

# How a small Canadian town is integral to your transatlantic flight

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For long-haul airline pilots, the name Gander is well known. For those sitting in the back of the aircraft, the small Canadian town passing by on the moving map will barely be noticed.

From boosting the war effort in Europe between 1940 to 1945 to hosting celebrities such as Frank Sinatra and John Travolta, Gander is now responsible for the safe passage across the Atlantic of thousands of flights every week. If you've flown between North America and Europe, Gander has kept you safe in more ways than you can imagine.

So how did this small town become such an integral part of transatlantic trade?

## Gander history

The airport at Gander dates back to 1936 when the construction of an international airport began. A few years later, boasting four runways, it was the largest airport in the world. On 11 January 1938, the first-ever flight landed, operated by Imperial Airways for the Newfoundland government.

During WW2, the airport became a key facility in the moving of Allied aircraft from North America to Europe. Due to its position on a Great Circle route between the two continents, Gander was the perfect location to refuel before the long Atlantic crossing.



Gander airfield during WW2. (Photo courtesy of the Town of Gander)

In November 1940, a formation of seven Lockheed Hudson bombers made the first crossing to join the war effort in Europe. Over the next five years, more than 20,000 American and Canadian bombers and fighters would pass through Gander to join their squadrons on the other side of the Atlantic.

With the war over, the strategic location of the airport would aid the growth of transatlantic commercial traffic. Airlines such as Trans World Airlines (TWA), Pan American Airlines (Pan Am), British Overseas Airways Corporation (BOAC) and Trans Canada Airlines began regular transatlantic flights using Gander as the refuelling stop.

By the 1950s, Gander was the busiest airport in the world, handling over 13,000 flights and 250,000 passengers a year. To handle this massive demand, a new terminal was built and opened by Queen Elizabeth II in 1959. Anyone who was anyone was familiar with the custom furniture and Terrazzo flooring in Gander's progressive new terminal.

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Aircraft on the ground in Gander in the 1950s. (Photo courtesy of the Town of Gander)

Frank Sinatra, Bob Hope and John Travolta were all regulars as they made their way across the Atlantic. Fidel Castro was once photographed tobogganing in the snow behind the town's hospital.

However, the boom times were not to last. With the advent of the jet age, aircraft were able to fly further and the requirement to refuel in Gander was reduced. Whilst the new jet aircraft brought a notable downturn in the passenger business for the airport and its community, it would not spell the end for the Gander story.

Like any successful enterprise, you either evolve or die. Gander did the former.

## The North Atlantic Organised Track System

With over 1,000 flights crossing the Atlantic Ocean each night from North America to Europe, it's some of the busiest airspaces in the world. To complicate things further, for the vast majority of the crossing there's no radar coverage. This means that ATC is unable to see in real-time where aircraft are.

With such a high number of flights, without a plan, the whole thing would quickly descend into chaos. It is here that Gander stepped up to the plate.

Aircraft need to go from A to B as safely as possible but also as commercially efficiently as possible. For the most part, traffic heading east from North America to Europe does so overnight. A few hours later, the flow is reversed as the aircraft make their way back to the USA and Canada.



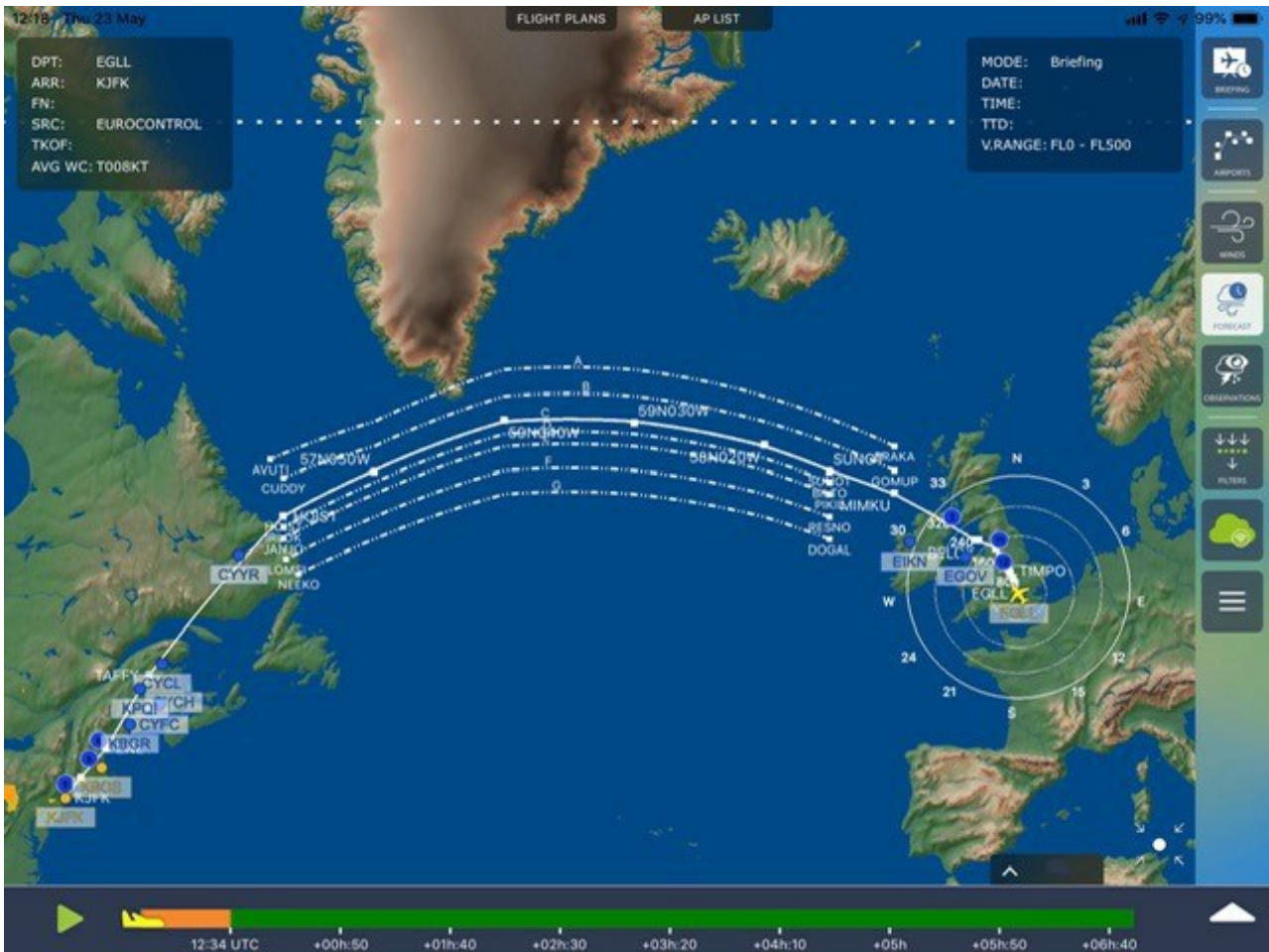


When crossing the Atlantic Ocean, traffic tends to flow eastbound overnight and westbound during the day. (Photo by Daniel Ross/The Points Guy)

Most of the traffic crossing the pond passes through the Gander Oceanic Area Control Centre (OACC). Here, controllers have the responsibility of sending traffic across the Atlantic overnight and then receiving them back a few hours later during the day.

To facilitate this flow, each day airlines send Gander their preferred routings for their eastbound flights during the night. Controllers collate this data and create a set of routes using GPS positions. This is known as the Organised Track System (OTS).

There are usually around six to seven of these tracks each night and they are then given an individual designator. Westbound flights during the day use tracks labelled Alpha, Bravo, Charlie, etc. So, to avoid any confusion, eastbound flights overnight start at Zulu and work backwards. Therefore Yankee, X-ray, Whisky etc. Any flights planning to fly in this area of the Oceanic airspace must use the OTS.



The westbound Organised Track System for a flight from London to New York. (Image by Charlie Page/The Points Guy)

Traditionally these tracks were spaced at one degree of latitude intervals, roughly 60 nautical miles apart. Aircraft are then separated by 10-minute intervals along the track and 1,000 feet vertically.

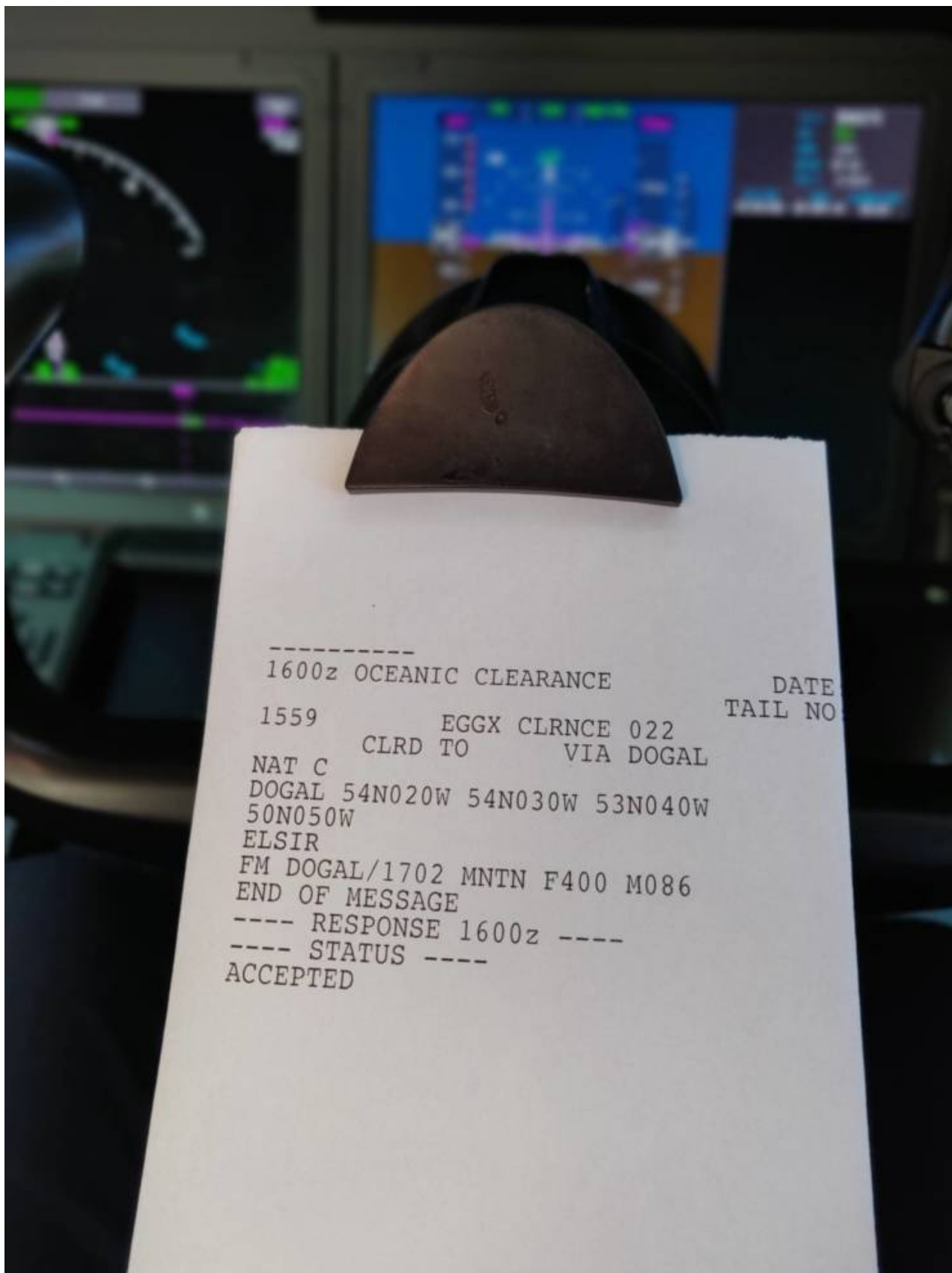
However, due to demands on the system, ATC has utilised the greater navigation accuracy of modern aircraft and reduced the lateral separation to 30 nautical miles. Not only does this allow more aircraft to cross the Atlantic in a given time, but it also enables more aircraft to fly at their optimum cruising level, reducing their carbon emissions as a result.

### Oceanic clearances

When a flight is 90 minutes from the start of the oceanic crossing, pilots send a message to the Gander Oceanic controllers with several details:

- Oceanic entry point.
- Estimated time of arrival at that point.
- Requested flight level (altitude).
- Requested speed.
- Maximum flight level they are able to fly.

The messages from all the aircraft are collated by the controllers who do their best to accommodate all the requests. When a plan has been formulated for a flight, Gander then sends the pilots their oceanic clearance as seen below.



An oceanic clearance. (Photo by Charlie Page/The Points Guy)

On receipt of the clearance, both pilots must then stringently check that the route, altitude and speed that the aircraft has been programmed to fly matches the clearance. If there are any changes, normally to the altitude or speed, corrections must be made.

On rare occasions that there is a bottleneck on one of the tracks, a re-clearance onto another track may be made. This involves some serious workload to accurately change the route in the Flight Management Computer and, once again, checking for any errors.

## ETOPS alternates

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Even though Gander has lost its role as the refuelling centre for transatlantic traffic, its geographic location still provides a valuable service to the jet aircraft passing thousands of feet overhead.

Most traffic crossing the Atlantic these days are twin-engine aircraft, such as the Boeing 787 Dreamliner, which I fly. Whilst they are as safe as their four-engine counterparts, twin-engine aircraft have to comply with a number of rules to cover the eventuality of an abnormal situation such as an engine failure. These are known as Extended Range Twin Operations — ETOPS.

ETOPS rules apply to any flight which contains a point greater than one hour flying time on a single-engine from a suitable airport. This airport is known as an ETOPS alternate and Gander's geographic location makes it a perfect choice.

**Read more:** [What are the strange noises and sensations you experience on a flight?](#)



Gander, CYQX in the centre of the lefthand green circle, is ideally situated as an ETOPS alternate.  
 (Image by Charlie Page/The Points Guy)

Depending on the ETOPS rating of the aircraft, the distance from an ETOPS alternate can be anything up to five hours. However, most aircraft are certified as ETOPS180, equivalent to three hours flying time from a suitable airport.

However, what constitutes “suitable?”

In order for an airfield to be suitable as an ETOPS alternate for a flight, the following conditions must be met.

Firstly, the runway must be long enough to land on. This may seem obvious but there is far more to this than you may think. Factors such as the wind direction and speed, surface conditions and aircraft weight all affect the landing distance required. With two runways both over 2,500 metres, Gander has sufficient length to accommodate even the biggest of aircraft.

Next, the aerodrome must have facilities to allow an aircraft to make an approach to the runway using the instruments in the flight deck. Gander has an Instrument Landing System (ILS) on two runways and an RNAV (GPS) approach onto the other two runways. These allow aircraft to land in visibility as low as half a mile.







Connected to Gander (CDQX) CPDLC. (Image by Charlie Page/The Points Guy)

Each time the aircraft crosses a waypoint on the track, the communications system automatically sends a position report to the controllers on the ground. This enables them to know what time the aircraft passed that point and at what altitude. It also tells them at what time they estimate the next waypoint. In the absence of radar, these position reports enable controllers to keep tabs on aircraft and ensure they remain safely separated.

Gander controllers are only responsible for the western half of the Atlantic. At 30 degrees of longitude west, aircraft are transferred to the responsibility of Shanwick OACC, based in Prestwick, Scotland.

Approaching "thirty west", aircraft log off the Gander CPDLC and connect to the Shanwick CPDLC. Pilots are also given a set of HF frequencies as their backup communications. Once connected with Shanwick, the flight proceeds as before, with the aircraft now sending position reports to Scotland instead of Canada.

## 9/11

Whilst Gander has established itself as a core background part of the aviation industry, the events of 11 September 2001 would bring it into the spotlight once again.

With the events unfolding in New York and Washington, the USA and Canada closed its airspace. With hundreds of flights already on their way across the Atlantic, some turned back to Europe. However, the flights which were almost across the Atlantic were forced to divert to airports in eastern Canada, Gander being one of them.



Aircraft on the ground in Gander after the events of 11 September 2001. (Photo courtesy of the Town of Gander)

In the space of a few hours, 38 aircraft landed at this bastion of international aviation.

Landing and parking the aircraft on such a well-equipped airfield wasn't too much of a problem. What to do with a sudden influx of 6,700 people for five days was a different matter entirely.

Fortunately, the people of Gander are different. They threw their doors open to welcome their unexpected guests. Gyms, church halls, community centres and schools were turned into makeshift shelters. Locals took the "come from aways" moose hunting, on sightseeing trips and invited them into their homes for BBQs.





Stranded passengers bedding down in a gym in Gander after the events of 11 September 2001. (Photo courtesy of the Town of Gander)

The story of the town's reaction to this unprecedented event even resulted in a Broadway and West End musical, perfectly named "Come From Away". The captain of that aircraft was also a woman called Beverley Bass, the first female captain for an American Airlines commercial plane.

## Bottom line

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The town of Gander is as important for international air travel today as it was nearly 100 years ago. Instead of hosting thousands of aircraft a year on the ground, it now hosts thousands of them every week in the skies above.

Not only is it a base for one of the most important Air Traffic Control centres in the world, but the airport also satisfies the requirements of an ETOPS alternate for the hundreds of twin-engine aircraft passing by every day.

The size of the airport also makes it incredibly useful to bigger aircraft such as the A380. Whilst they don't need ETOPS alternates, they do need airports big enough to handle them should they have a technical problem or a medical emergency on board.

Finally, I'd like to thank Brian Williams, Tourism Development Officer at the Town of Gander for his help with the images.

*Featured photo courtesy of the Town of Gander*