,068	540,411	150,029	56,405	103,605	987,186	4,062,442
2014	547,122	336,632	676,865	213,980	157,086	193,294	593,186	139,110	61,993	101,733	1,072,278	4,093,278
2015	537,013	303,932	854,186	235,169	150,273	178,429	579,254	133,800	62,160	112,194	1,663,988	4,830,398
2016	511,228	309,403	859,479	257,774	151,609	199,927	565,331	130,882	68,951	99,480	1,669,892	4,823,956
2017	527,271	326,228	937,737	251,273	165,404	189,632	617,792	129,675	79,041	118,651	1,826,225	5,170,929
2018	542,722	337,323	1,060,395	260,377	178,784	214,592	622,769	140,822	78,864	161,935	1,878,392	5,496,976
2019	538,726	361,067	1,027,286	225,031	164,230	208,879	645,268	127,821	80,009	178,379	1,927,291	5,483,989
2020	615,441	323,880	1,086,036	213,474	156,271	154,487	535,268	113,001	87,050	194,640	1,905,493	5,385,041

* Not all RAC member companies report carloads originated by commodity grouping. As a result, the total number of carloads originated by commodity grouping is lower than the total number of carloads originated ([page 21](#)).

The commodity groupings with a higher number of carloads tend to generate higher revenues, as would be expected, however there are some notable differences. As documented in public reports, freight revenues per carload and per ton-mile vary by commodity, and the average length of haul can vary by commodity as well. In 2020, intermodal, agriculture, fuel & chemicals, and minerals were the largest revenue generators for Canadian railways, accounting for two-thirds of freight revenues.

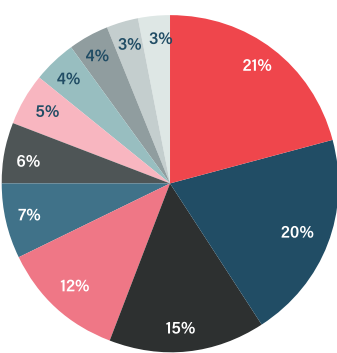
The only revenue increases in 2020 were agriculture (\$302 million or 14.2%), manufactured & miscellaneous (\$62 million or 11.9%) and food products (\$47 million or 14.4%); the largest decreases were fuel & chemicals (-\$378 million or -17.7%), minerals (-\$154 million or -10.0%), machinery & automotive (-\$142 million or -22.5%) and coal (-\$112 million or -13.4%).⁸

Originating carloads by commodity grouping, 2020



- Intermodal
- Minerals
- Agriculture
- Fuel & chemicals
- Coal
- Forest products
- Manufactured & miscellaneous
- Machinery & automotive
- Metals
- Paper products
- Food products

Freight revenue by commodity grouping, 2020



- Intermodal
- Agriculture
- Fuel & chemicals
- Minerals
- Forest products
- Coal
- Manufactured & miscellaneous
- Machinery & automotive
- Metals
- Paper products
- Food products

⁸ The largest increases and decreases are listed by absolute revenues, and not percentage.

FREIGHT REVENUE BY COMMODITY GROUPING (\$ MILLIONS)

	Agriculture	Coal	Minerals	Forest products	Metals	Machinery & automotive	Fuel & chemicals	Paper products	Food products	Manufactured & miscellaneous	Intermodal	Total Commodities*
2011	1,297	713	898	564	424	381	928	427	146	133	1,893	7,805
2012	1,374	749	926	611	455	508	1,155	411	161	153	1,997	8,499
2013	1,433	833	973	660	448	481	1,421	406	155	174	2,019	9,002
2014	1,725	760	1,030	702	501	481	1,756	393	181	177	2,162	9,869
2015	1,871	632	1,336	857	487	541	1,934	426	235	192	2,171	10,682
2016	1,731	628	1,061	952	429	567	1,719	423	258	181	2,135	10,083
2017	1,865	695	1,101	918	478	552	1,824	425	295	221	2,354	10,728
2018	2,040	768	1,555	968	557	664	1,944	477	305	510	2,566	12,355
2019	2,129	837	1,544	899	513	630	2,137	445	326	516	2,580	12,557
2020	2,431	725	1,390	868	481	489	1,759	415	373	578	2,553	12,061

*Not all RAC member companies record revenue from carloads originated by commodity grouping. The data in this section reflects reported freight revenue from originated carloads grouped by commodity grouping. As a result, total freight revenue from carloads originated by commodity grouping is lower than total freight operating revenue ([page 47](#)).

FREIGHT TRAIN PERFORMANCE

FREIGHT TRAIN PERFORMANCE INDICATORS

	Average length of haul by Class 1 railways		Average length of haul by shortline railways		Average cars per freight train	Average train weight
	Miles	kilometres	Miles	Kilometres	Cars	tons
2011	849	1,366	106	171	92	6,985
2012	868	1,396	128	206	95	7,165
2013	871	1,402	127	204	98	7,499
2014	908	1,462	132	213	100	7,720
2015	943	1,517	142	228	102	7,968
2016	937	1,508	137	220	108	8,477
2017	947	1,524	129	208	114	8,636
2018	930	1,496	120	192	113	8,654
2019	920	1,481	118	190	114	8,670
2020	941	1,515	115	185	120	9,159

Note: See appendix D for an explanation on revised data.

In 2020, shipments transported by Canada's Class 1 railways (CN and CP) travelled an average distance⁹ of 941 miles (1,515 kilometres), up 2.3% from 2019. Shipments carried by Canada's shortline railways travelled an average distance of 115 miles (185 kilometres). The average length of haul varies significantly across shortline railways due to variations in the length of track operated.¹⁰

⁹ The average length of haul is calculated by dividing revenue ton-miles (revenue tonne-kilometres) by total tons (tonnes). Data from railways that don't report both metrics are excluded from the calculation.

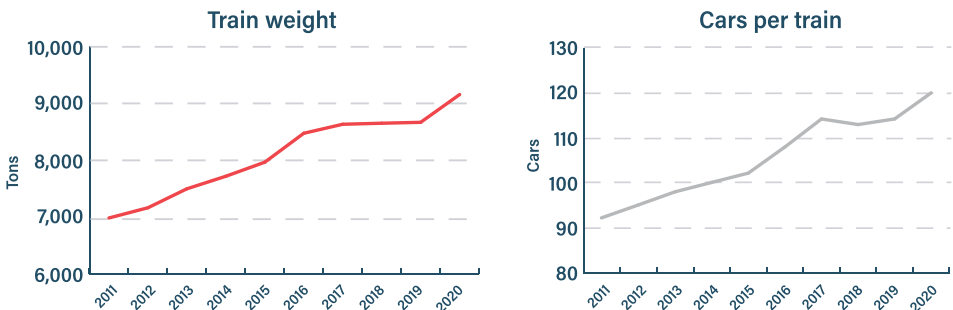
¹⁰ In 2020, the length of track operated by Canadian shortline railways ranged from just a few miles to over 700 miles, with a median length of around 80 miles and average of around 135.

Average length of haul



As mentioned earlier in the report, average train length and weight continue to trend upwards. In 2020, the average number of cars¹¹ per freight train increased by 5.3% from 2019 and by 8.9% compared to the 2015-2019 average. The average train weight¹² increased by 5.6% from 2019 and by 8.0% compared to the 2015-2019 average. Over the past decade, average train weight has increased by a total of 31.1%, from under 7,000 tons in 2011 to over 9,000 tons in 2020.

Average train size



¹¹ The average number of cars per freight train is calculated by dividing loaded & empty car-miles (car-kilometres) by freight train-miles (train-kilometres). Data from railways that don't report both metrics are excluded from the calculation.

¹² Average train weight is calculated by dividing gross ton-miles by freight ton-miles. Data from railways that don't report both metrics are excluded from the calculation.

FREIGHT RATES

Freight revenue per ton-mile is often viewed as a proxy for railway rates because it shows the level of revenue collected by railways for moving goods over a certain distance.¹³ In 2020, railway freight rates decreased by 1.9%, down to 4.97 cents per RTM. In 2020, commodity prices and industrial product prices also decreased, while consumer prices increased by 0.7%.

Since 1988, railway freight rates have increased by a total of 36.2%, which is less than the increases in commodity prices (42.8%), industrial product prices (68.7%), and consumer prices (92.4%).

FREIGHT RATES AND OTHER PRICE INDICES

	Freight revenue (cents) per		Freight revenue per RTM index	Commodity price index	Consumer price index	Industrial product price index
	RTM	RTK	1988=100	1988=100	1988=100	1988=100
2011	4.17	2.86	114.2	246.6	168.4	153.8
2012	4.34	2.97	119.0	232.4	170.9	155.5
2013	4.43	3.03	121.4	231.6	172.5	156.2
2014	4.58	3.14	125.6	226.8	175.8	160.0
2015	4.63	3.17	126.7	144.9	177.8	158.7
2016	4.51	3.09	123.7	131.8	180.3	158.4
2017	4.55	3.12	124.8	152.8	183.1	163.3
2018	4.82	3.30	132.0	166.4	187.4	169.6
2019	5.07	3.47	138.8	160.0	191.0	169.4
2020	4.97	3.41	136.2	142.8	192.4	168.7

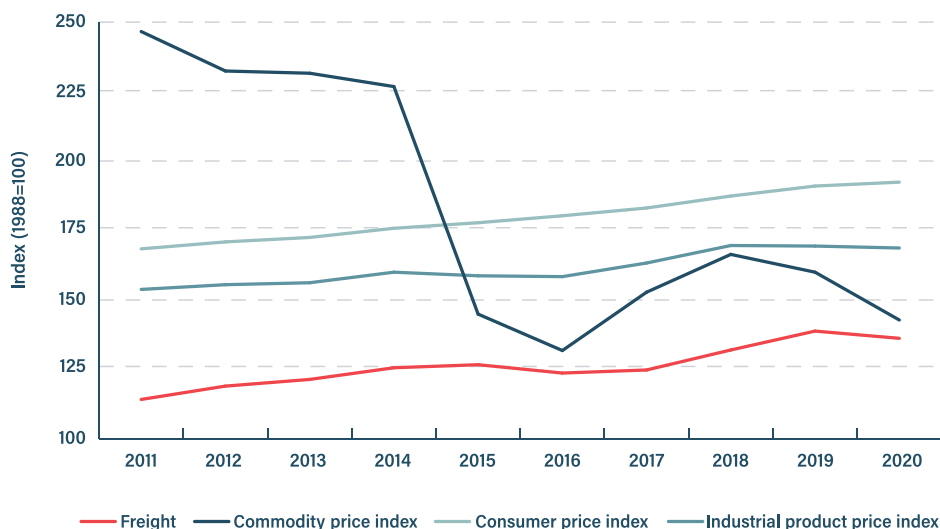
Sources: Bank of Canada (commodity price index); Statistics Canada (consumer price index; industrial product price index).

Note: The Bank of Canada regularly revises its commodity price data.

Note: See appendix D for an explanation on revised data.

13 Freight revenue per ton-mile is calculated by dividing freight operating revenue by revenue ton-miles (revenue tonne-kilometres).

Freight rates vs other price indices



PRODUCTIVITY

Freight railway labour productivity can be measured using RTMs per freight employee.¹⁴ Using this measure, employee productivity increased by 6.5% in 2020, as the decrease in freight employment was greater than the decrease in RTMs. The number of road miles per employee¹⁵ also increased in 2020, as track length remained stable while freight employment decreased.

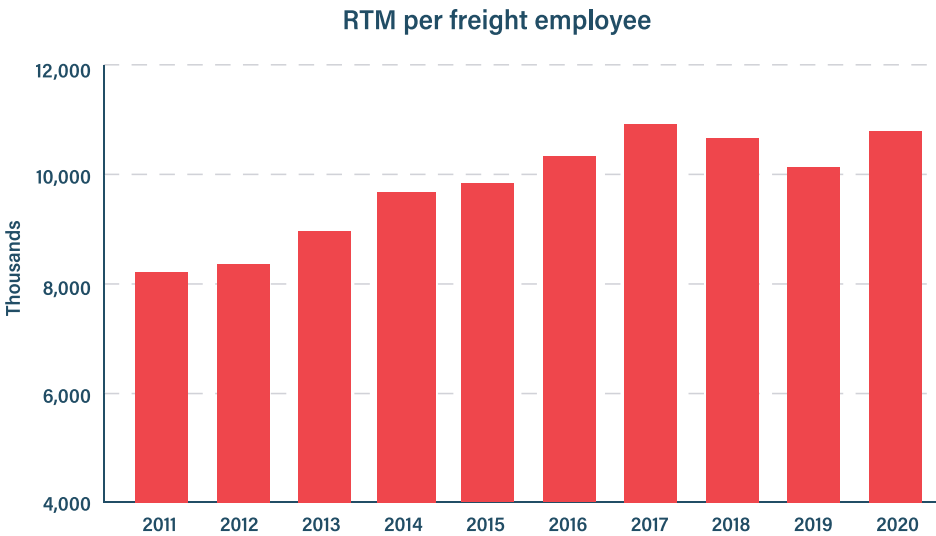
¹⁴ Freight rail labour productivity is calculated by dividing the annual sum of revenue ton-miles by the average number of freight railway employees. Data from railways that don't report both metrics are excluded from the calculation. Freight rail sector employment is not shown in the *Rail Trends* report.

¹⁵ Road miles per employee is calculated by dividing freight road miles operated by freight employment. Data from railways that don't report both metrics are excluded from the calculation.

PRODUCTIVITY MEASURES

	RTM per freight employee Thousands	RTK per freight employee Thousands	Road miles per freight employee	Road kilometres per freight employee
2011	8,221	12,001	0.90	1.45
2012	8,362	12,207	0.86	1.39
2013	8,966	13,090	0.90	1.45
2014	9,683	14,136	0.90	1.45
2015	9,834	14,356	0.93	1.50
2016	10,329	15,079	1.00	1.61
2017	10,917	15,938	0.96	1.55
2018	10,666	15,571	0.87	1.40
2019	10,137	14,799	0.85	1.37
2020	10,795	15,759	0.90	1.45

Note: See appendix D for an explanation on revised data.



FUEL

In 2020, Canadian railways consumed 461 million gallons (2.1 billion litres) of fuel, a reduction of 7.5% compared to 2019, and 3.2% below the 2015-2019 average. Passenger rail fuel consumption decreased by 14.6 million gallons (-48.7%), while freight rail fuel consumption decreased by 22.8 million gallons (-4.9%). Passenger rail, despite accounting for around 5% of industry fuel consumption in typical years, was responsible for nearly 40% of the reduction in total industry fuel consumption in 2020.

The cost of diesel fuel decreased by 20.2%, from \$4.03 per gallon (\$0.89 per litre) in 2019 to \$3.22 per gallon (\$0.71 per litre) in 2020.

FUEL CONSUMPTION AND COST

	Total fuel consumption		Freight fuel consumption (incl. yard and work train fuel)		Freight fuel consumption (excl. yard and work train fuel)		Passenger fuel consumption		Cost of diesel fuel	
	Gallons (Thousands)	Litres (Thousands)	Gallons (Thousands)	Litres (Thousands)	Gallons (Thousands)	Litres (Thousands)	Gallons (Thousands)	Litres (Thousands)	Per gallon (\$)	Per litre (Cents)
2011	461,017	2,095,818	436,681	1,985,186	424,866	1,931,474	24,336	110,632	4.02	88.48
2012	469,695	2,135,270	446,932	2,031,788	434,514	1,975,334	22,763	103,481	4.26	93.76
2013	462,907	2,104,410	441,563	2,007,379	429,922	1,954,458	21,344	97,031	4.45	97.93
2014	484,211	2,201,260	462,838	2,104,096	446,587	2,030,216	21,373	97,164	4.72	103.91
2015	470,084	2,137,037	445,859	2,026,907	431,476	1,961,524	24,225	110,130	3.45	75.99
2016	441,145	2,005,479	416,916	1,895,331	403,995	1,836,593	24,229	110,148	3.02	66.33
2017	475,619	2,162,199	449,509	2,043,500	435,981	1,982,001	26,110	118,699	3.43	75.54
2018	494,194	2,246,644	467,418	2,124,919	454,246	2,065,037	26,776	121,725	4.24	93.20
2019	498,062	2,264,237	468,153	2,128,266	454,315	2,065,359	29,910	135,972	4.03	88.70
2020	460,670	2,094,250	445,252	2,024,159	432,907	1,968,037	15,418	70,092	3.22	70.80

Note: In 2019, fuel reported for a passenger yard was re-allocated from yard service to passenger service.

Note: See appendix D for an explanation on revised data.

FREIGHT FUEL EFFICIENCY

In 2020, since the reduction in freight fuel consumption (-4.9%)¹⁶ was greater than the reduction in RTMs (-0.8%), freight fuel efficiency improved by 4.3% to 696 RTMs per gallon (or 223 RTKs per litre), the best on record. This is quite the achievement, showing that freight railways were able to efficiently handle the volatility and other challenges caused by the COVID-19 pandemic. The improvement in freight fuel efficiency is likely attributed to an increase in the average weight and length of trains, as well as the acquisition of modern, fuel-efficient locomotives and parking and retiring of older, less fuel-efficient locomotives.¹⁷

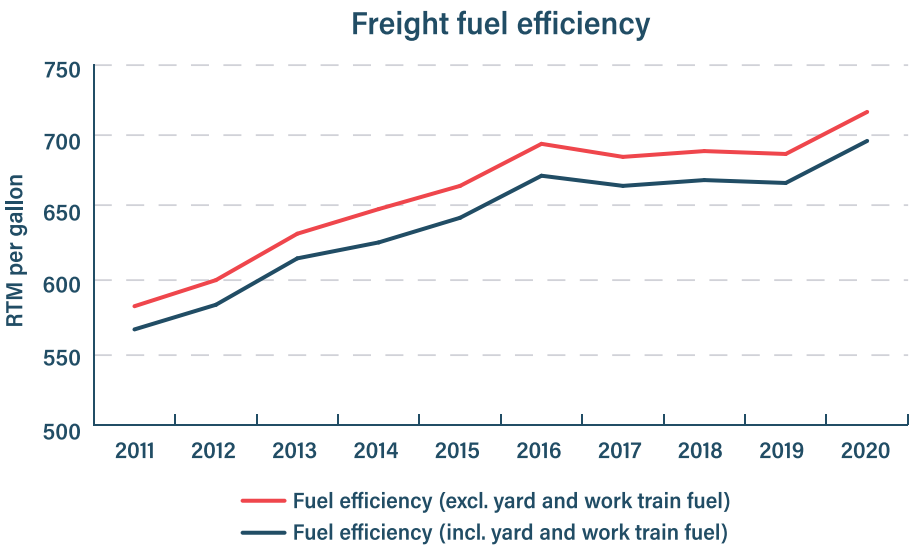
¹⁶ Freight fuel consumption, including yard and work train fuel, decreased by 4.9%. Freight fuel consumption, excluding yard and work train fuel, decreased by 4.7%.

¹⁷ In 2020, average cars per freight train increased by 5.3%, average train weight increased by 5.6%, and the number of Class 1 active Tier 3 and Tier 4 locomotives increased while the number of active locomotives with no tier decreased.

FREIGHT FUEL EFFICIENCY

	Fuel efficiency (incl. yard and work train fuel)		Fuel efficiency (excl. yard and work train fuel)	
	RTM per gallon	RTK per litre	RTM per gallon	RTK per litre
2011	566	182	582	187
2012	583	187	600	193
2013	615	198	632	203
2014	626	201	649	208
2015	643	207	665	214
2016	672	216	694	223
2017	665	213	685	220
2018	669	215	689	221
2019	667	214	687	221
2020	696	223	716	230

Note: See appendix D for an explanation on revised data.



PASSENGER TRANSPORTATION

All segments of passenger railways – commuter, intercity and tourist – faced challenges throughout the pandemic as ridership collapsed and people stayed home. Despite the unprecedented drop in ridership, railways kept trains running, providing essential services to Canadians. However, most tourism operators were not open for passenger service during the 2020 season.

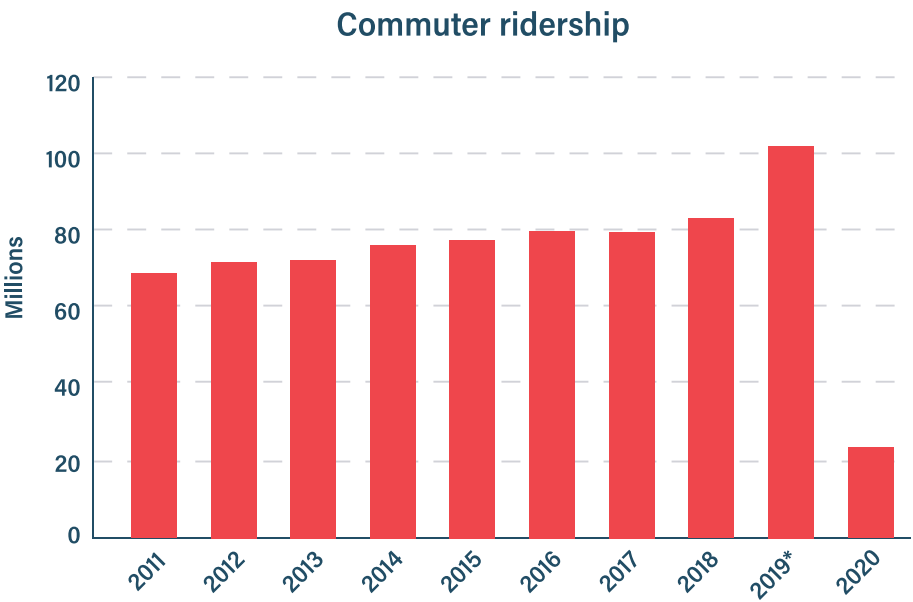
COMMUTER RAIL

From 2019 to 2020, commuter rail ridership fell by 77.7%, from 101.9 million to 22.8 million commuters. Commuter railways continued to provide essential transportation services, and as such, the decrease in train miles (-40.8%, not shown) and fuel consumption (-39.8%, not shown) was not as great as the reduction in ridership. Due to the continued provision of essential services, efficiency metrics for commuter railways worsened in 2020.¹⁸

¹⁸ While not shown here, such metrics include calculations such as the average number of commuters per train or fuel consumption per commuter (fuel consumption per commuter is available in RAC's [Locomotive Emissions Monitoring Reports](#)).

COMMUTER RIDERSHIP

Commuters (millions)	
2011	68.4
2012	71.5
2013	72.0
2014	75.9
2015	77.2
2016	79.6
2017	79.3
2018	82.8
2019*	101.9
2020	22.8



* The significant increase in commuters from 2018 to 2019 was due to a combination of increasing ridership on commuter rail services as well as the inclusion of one additional rail service beginning in 2019.

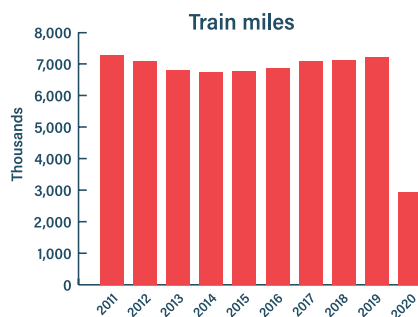
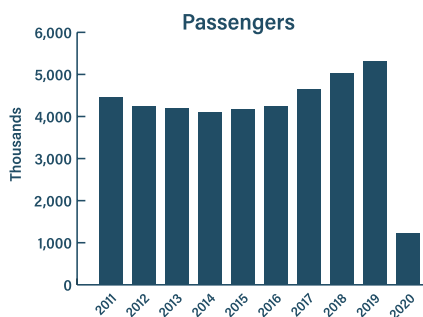
INTERCITY PASSENGER RAIL

From 2019 to 2020, the number of intercity railway passengers decreased from 5.3 million to 1.2 million (-76.9%). Intercity passenger railways continued to provide essential services to Canadians. The 76.9% drop in ridership was met with a more modest reduction in train miles (-59.4%). Trains also became shorter to accommodate lower ridership levels, as the reduction in passenger car miles (-67.5%) was greater than the reduction in train miles.

INTERCITY PASSENGER RAIL STATISTICS

	Passenger cars in service	Number of passengers (Thousands)	Passenger		Passenger train		Passenger car	
			Miles (Millions)	Kilometres (Millions)	Miles (Thousands)	Kilometres (Thousands)	Miles (Thousands)	Kilometres (Thousands)
2011	544	4,461	888	1,428	7,273	11,705	48,239	77,633
2012	542	4,246	871	1,402	7,075	11,386	48,725	78,415
2013	552	4,186	861	1,386	6,809	10,958	43,673	70,285
2014	552	4,094	834	1,343	6,720	10,814	41,587	66,928
2015	551	4,171	857	1,380	6,781	10,913	43,843	70,559
2016	527	4,241	876	1,409	6,850	11,024	44,884	72,234
2017	512	4,645	971	1,562	7,094	11,416	46,758	75,249
2018	495	5,028	1,011	1,626	7,107	11,438	47,030	75,688
2019	488	5,305	1,074	1,729	7,216	11,612	46,000	74,030
2020	480	1,227	229	369	2,929	4,714	14,941	24,044

Intercity passengers and train miles



The continued provision of rail service throughout the pandemic caused performance metrics to worsen. The average number of passengers per train fell from 149 in 2019 to 78 in 2020 (-47.4%), and the average passenger load factor fell from 60% to 45%.

INTERCITY PASSENGER RAIL PERFORMANCE METRICS

	Average intercity passengers per train	Average length of journey		Average passenger load factor	On-time performance
		Miles	Kilometres	%	%
2011	122	204	328	55	84
2012	123	213	342	54	82
2013	126	214	344	56	82
2014	124	213	343	60	76
2015	126	213	343	56	71
2016	128	216	348	54	73
2017	137	217	349	57	73
2018	142	209	336	57	71
2019	149	211	339	60	68
2020	78	198	318	45	71

SAFETY

SAFETY OVERVIEW

The safety data presented in *Rail Trends* reflects the performance of federally and provincially regulated freight and passenger railways in Canada. The Transportation Safety Board (TSB) maintains a live database of the safety performance of all federally regulated railways. Since the data is constantly being updated in the live database, the statistics may change slightly over time. The safety data found in *Rail Trends* is an aggregate of TSB statistics and information provided to the RAC by provincially regulated member railways that are not required to report to TSB. Each organization uses the same safety definitions, and the data reflects railway operations in Canada only.

Rail safety improved in 2020 as the number of accidents decreased from 1,318 to 1,111 (-15.7%). The number of accidents decreased in 7 of the 10 accident categories, while there were single digit increases in the other 3 categories.¹⁹ The number of accidents in 2020 was 5.1% below the 2015-2019 average.

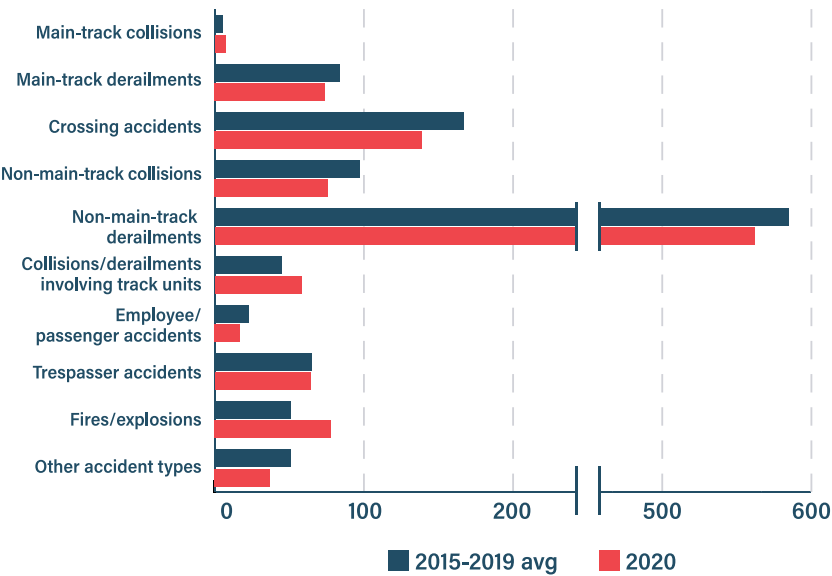
Over half (57.3%) of total accidents consisted of non-main-track collisions (6.8%) and non-main-track derailments (50.5%). Most of these accidents are minor and occur during switching operations at speeds of less than 10 miles per hour. Main-track collisions and derailments represented less than eight per cent of total accidents in 2019.

¹⁹ In Table 1 of TSB's *Rail transportation occurrences* in 2020 report, accidents are categorized into 14 categories. There are three categories for main-track derailments and three categories for non-main-track derailments, which are determined by the number of cars involved (derailments with 1-2 cars, 3-5 cars, and 6+ cars). In *Rail Trends*, a single category is used for all main-track derailments and a single category for all non-main-track derailments, irrespective of the number of cars involved, thus creating 10 accident categories.

SAFETY SUMMARY

	2011	2015-2019 avg.	2019	2020
Main-track collisions	6	5	4	7
Main-track derailments	119	84	100	74
Crossing accidents	183	167	185	139
Non-main-track collisions	90	97	116	76
Non-main-track derailments	578	584	631	561
Collisions/derailments involving track units	34	45	55	58
Employee/passenger accidents	18	23	23	17
Trespasser accidents	67	65	57	64
Fires/explosions	34	51	103	78
Other accident types	48	51	44	37
Total Accidents	1,177	1,171	1,318	1,111

Safety overview: 2020 vs 2015-2019 average

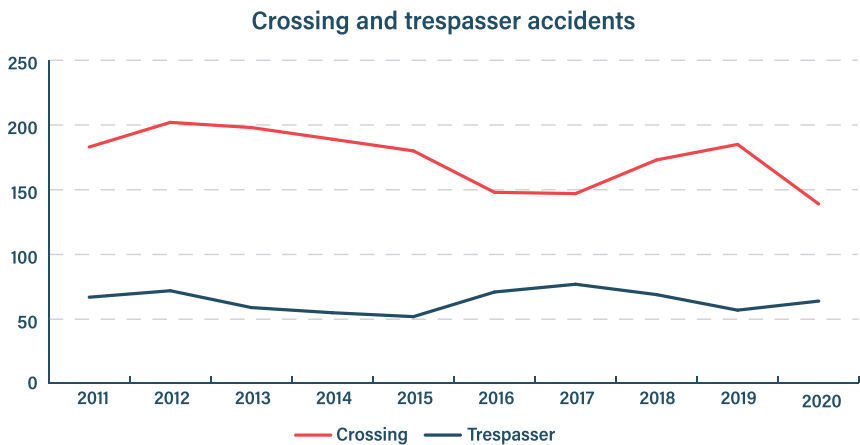


CROSSING AND TRESPASSING

Each year, crossing and trespasser accidents account for roughly one fifth of total rail accidents in Canada. In 2020, there were 139 accidents at railway crossings, a 24.9% decrease from 2019 and 16.6% below the 2015-2019 average. In addition, there were 64 accidents as a result of trespassing on railway property in 2020, up 12.3% from 2019 but still 1.8% below the 2015-2019 average.

CROSSING AND TRESPASSER ACCIDENTS

	Crossing	Trespasser	Crossing & trespasser
2011	183	67	250
2012	202	72	274
2013	198	59	257
2014	189	55	244
2015	180	52	232
2016	148	71	219
2017	147	77	224
2018	173	69	242
2019	185	57	242
2020	139	64	203



FREIGHT

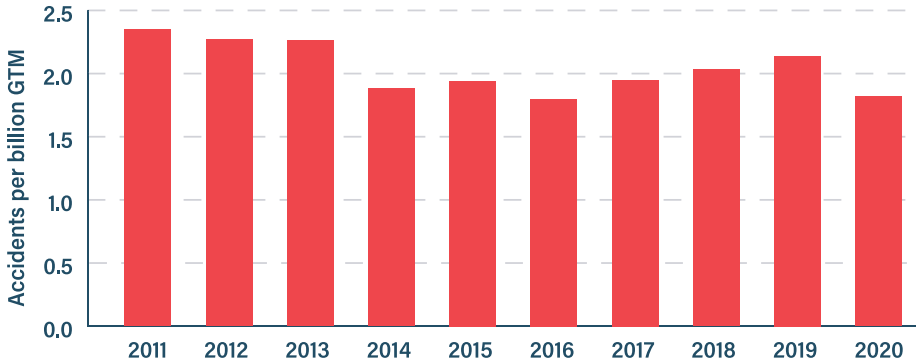
In 2020, the freight sector’s workload (GTM’s) remained relatively stable, decreasing by 2.0%, while the number of freight accidents decreased by 16.8%. This led to a 15.1% improvement in the freight rail sector’s accident rate compared to 2019, and an improvement of 7.7% compared to the 2015-2019 average.²⁰ In 2020, there were 1.82 accidents per billion gross ton-miles – the second lowest rate in the past decade.

FREIGHT ACCIDENTS

	Freight accidents	GTM (billions)	Accident rate
2011	1,095	466.6	2.35
2012	1,107	488.5	2.27
2013	1,139	504.6	2.26
2014	1,024	544.4	1.88
2015	1,060	545.1	1.94
2016	947	525.8	1.80
2017	1,100	565.1	1.95
2018	1,204	593.5	2.03
2019	1,271	592.9	2.14
2020	1,058	581.0	1.82

20 The freight sector’s accident rate is calculated by dividing the number of freight rail accidents by the freight sector’s total workload in billion gross ton-miles.

Freight accident rate



DANGEROUS GOODS

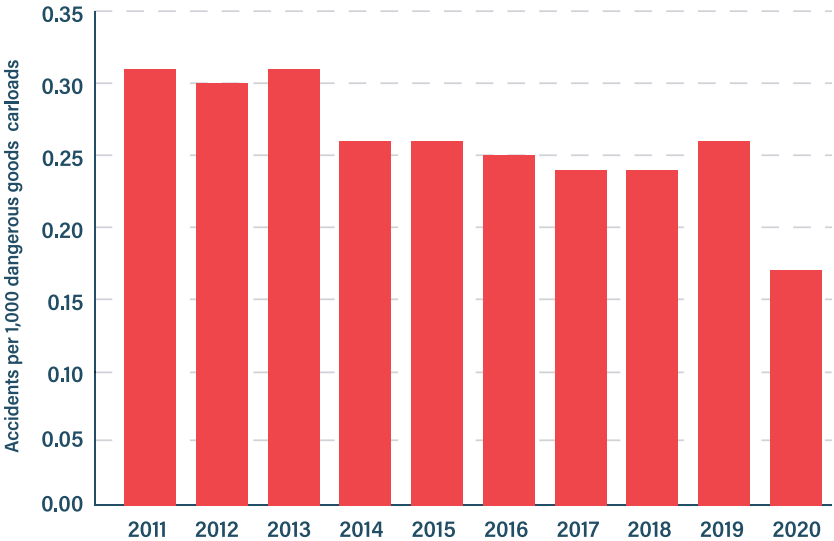
In 2020, the freight rail sector's accident rate involving dangerous goods decreased by 35.6% from 2019, and by 33.2% compared to the 2015-2019 average.²¹ In 2020, there were 0.17 accidents per 1,000 dangerous goods carloads, which is the lowest rate in the past decade. Only 3 of the 90 accidents involving dangerous goods in 2020 resulted in a release of product.

²¹ The freight rail sector's accident rate involving dangerous goods is calculated by dividing the total number of accidents involving dangerous goods by the number of originating dangerous goods carloads transported by Canada's railways.

ACCIDENTS INVOLVING DANGEROUS GOODS

	Accidents involving dangerous goods	Originated dangerous goods carloads	Dangerous goods accident rate	Accidents with a dangerous goods release
		Thousands	Accidents per 1,000 dangerous goods carloads	
2011	131	425	0.31	3
2012	127	429	0.30	2
2013	154	493	0.31	7
2014	148	576	0.26	5
2015	130	492	0.26	6
2016	111	438	0.25	2
2017	122	505	0.24	5
2018	129	547	0.24	4
2019	176	676	0.26	8
2020	90	536	0.17	3

Dangerous goods accident rate



PASSENGER

In 2020, the number of accidents involving passenger trains, 53, was similar to the 2015-2019 average of 55. However, the accident rate increased significantly in 2020 because it is based on the number of passengers,²² which fell by 77.7% compared to 2019, and by 73.1% compared to the 2015-2019 average. In 2020, passenger trains continued to operate with lower numbers of passengers per train, contributing to the increase in the accident rate. No passengers were either seriously or fatally injured in 2020.²³

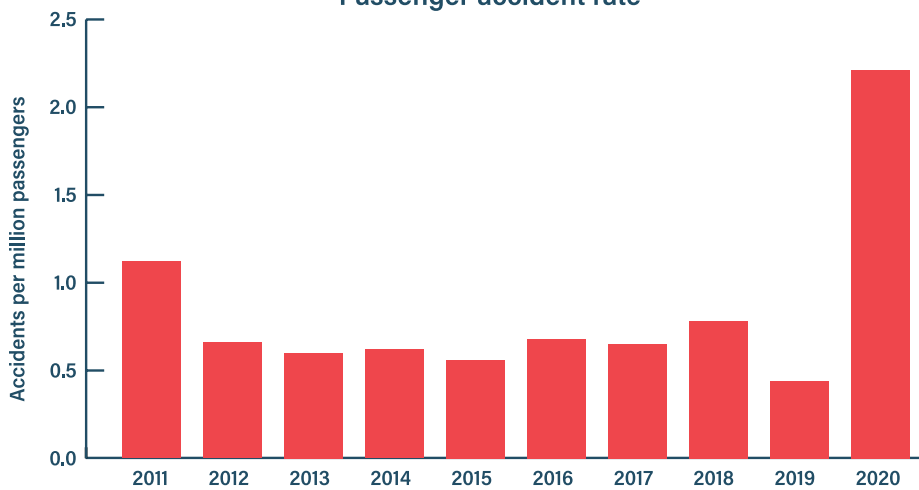
PASSENGER ACCIDENTS

	Accidents involving passenger trains	Passengers Millions	Accident rate
2011	82	73	1.12
2012	50	76	0.66
2013	46	76	0.60
2014	50	80	0.62
2015	46	82	0.56
2016	57	84	0.68
2017	55	84	0.65
2018	69	88	0.78
2019	47	108	0.44
2020	53	24	2.21

22 The passenger rail sector's accident rate is calculated by dividing the number of accidents involving passenger trains by the total number of intercity, commuter and tourist rail passengers (in millions).

23 Source: Transportation Safety Board, *Rail Transportation Occurrences* in 2020, Table 2.

Passenger accident rate



OPERATING FINANCES, INVESTMENTS AND TAXES

OPERATING FINANCES

In 2020, Canadian railways' total operating revenues decreased by 6.4% from \$17.9 billion to \$16.8 billion. Three-quarters of the reduction in total operating revenues is attributed to the 84.0% reduction in passenger revenues.

Total operating expenses decreased in 2020 from \$12.6 billion to \$11.8 billion. Reductions in expenses related to transportation and fuel were the drivers of the decrease.

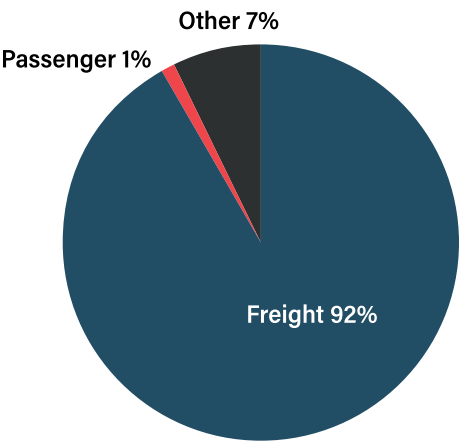
Since the reduction in operating revenues was greater than the reduction in operating expenses, total operating income of Canada's railways decreased from \$5.3 billion in 2019 to \$5.0 billion in 2020 (-5.3%).²⁴

OPERATING REVENUES (\$ MILLIONS)

	Freight	Passenger	Other	Total operating revenues
2011	10,305	668	561	11,533
2012	11,322	674	637	12,633
2013	12,039	668	623	13,331
2014	13,287	690	664	14,641
2015	13,270	727	682	14,679
2016	12,649	784	681	14,114
2017	13,610	915	704	15,228
2018	15,064	970	694	16,728
2019	15,820	996	1,088	17,904
2020	15,404	160	1,200	16,764

²⁴ Operating income reflects earnings before interest and taxes.

Operating revenues, 2020

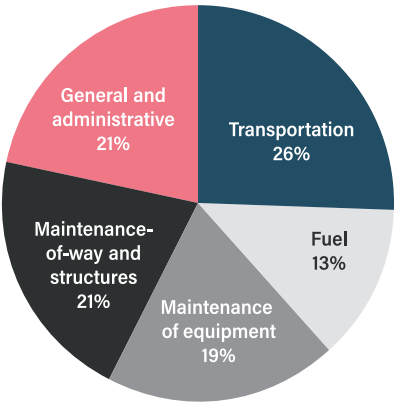


OPERATING EXPENSES (\$ MILLIONS)

	Transportation	Fuel	Maintenance of equipment
2011	2,381	1,854	1,570
2012	2,534	2,002	1,549
2013	2,523	2,061	1,698
2014	2,759	2,287	1,785
2015	2,508	1,624	1,870
2016	2,592	1,330	1,958
2017	2,895	1,633	2,071
2018	3,172	2,094	1,973
2019	3,719	2,008	2,136
2020	3,029	1,483	2,272



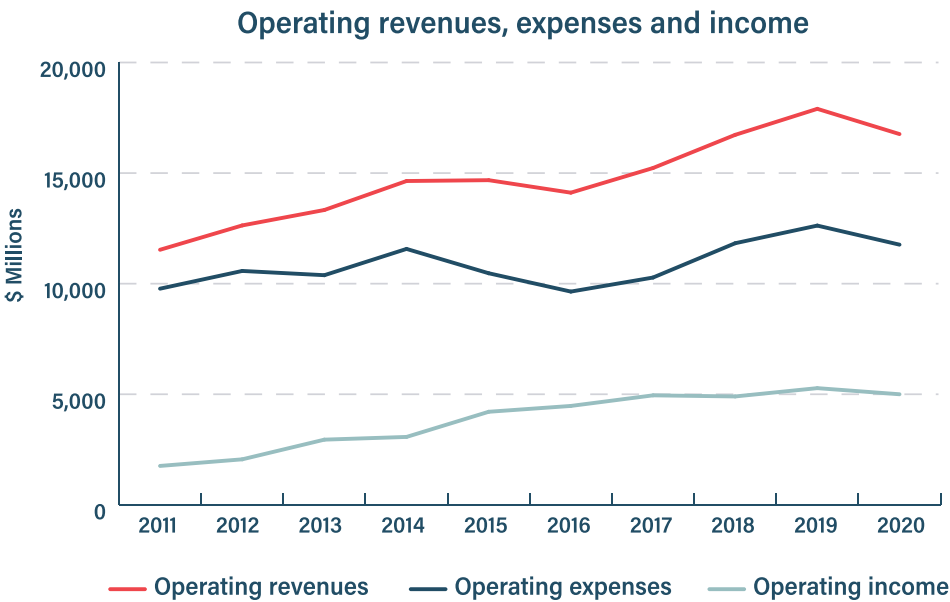
Operating expenses, 2020



Maintenance-of-way and structures	General and administrative	Total operating expenses
1,910	2,059	9,774
1,873	2,617	10,575
1,968	2,133	10,383
2,108	2,632	11,571
2,315	2,153	10,471
2,013	1,749	9,642
1,998	1,679	10,277
2,270	2,318	11,828
2,280	2,483	12,626
2,446	2,534	11,764

OPERATING INCOME (\$ MILLIONS)

	Total operating revenues	Total operating expenses	Total operating income
2011	11,533	9,774	1,760
2012	12,633	10,575	2,058
2013	13,331	10,383	2,948
2014	14,641	11,571	3,071
2015	14,679	10,471	4,208
2016	14,114	9,642	4,472
2017	15,228	10,277	4,951
2018	16,728	11,828	4,901
2019	17,904	12,626	5,277
2020	16,764	11,764	5,000



INVESTMENTS

Despite the elevated levels of uncertainty and negative impacts on operating revenues attributed to the COVID-19 pandemic, Canadian railways continued to make significant capital investments. In 2020, railways invested \$2.6 billion into their Canadian assets, which is the second highest level on record, behind \$3.1B in 2019. Investments in 2020 were 23.7% above the 2015-2019 average of \$2.1 billion.

Investments in track & roadway and rolling stock remained at similar levels to 2019, while investments in other categories decreased.

INVESTMENTS BY CATEGORY (\$ MILLIONS)

	Track & roadway	Building & related machinery & equipment	Signals, communications & power	Terminals & fuel stations	Rolling stock	Intermodal equipment	Work equipment & roadway machines	Other equipment	Total
2011	971	315	109	15	307	11	53	64	1,845
2012	961	269	122	41	255	22	49	77	1,795
2013	892	357	100	32	239	17	50	77	1,764
2014	988	292	93	10	240	53	49	83	1,808
2015	888	309	130	26	233	61	92	62	1,801
2016	771	298	102	8	145	53	55	70	1,500
2017	980	275	104	15	182	102	57	109	1,824
2018	1,044	442	146	55	366	166	62	101	2,382
2019	1,206	601	165	89	674	152	99	136	3,120
2020	1,255	427	132	50	645	15	12	95	2,629

Investments in Canadian rail assets



* Other investment categories include building & related machinery & equipment; signals, communications & power; terminals & fuel stations; intermodal equipment; work equipment & roadway machines; and other equipment.

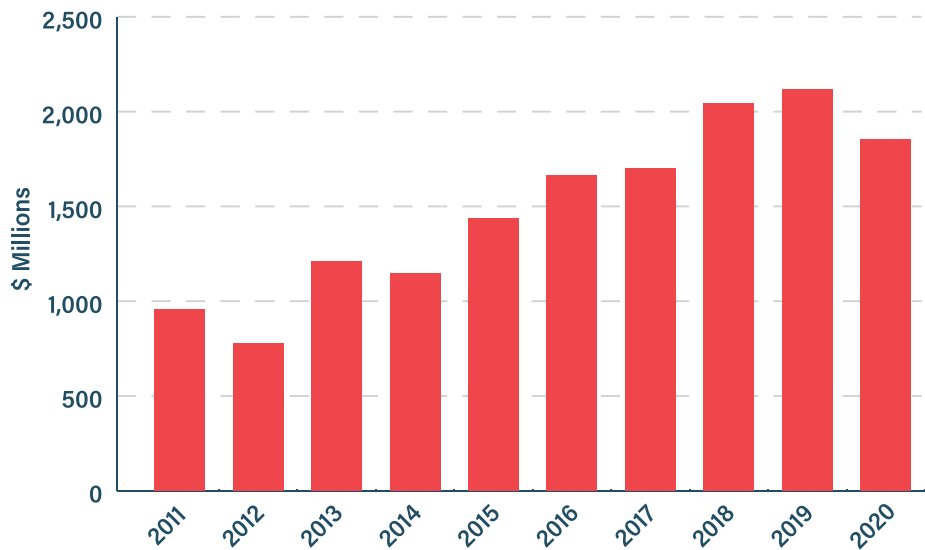
TAXES

In 2020, railways paid \$1.9 billion in taxes to federal and provincial governments, down 12.6% from the record-high level in 2019, but still 3.3% above the 2015-2019 average. Income taxes, which have made up over 50% of total taxes in every year since 2015, decreased by \$307 million or 24.6% from 2019. Carbon-related levies increased by 34.8% in 2020 and are expected to escalate in future years. Other taxes, such as fuel, property and payroll taxes remained relatively stable.

TAXES BY CATEGORY (\$ MILLIONS)

	Locomotive fuel & excise tax	Property tax	Other sales tax	Capital tax & custom duties	Income tax
2011	204	153	70	0	371
2012	220	158	70	0	159
2013	198	169	43	1	629
2014	189	179	106	1	463
2015	159	168	115	3	775
2016	187	180	114	1	976
2017	196	185	122	0	940
2018	217	192	128	4	1,212
2019	215	193	140	3	1,246
2020	199	199	153	2	939

Total taxes paid



	Carbon-related levies	Payroll taxes			Total
		CPP/QPP	EI	Health taxes	
	0	77	34	47	957
	0	84	37	49	777
	21	75	32	43	1,210
	44	84	37	46	1,149
	45	82	36	53	1,435
	43	79	37	50	1,667
	78	93	36	52	1,702
	100	95	37	58	2,044
	124	102	37	60	2,120
	168	103	33	56	1,852

TAXES BY CATEGORY AND JURISDICTION (\$ THOUSANDS)

	Locomotive fuel & excise tax			Property tax
	2019	2020	2020 c/L tax	2019
Alberta	19,519	19,081	5.5	22,848
British Columbia	19,650	19,838	3.0	53,608
Manitoba	10,850	10,018	6.3	16,250
Nfld. & Labrador	0	0	16.5	74
New Brunswick	1,237	1,204	4.3	1,199
Nova Scotia	0	0	15.4	2,785
Ontario	23,058	21,112	4.5	32,399
Quebec	6,381	6,117	3.0	40,284
Saskatchewan	47,528	39,761	15.0	23,586
Northwest Territories	8	13	11.4	141
Federal	86,937	81,623	4.0	0
Total	215,167	198,767	-	193,173

	Income tax		Carbon Levies
	2019	2020	2019
Alberta	112,985	73,826	12,870
British Columbia	120,338	66,989	64,636
Manitoba	51,685	41,519	0
Nfld. & Labrador	0	0	0
New Brunswick	11,536	9,960	0
Nova Scotia	4,874	3,334	180
Ontario	118,707	96,451	16
Quebec	63,890	48,968	5,356
Saskatchewan	88,130	72,872	0
Northwest Territories	856	542	0
Federal	673,251	524,991	41,181
Total	1,246,252	939,450	124,239

	Other sales tax		Capital tax & custom duties	
2020	2019	2020	2019	2020
23,066	43	11	2	1
56,485	49,313	48,659	0	0
16,517	22,365	19,298	20	15
6	0	0	0	0
1,730	0	0	0	0
2,783	0	0	0	0
34,608	20	531	0	0
40,858	16,849	32,264	0	0
23,301	19,870	18,440	71	43
142	0	0	0	0
0	31,634	33,361	2,742	2,417
199,497	140,094	152,564	2,835	2,476

	Payroll taxes		Total taxes	
2020	2019	2020	2019	2020
22	0	0	168,266	116,007
67,624	401	1,164	307,947	260,759
0	7,578	7,193	108,748	94,560
0	0	0	74	6
1,790	0	0	13,972	14,684
181	0	0	7,839	6,298
33	15,411	13,021	189,612	165,756
5,088	59,903	55,484	192,661	188,778
35	0	0	179,185	154,452
8	0	0	1,005	705
92,753	115,368	115,213	951,113	850,357
167,534	198,661	192,074	2,120,422	1,852,362

EMPLOYMENT

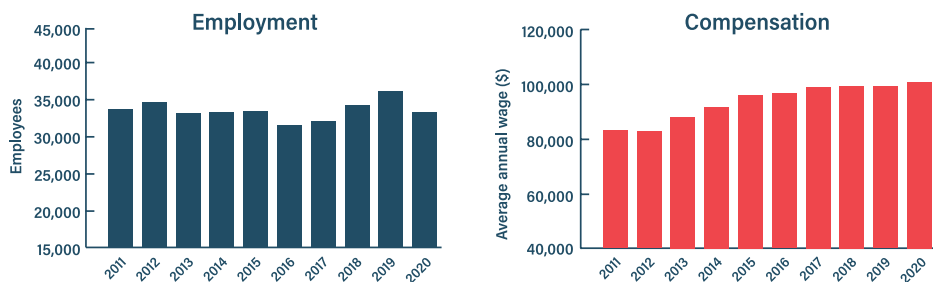
The average level of employment throughout 2020 was 2,875 employees (7.9%) lower than in 2019.²⁵ Quarterly Class 1 data indicates that the most significant impacts on employment were experienced in the second and third quarters of 2020 (not shown). The average annual wage per employee climbed by \$1,553 (1.6%) to over \$100,000 for the first time on record.

EMPLOYMENT AND COMPENSATION

	Total compensation \$ millions	Average number of employees	Average annual wage per employee \$
2011	2,803	33,703	83,163
2012	2,870	34,629	82,883
2013	2,924	33,167	88,153
2014	3,059	33,323	91,798
2015	3,136	33,511	96,110
2016	2,956	31,526	96,727
2017	3,077	32,152	99,134
2018	3,296	34,315	99,361
2019	3,477	36,196	99,332
2020	3,237	33,321	100,886

²⁵ One RAC member, who had not reported employment levels in previous years, reported employment of over 500 employees in 2020. Without this new inclusion, the reduction in 2020 employment in *Rail Trends 2021* would have been greater.

Employment and compensation



DIVERSITY REPRESENTATION

For *Rail Trends 2021*, RAC collected information from its members on diversity representation. Information was collected on the number of employees in the following categories: women; persons with disabilities; visible minorities; and Indigenous peoples. Some members were unable to provide this information, and therefore, the figures in the table below are understatements of the true level of representation.

DIVERSITY REPRESENTATION, 2020

	Number of employees	Share of total employment
Women	3,926	12%
Persons with disabilities	620	2%
Visible minorities	3,691	11%
Indigenous peoples	1,294	4%

TRACK AND EQUIPMENT

In 2020, freight railways operated 26,551 miles (42,730 kilometres) of track in Canada. The industry's freight car fleet increased by 1.2% to 61,755 cars. The number of active freight and passenger locomotives in service in decreased by 2.2% to 3,755.

TRACK AND EQUIPMENT

	Freight railway operated track		Locomotives in service	Freight cars in service
	Miles	Kilometres		
2011	27,102	43,617	2,978	71,750
2012	26,923	43,328	3,063	64,485
2013	27,276	43,897	3,043	59,393
2014	27,304	43,942	2,700	58,577
2015	27,428	44,141	2,400	59,509
2016	27,070	43,564	2,318	55,230
2017	26,406	42,497	3,177	55,258
2018	25,900	41,682	3,782	59,309
2019	26,499	42,645	3,840	61,030
2020	26,551	42,730	3,755	61,755

Note: The number of locomotives in service in 2018 has been revised. It was identified that six locomotives that were acquired in 2018 had not entered into service in 2018.

Note: Freight railway operated track does not include segments terminating in the U.S.

The table on the following page provides a breakdown of track operated by jurisdiction and railway service. There are instances where passenger railways have operating rights on freight railway-owned tracks, and where freight railways have operating rights on passenger railway-owned track. As a result, the length of *grand total track operated* includes instances of double counting. The significant decrease in commuter and tourist track operated in 2020 was due to the cancelation of the 2020 tourism season for many tourism rail operators.



TRACK OPERATED*, BY JURISDICTION AND RAILWAY SERVICE

	2018		2019		2020	
	Miles	Kilometres	Miles	Kilometres	Miles	Kilometres
Alberta	3,925	6,317	3,924	6,316	3,916	6,302
British Columbia	4,123	6,635	4,100	6,598	4,100	6,598
Manitoba	2,129	3,426	2,760	4,442	2,829	4,553
Nfld. & Labrador	175	282	175	282	167	269
New Brunswick	681	1,096	681	1,096	681	1,096
Nova Scotia	292	470	292	470	292	470
Ontario	6,026	9,698	6,065	9,760	6,065	9,761
Quebec	3,655	5,882	3,568	5,743	3,593	5,782
Saskatchewan	4,818	7,753	4,857	7,817	4,832	7,777
Northwest Territories	76	122	76	122	76	122
Freight total	25,900	41,682	26,499	42,645	26,551	42,730
Intercity passenger	7,608	12,244	7,608	12,244	7,608	12,244
Commuter and tourist	3,002	4,831	3,121	5,022	734	1,181
Passenger total	10,610	17,075	10,729	17,266	8,342	13,425
Segments terminating in the U.S.**	47	75	47	75	47	75
GRAND TOTAL TRACK OPERATED	36,557	58,832	37,274	59,987	34,940	56,231

* Miles (kilometres) of track operated includes rail over which a railway has operating rights.

** Reflects railways subdivisions that begin in Canada and terminate in the U.S.

Note: The table includes revisions. The tracks of two railways were re-assigned to better reflect the primary service that they provided. First, in 2018 and 2019, a 155-mile-long track was reassigned from tourist service to intercity passenger service. Second, in 2019, a 90-mile-long track was reassigned from freight service to tourist service.



APPENDIX A - GLOSSARY

Car mile: The movement of a freight car or passenger car the distance of one mile.

Class 1 railway: A railway with annual operating revenues exceeding \$250 million for two consecutive years.

Container: A large, weatherproof box designed for shipping and/or transferring freight between rail, truck or marine modes. Specialized containers are equipped with heating and cooling capabilities for perishable products.

Dangerous goods: Explosives; gases: compressed, deeply refrigerated, liquified or dissolved under pressure; flammable and combustible liquids; flammable solids; substances liable to spontaneous combustion; substances that on contact with water emit flammable gases; oxidizing substances; organic peroxides; poisonous (toxic) and infectious substances; nuclear substances; corrosives; or miscellaneous products, substances or organisms considered by the Governor in Council to be dangerous to life, health, property or the environment when handled, offered for transport or transported.²⁶

Fuel efficiency: The output one gets for a unit amount of fuel input, such as "revenue ton-miles per gallon" for rail.

Gross tonne-kilometre (GTK): The movement of total train weight over a distance of one kilometre. Total train weight is comprised of the freight cars, their contents and any inactive locomotives. It excludes the weight of the locomotives pulling the trains.

Gross ton-mile (GTM): The movement of total train weight over a distance of one mile. Total train weight is comprised of the freight cars, their contents and any inactive locomotives. It excludes the weight of the locomotives pulling the trains.

²⁶ Source: *Canadian Transportation of Dangerous Goods Act*

Intermodal service: The movement of trailers or containers by rail and at least one other mode of transportation. Import and export containers generally are shipped via marine and rail. Domestic intermodal service usually involves truck and rail.

On-time performance: The ability to meet customer requirements as to pick-up and delivery schedules.

Passenger-mile: The movement of a passenger the distance of one mile. Passenger miles are used to measure the volume of passenger traffic.

Revenue tonne-kilometre (RTK): The movement of one revenue-producing tonne of freight over a distance of one kilometre.

Revenue ton-mile (RTM): The movement of one revenue-producing ton of freight over a distance of one mile.

Shortline railway: A railway with annual operating revenues of less than \$250 million for two consecutive years.

Track operated: The first main-track over which a railway operates. This excludes second and other main-track, passing tracks and crossovers, industrial tracks, spurs and yard tracks.

Train-mile: The movement of a train the distance of one mile.

APPENDIX B – CONVERSION FACTORS

Miles to kilometres	1.6093
Kilometres to miles	0.6214
Tons (short) to metric tonnes	0.9072
Metric tonnes to tons (short)	1.1023
Gallons to litres	4.5461
Litres to gallons	1.1023
Revenue ton-miles to revenue tonne-kilometres	1.4599
Revenue tonne-kilometres to revenue ton-miles	0.6850
CAD to USD (2020)*	0.7454
USD to CAD (2020)*	1.3415

* Source: Bank of Canada, Average Annual Exchange Rates

APPENDIX C – SAFETY DEFINITIONS

The safety definitions are sourced from the [Transportation Safety Board of Canada's Rail transportation occurrences in 2020](#) report. The following definitions apply to rail transportation occurrences that are required to be reported pursuant to the Canadian Transportation Accident Investigation and Safety Board Act and the associated regulations.

Occurrence

- Any accident or incident associated with the operation of rolling stock on a railway
- Any situation or condition that the Board has reasonable grounds to believe could, if left unattended, induce an accident or incident described below

Reportable accident

- A person is killed or sustains a serious injury as a result of
 - getting on or off or being on board the rolling stock, or
 - coming into contact with any part of the rolling stock or its contents
- The rolling stock or its contents
 - sustain damage that affects the safe operation of the rolling stock,
 - cause or sustain a fire or explosion, or
 - cause damage to the railway that poses a threat to the safe passage of rolling stock or to the safety of any person, property or the environment

Reportable incident

- A risk of collision occurs between rolling stock
- An unprotected main-track switch or subdivision track switch is left in an abnormal position
- A railway signal displays a less restrictive indication than that required for the intended movement of rolling stock
- Rolling stock occupies a main-track or subdivision track, or track work takes place, in contravention of the Rules or any regulations made under the Railway Safety Act

- Rolling stock passes a signal indicating stop in contravention of the Rules or any regulations made under the Railway Safety Act
- There is an unplanned and uncontrolled movement of rolling stock
- A crew member whose duties are directly related to the safe operation of the rolling stock is unable to perform their duties as a result of a physical incapacitation which poses a threat to the safety of persons, property or the environment, or
- There is an accidental release on board or from a rolling stock which results in any of the events listed in subsection 8.4(2) of the Transportation of Dangerous Goods Regulations, under which TSB DG leaker incidents are only reportable if they result in death or serious injury, evacuation, or the closure of a DG loading facility, a road, a main railway line, or a main waterway.
- Derailment or non-main-track collision (involving one to two cars) occurs without damage or injury

Serious injury

- A fracture of any bone, except simple fractures of fingers, toes or the nose
- Lacerations that cause severe hemorrhage or nerve, muscle or tendon damage
- An injury to an internal organ
- Second or third degree burns, or any burns affecting more than 5% of the body surface
- A verified exposure to infectious substances or injurious radiation, or
- An injury that is likely to require hospitalization

Dangerous goods involvement

“Dangerous goods” has the same meaning as in Section 2 of the Transportation of Dangerous Goods Act. An accident is considered to have dangerous goods involvement if any car in the consist carrying (or having last contained) a dangerous good derails, strikes or is struck by any other rolling stock or object. It does not mean that there was any release of any product. Also included are crossing accidents in which the motor vehicle involved (e.g., tanker truck) is carrying a dangerous good.

Derailment

Any instance where one or more wheels of rolling stock have come off the normal running surface of the rail, including occurrences where there are no injuries and no damage to track or equipment.



APPENDIX D – STATISTICAL REVISIONS

Revisions to the Railway Association of Canada's Rail Trends Database

The RAC makes every effort to maintain an accurate statistical database. Revisions are periodically carried out in order to incorporate the most accurate and up-to-date information. As new data becomes available, historical estimates may be revised. A revised estimate for even a single railway affects the aggregated figures presented in *Rail Trends*.

The *Rail Trends 2021* report incorporates revised estimates for shortline freight railway data, from 2011 through 2017, inclusive. The following figures were revised:

- Revenue ton-miles (revenue tonne-kilometres)
- Gross ton-miles (gross tonne-kilometres)
- Freight train-miles (freight train-kilometres)
- Carloads originated
- Tons originated (tonnes originated)
- Total fuel consumption; Freight fuel consumption

These revisions also affect metrics that are calculated using these figures, including:

- Average length of haul by shortline railways
- Average cars per freight train
- Freight revenue per RTM (freight revenue per RTK); Freight revenue per RTM (RTK) index
- RTM per freight employee (RTK per freight employee)
- Cost of diesel fuel per gallon (litre)
- RTM per gallon (RTK per litre)
- Freight accidents per billion GTM

All other revisions, unrelated to those described above, are explained within the report in the data tables' notes.

Revisions to safety data

The Transportation Safety Board (TSB) maintains a live database of the safety performance of all federally regulated railways. Since the data is constantly being updated in the live database, the statistics may change slightly over time.

In *Rail Trends 2021*, there have also been some revisions to the RAC's provincially regulated railway safety statistics. RAC safety data was cross-referenced with the TSB data to remove some instances of double counting of occurrences, and to ensure all occurrences were accounted for.