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Models of transport in Canada

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Introduction

The Canadian economic structure and framework has gained more relevance following the nature of infrastructure whereby different models are used in its transportation system. There are five models of transport in use in Canada and they include: are Motor carriers, Railroads, airlines, Water carriers and pipelines. This paper is addressing each of the above-mentioned model in broad terms.

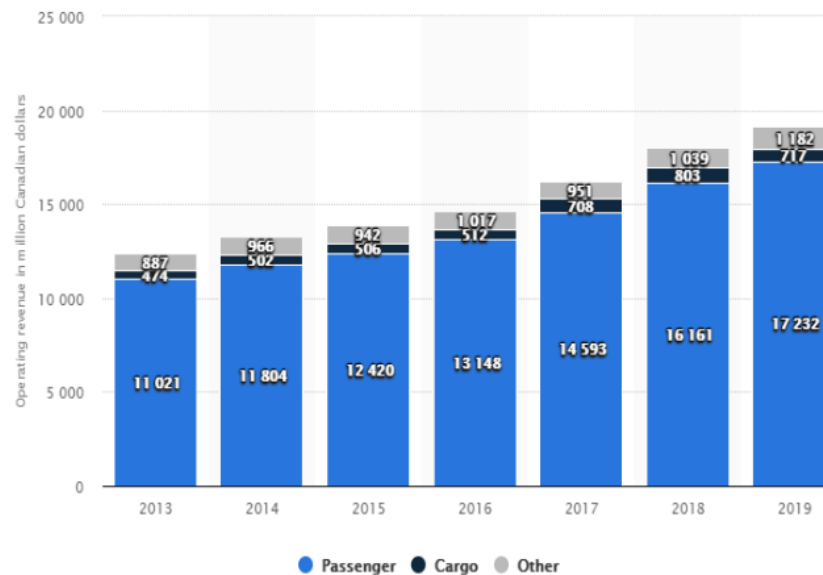
Canadian Airlines

Airline mode of transport is a model of transport where passengers and cargo are transported through air using aircrafts or airplanes. In Canada, airlines serve a very critical role in overall transportation mix. Different airlines transport cargo and passenger locally, within regions, nationally and internationally. According to Air Transportation-Transport Canada (2020), there are 1889 aerodromes that are depended on Canada's air sector with at least 26 airports. Most used air carriers in Canada are sky regional and porter airlines that operate as Air Canada express. It is worth noting that, in terms of passenger volume Canada has the largest with world 15th largest passenger airline. Back in 2011 the workforce in Canadian airline stood at 23, 700 employees that transported cargo and passengers to around 181 destinations globally. Currently, Canadian airline is having over 205 mainline fleet of aircraft with 157 of them that flies under air Canada express. The network of airline in Canada is enhanced by 5 regional airlines. These include Central mountain air, Jazz Air, ²Exploits Valley Air Services Ltd., Sky regional airlines and air Georgian.

Benefits and limitations

The airline in this state is very important in that it has created employment opportunity many individuals such as pilots, Air hostess, Engineers and mechanics. It also source of revenue

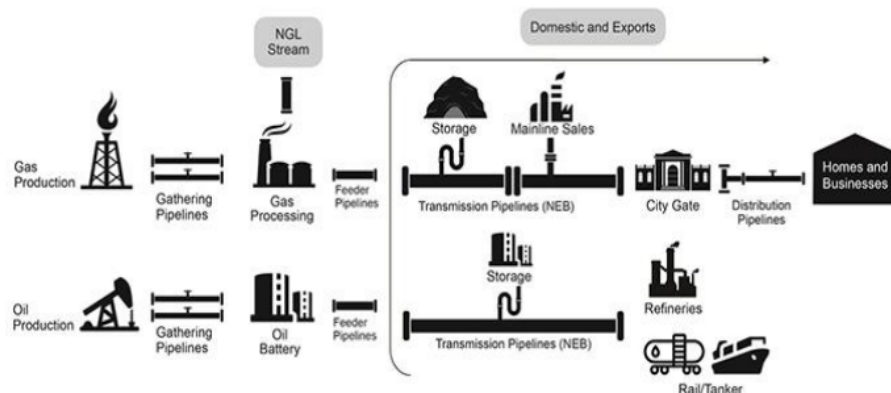
to the Government in that the \$1.3 total expenses are incurred by Federal airlines programs with an estimated revenue of \$9 billion (Conboy, 2013). In addition, in 2019, \$17.2 billion dollars revenue from passengers was reported. Importantly, it is the world's safest air transport due to decline in the issues of accidents for the last decades. However, this model of transport has some underlying cons such as airport pollution due to noise from aircrafts and its components. Emission of pollutants from engines of the aircrafts like Nitrous oxide, sulfur oxide and carbon (iv) oxide and other volatile compounds affects air quality. Fortunately, there are action plans and voluntary agreements and policies set aside for reducing impacts caused by such emission. The policies support for use of alternative fuels, emission reduction through regulation framework and measuring and mitigating emissions in airports (Air Transportation-Transport Canada, 2020).



Canada's transport system

Pipeline is a model of transport where liquid and gaseous products are transported through pipes. Usually, energy is required on daily lives and as such Pipeline transport system in Canada plays an important role in delivering energy different forms like crude oil, natural gas, natural liquid and petroleum products. Pipeline is a very essential model of transport in Canada economy as it has offered a lot of jobs to the communities and revenue to the government. It has also contributed to the economic prosperity by supporting export of gases and oil to other nations. The pipeline network in Canada comprises of four systems such as Gathering, Feeder, Transmission and ¹ distribution pipelines. The ¹ gathering pipelines are used in moving natural gas and crude oil to processing facilities from wellheads. The feeder pipelines are used in transporting oil products to transmission pipelines from batteries, processing facilities and natural tanks. The transportation of crude oil within international boundaries or provinces is done by use of transmission pipelines. The distribution companies make use of distribution pipelines in delivering natural gases to various places like Homes, industries and different businesses (NEB, 2020). See the pipeline system overview below:

Pipeline System Overview



Benefits and limitations

As already mentioned, pipeline model is advantageous and beneficial to Canadian economy as they earn revenue to the government as well as creating jobs to many Canadians. Besides, they are preferred mostly because they are safest model of transporting natural gas and oil in Canada. They also move natural gases as well as oil in large volumes efficiently. Their development comes with accessibility to international markets that are growing and this ensure that Canada can get to understand real value of is oil and natural gases. However, the disadvantages are that significant delays are experienced following legal procedure. Besides, accidental leakages if undetected earlier can lead to loss or even cause fire. Fortunately, such incidents are rare.

Canada's Motor carriers

In Canada, motor carriers are widely used in most chains of transport. It involves the use of small pickup trucks and motor trucks as well as combination of large tractor-semitrailer. Mostly, their industry of motor carrier comprises private motor carriers owned by individual firms who leases and operate such trucks. The motor carriers transport general goods, containers, fuels, gas and sand in more secure way.

Benefits and limitations

The Canadian motor carriers facilitates reduction of deaths, crashes and injuries resulting from buses and large commercial trucks by working closely and adhering with industrial regulations that governs safety in commercial operation. This ensures safety to operators and drivers operating commercial vehicles. According to ⁴ *Motor Carriers, Commercial Vehicles and Drivers* - Transport Canada. Tc.gc.ca. (2020) with the existence of territorial and provincial

regulations motor carriers are secure and this makes them to be more effective. However, their usage is limited by Motor Vehicle Transport Act (MVTA).

MVTA regulations

- 5** *a). Motor carrier safety fitness and Certificate regulations:* This regulation requires that all the motor carriers should provide a certificate for safety fitness to be allowed to operate in Canadian Highways. So, the jurisdiction controls their operation by issuing and removing such certificates
- b). Commercial vehicle Drivers Hours of Service regulations:* This regulation requires that, set rules of work hours and rest should be adhered to by motor carriers as well as their drivers.

Railroad transport in Canada

In Canada, railroad transport is a very vital element in transportation system. It generates over \$ 10 billion every year from transport industry. In fact, 95% of this comes from the railroad operations. The 5% revenue come from commuter passenger rails operating in towns. The dominant railroad operators here are Canadian Pacific Railway and Canadian National Railway. Over 250 million dollars is realized from these freight operators whereby Canadian National Railway contributes to over 50% and Canadian Pacific Railway accounting to 35%. Collectively, the two accounts for 85% of revenue annually.

The major components of railroad in Canada are shoreline railways and passenger railways. Short line railways are most critical component of Canadian railroads that feeds and deliver traffic in and out of mainline rails. The passenger railways compress rail operators in intercity, Urban transit as well as heritage railroads serving at least 450 counties within 12500 km rail network. Below is an image of railroad in Canada.



Source : <https://www.seat61.com/Canada.htm>

Benefits and limitations

The railroad model in Canada is of benefit in that it has contributed to growth and development of both economy and industry. With the development of railways in Canada economic development has improved, opening up of more businesses as well as employment creation. Transport has been revolutionized in Canadian regions. Different parts of Canada have been linked by railways which Toronto in south Ontario being linked with Great western (James, 2015). Industrialization and new markets have opened creating a demand for iron and fuels. However, the railroads are limited by inadequate funds during construction and maintaining.

Water carriers in Canada

In Canada, water is a mode of transport and it involve a couple of vessels moving on water like ferries, ship, and boats. The water transport take place in form of inland water transportation with and or without ferries. Besides, ³deep sea, coastal and great lakes water transportation with and without ferries is used. The aim of water carriers in Canadian

transportation is to move passengers and cargo through water carried out in harbors. Below is seaway and water carriers at Soo Locks at Sault Ste Marie-Canada



Benefits and limitation of water carriers

Creation of employment stands a key benefit of water carriers' usage in Canada whereby; people are offered jobs in Canadian shipbuilders. As a trading nation, water carriers in Canada cannot be under estimated. The water carriers like ship is used in transportation by covering great distances. It has influenced free movement of manufactured goods within domestic and international markets hence contributing to growth and advance of trade and growth and development of Canadian economy (Karl, 2015). However, growth, development and usage of water carriers in Canada can be limited due to high cost of building water vessels like ships and ferries. Besides, the water carriers serve those areas where there are waterways only.

Conclusion

To summarize in Canadian transport system, Motor carriers, Railroads, airlines, Water carriers and pipelines are the most common models of transport used in transportation of both cargo and passengers from point to another. All these models play a very critical role in Canadian economy. These models support development and advancement in trade and industrialization.

Besides, all the models of transport contribute to the creation of employment in different areas.

People are employed as drivers, engineers, pilots, mechanics and captains. However,

development and usage may be limited due to high cost of constructing the unit of carriage as it requires heavy investment. Some models are limited to areas served with water only.

Furthermore, other models like railroads cannot be used where there are no rails.

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