

Transportation Plan of Nord-du-Québec

Technical Study

Profile of Air Transport Networks, Infrastructures, Operations and Management in Nord-du-Québec

WORKING DOCUMENT

Summary

Territory Under Study

The territory under study corresponds to the administrative region of Nord-du-Québec. This vast region, measuring approximately 1,700 kilometres in length on a south to north axis, and approximately 1,000 km in width in its widest part, covers an area of some 840,000 km², that is, 55% of Québec. The Nord-du-Québec region is divided into two territories, James Bay from the 49th to the 55th parallel and Nunavik north of the 55th parallel. In 2004, its population accounted for 39,234 inhabitants. Based on different criteria, four areas can be identified, namely, southern James Bay, the James Bay Cree villages, the hydroelectric development area of James Bay and Nunavik. A fifth area, Schefferville, will also be included in the territory under study.

The Airport Network

There are 27 airports in Nord-du-Québec. Of the fourteen airports that are part of the Nunavik airport network, twelve were built from 1985 to 1992 following an agreement between Canada and Québec under the James Bay and Northern Quebec Agreement (JBNQA). The two other airports were built in the 40's for military purposes. In the same period, the federal government undertook to build three airports to serve some of the Cree communities of James Bay. Moreover, as part of the James Bay hydroelectric project, Hydro-Québec and the Société de développement de la Baie James (SDBJ) have built several airports, five of which are still in operation. The airports of Matagami, Chibougamau, Lebel-sur-Quévillon, Chisasibi and Raglan Mine complete the airport network. The Schefferville airport, located in the Côte-Nord region, gives access to outfitting businesses in southeastern Nunavik.

Most of these airports are owned by three government agencies, that is, Transports Québec (15), Transport Canada (5) and Hydro-Québec (4). In terms of their operation, the Kativik Regional Government (KRG) has the responsibility of the 14 airports in Nunavik. The Cree councils operate the airports in their villages, Hydro-Québec does the same for its airports and Transports Québec operates its two state-managed airports in southern James Bay. The Nord-du-Québec airport network is relatively recent, modern and in good condition. All the public airports accommodating scheduled air traffic must have the status of certified airport.

The airports of the Cree villages and eleven of the fourteen airports located in the Nunavik northern villages share several similarities, one of them being their gravel runways approximately 3,500 feet in length. Three airports in Nunavik - Kuujjuarapik, Puvirnituq and Kuujuaq - have runways measuring 5,000 or 6,000 feet long. The four Hydro-Québec airports share technical similarities with one another, providing pilots with gravel runways 5,000 feet long. Finally, the four

other airports of the region have paved runways 3,700 to 6,500 feet long. Almost all airports are equipped with lighting systems of medium intensity and ARCAL systems; a few have approach lights and visual approach slope indicators.

All the airports in the region have a terminal and most of them have the buildings needed to store and service the equipment. They also have the specialized motor equipment such as service trucks, wing plows, independent or loader-mounted snowblowers, loaders, graders for gravel runways and sweepers for paved runways. No airport is required to provide fire protection services to the airports specified in Subparts 3 and 8 of the CARs, although several airports have agreements to that effect with their municipality or offer specialized services like the La Grande Rivière airports and the ones of Hydro-Québec. Furthermore, fuel is available all over the region, except for aviation fuel (100LL) in Nunavik, available in drums at certain airports only, except in Kuujuaq where it is available at the pump.

With regard to navigational aids, the public *VHR Omnidirectional Range/Distance measuring Equipment* (VOR/DME), which form the basis of the Canadian air navigation system, are only found near the La Grande Rivière, Kuujuaq and Schefferville airports. On the other hand, the airports in Nord-du-Québec, except for Chisasibi, are equipped with *Non-Directional Beacons* (NDBs) for enroute navigation and approaches. Kuujuaq is the only airport in Nord-du-Québec with an *Instrument Landing System* (ILS) system for precision landings. Until recently, the La Grande Rivière airport and the ones of Hydro-Québec were equipped with a localizer system (LOC) that usually allows landings with minima below those of VOR and NDB systems. They have however been removed, the GPS approach now being used.

NAV Canada does not operate any *control tower* in Nord-du-Québec, but the regional Air Control Centre of Montreal (ACC) ensures control in the high level airspace (18,000 feet and above), while the low level airspace (below 18,000 feet) is not controlled except for the terminal control area of La Grande Rivière airport. The airports of the Cree villages, except Chisasibi, provide *Community Aerodrome Radion Station* (CARS) services. In Nunavik all the airports provide the service, except for the airports of Kuujuarapik and Kuujuaq where *Flight Service Station* (FSS) are in place. Elsewhere in Canada, NAV Canada finances CARS but in Nunavik, they are completely provided by Transports Québec.

In the region, helicopters and seaplanes use many temporary sites for their daily operations. However, their operating bases are usually set up in a more permanent manner and can include maintenance garages and permanent supply points. For many years, helicopters have assumed the role traditionally played by sea planes in the exploration and development of forest, mining and hydroelectric resources. Seaplanes are still part of the picture and now occupy a specific commercial niche, that is, the transport of trappers to their traplines and hunters and fishermen to the outfitters scattered in the region.

The four registred heliports are located in southern James Bay (2), LG-3 and also Fermont, south of Schefferville. The heliport owners are also the operators. There are just a few permanent water aerodromes and the registered ones in 2003 are located in southern James Bay (2), and the Caniapiscau–Schefferville area (2). They are owned by the air carriers.

In 1995, Transport Canada initiated the *Airports Capital Assistance Program* (ACAP). But ACAP appears to be an administrative burden, particularly when several stakeholders are involved, like the provincial government which decision-making processes can be long. It would be desirable that the MTQ and Transport Canada define a particular framework for the application of the ACAP program to Nord-du-Québec projects. Nevertheless, a few airports, including Chisasibi, Kuujjuarapik, La Grande Rivière, Puvirnituaq and Kangirsuk benefited from that program between 1997 and 2005.

Air Transport Services

Nord-du-Québec is served by commercial air carriers operating scheduled air services, chartered flights and cargo transport services. Hydro-Québec and the Société minière Raglan du Québec limitée operate their own planes to transport their employees.

Air Creebec provides scheduled flights in James Bay and to outside destinations, like Montréal, Roberval, Val-d'Or, the Ontario coast of James Bay and Whapmagoostui in Nunavik. Air Inuit and First Air serve Nunavik. Air Inuit offers intraregional connections as well as flights from Montréal to most of the west coast airports. This airline also provides a Sept-Îles–Schefferville connection and a Montréal–Québec–Schefferville–Kuujuaq connection twice a weeks. With regard to First Air, it offers daily Boeing 727 connections between Montréal and Kuujuaq and all-cargo B-727 flights between Val-d'Or and Kuujuaq. It also offers a connection from Kuujuaq to Iqaluit, in Nunavut. The paved and sufficiently long runway of the Kuujuaq airport allows jet connections from Montréal and Val-d'Or towards to Kuujuaq. On the west coast, no runway can accommodate B-727 planes; Kuujuarapik and Puvirnituaq have gravel runways 5,000 feet long, which are too short for this type of plane.

Chartered flights in Nord-du-Québec, more particularly to the Cree villages and Nunavik, are used for business or medical purposes. Most of them are mainly from the Abitibi-Témiscamingue, Montréal and Québec cities areas as well as Kuujuaq. In addition to passenger transport, chartered flights can also be used for unplanned or emergency transport of cargo that would have normally been routed by ship or regular air service.

Évacuations aéromédicales du Québec (EVAQ) is a government air transport agency serving sick people in remote regions, including Nord-du-Québec. EVAQ

interventions are made from the Jean-Lesage airport in Québec City, to the airports of Kuujjuaq, Puvirnituk and Kuujjuarapik in Nunavik and Chibougamau, Matagami, La Grande Rivière, La Grande-3, La Grande-4, Nemiscau and Fontanges in James Bay, which runways are long enough to accommodate the Challenger. Aeromedical evacuations are also available via the Propair company based in Rouyn-Noranda, mainly in James Bay.

Air Traffic

In 2003, the airports of Kuujjuaq and La Grande had the largest number of itinerant movements with respectively 10,201 and 8,477 movements, followed by Kuujjuarapik, Chibougamau and Waskaganish. The other airports each report under 2,000 movements. At the Kuujjuaq and Kuujjuarapik airports, the movements of the regular air carriers would respectively account for approximately 35% and 50% of the total itinerant movements of these airports. This ratio is higher for the other Nord-du-Québec airports.

All the villages in Nunavik have scheduled flights distributed over five or six days per week, the largest receiving 31 flights (Kuujjuaq) and 27 flights (Puvirnituk), the less populated still being served respectively by seven flights (Aupaluk) and eight flights (Kangiqsualujjuaq). Embarked/Disembarked (E/D) passenger traffic for Nord-du-Québec accounted for 205,733. In 1999, of which 47,605 E/D passengers for Kuujjuaq, 23,298 for Puvirnituk and 18,585 for Kuujjuarapik.

The James Bay airports served by commercial flights (which excludes Matagami, Lebel-sur-Quévillon and the Hydro-Québec airports) are desserved six days a week.

Air Fares and Transport Assistance Programs

The companies Air Creebec and Air Inuit each constitute a monopoly, in Nunavik the first in James Bay and the second as First Air desserves only Kuujjuaq. Despite this fact, comparative evaluations with the rest of Québec show the impartiality of air fare policies, and that the chief explanatory variable for air rates are distance and number of passengers. These carriers are owned by Aboriginal corporations that fulfill both social and economic viability objectives. This particular ownership feature could explain why these carriers in a monopoly situation, do not show the behaviour often observed in such situations, consisting in a rate increase. However, this impartiality of the fares does not contradict the fact that air transport from the various Nord-du-Québec communities to Montréal and within the region is very expensive.

To reduce the costs of air transport and supply of perishable goods and cargo for Nord-du-Québec residents, the governments of Québec and Canada have implemented three assistance programs, that is, the Air Fare Reduction Program for Nunavik Residents (Provincial), the Financial Assistance Concerning the Reduction of Freight Charges to Nunavik (Provincial) and the Food Mail Program (Federal).

Improvements to Be Made to the Air Transport Network

There is a sufficient number of airports in Nord-du-Québec and they are in a relatively good condition and equipped with appropriate public equipment. Nevertheless, a few improvements could be made to enhance airport efficiency and service quality. It would be justified to evaluate the need to extend the runway of certain airports in the region to 5,000 or 6,000 feet to permit their use by heavier and more performing airplanes, such as turbojets. At the same time, it could be appropriate to pave some runways as the demand should increase in most villages, and that airlines might want to offer a turbojet service on certain routes to reduce flying time.

The addition of ODALS and PAPI visual systems could contribute to increase landing reliability and safety. As well, the installation of perimeter fences at all the airports would increase their safety level. In this respect, the Ministère des Transports du Québec is evaluating the possibility to instal perimeter fences at the airports under his responsibility. Control over the access to the airports' *apron* must also be increased to reduce accident hazards.

CARS services available in almost all the James Bay territory and Nunavik should also be made available in Chisasibi and Schefferville. CARS capital and operating costs in Nunavik should be paid by NAV Canada as is the case in James Bay and the rest of Canada. Finally, NAV Canada should consider to provide low level airspace control service to increase flight safety.

Competent airport personnel is also of prime importance for reasons of efficiency and safety. If he received a good initial training but was left to themselves afterwards. Therefore, it is important to develop and implement a continuous training program for all the personnel assigned to the airports' maintenance and operation.

A few other improvements, such as the installation of 100LL gas pumps at certain airports, the better maintenance of airport buildings and a follow-up on GPS technology would also be required.

As is the case for the infrastructures, the air services provided by the carriers are of good quality and only need adjustments to make them even more efficient and pleasant. Basically, shortfalls exist with regard to flight duration for the

connections between Montréal and Hudson Bay's west coast, the great number of stopovers on several flights and the age of the airplanes. These shortcomings have no impact on air service efficiency and reliability but do reduce passenger comfort.

It is presently not possible for air carriers to reduce flight duration as the solution to the problem, that is the use of turbojets, is conditional to having longer and preferably paved runways. As well, a minimum number of passengers must be maintained in order for the carriers to gain enough benefits from providing the service with such aircrafts.

The numerous stops on many flights make flight duration substantially longer. However, the region's low population, its distribution in many small villages, the social and family ties between each village and the linear nature of the airport network, justify the inclusion of stopovers for viability purposes.

Both in James Bay and Nunavik, passenger transportation is partly done with aged airplanes that no longer meet accepted standards of comfort, operating costs and noise, and they will need be replaced in a relatively short time. Airlines are gradually introducing modern airplanes to their network.

Nord-du-Québec is a unique region where air transport will continue to be of prime importance. When all these improvements are made, scheduled air services will have reached a maximum quality. But the governments will have to sustain its efforts and work closely with airline companies and the regional stakeholders to acquire a better knowledge of the needs, maintain a quality airport network, contribute to the supply of efficient and less expensive air services in order to foster the region's economic development.