



# Royal Bank Letter

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## *Flying the World*

*This year of anniversaries calls for an appreciation of man's ability to fly, one of the greatest of human achievements. The miracle of modern aviation has not been wrought totally on the technical side. It also entails a triumph of international cooperation. That is what permits us to travel almost anywhere on earth today...*

It so happens that two of the great unsung events in the history of aviation occurred the same year in two cities of the same name: St. Petersburg, Florida, and St. Petersburg, Russia. On January 1, 1914, a pilot named Tony Jannus took off from the American St. Petersburg on a 23-minute flight to Tampa, which marked the beginning of scheduled air service as we know it today. Six months later in Russia, a 24-year-old engineering genius named Igor Sikorsky carried six passengers on a test flight lasting 6 1/2 hours in a huge (for the time) four-engine aircraft. Later that year Sikorsky and three colleagues flew this prototype of the modern airliner from St. Petersburg to Kiev and back on a round trip of 2,000 kilometres.

It is difficult for people living 80 years later in the final decade of the "Century of Flight" to appreciate just how revolutionary was Sikorsky's idea of a large enclosed people-carrier. We have now become overly familiar with a phenomenon which in centuries past remained beyond man's most distant aspirations, namely the ability to fly. The first aviators approached this technological triumph in a gingerly way, counting their speed and the horsepower of their engines in low double digits and their time aloft in minutes rather than hours. For some years after the Wright brothers' *Flyer One* biplane first lifted off the ground for 12 seconds in December, 1903, every flight was a venture which could end in injury or death.

At that stage, however, nobody put much stock in the prospect of aircraft transporting people and goods from one place to another. The machines were necessarily of such light construction that they could only carry one passenger at a time. The first air passengers did not want to be taken anywhere in

particular. Rather, they were on the original "joy ride," defying danger for the fantastic sensation of breaking the bonds of gravity.

The prevailing thinking about the future of aviation was that it had some military potential, and would provide fine sport, like horseback riding. In inaugurating a regular passenger service (four round trips a day; return fare \$10) the proprietors of the Florida St. Petersburg's Airboat Line were taking a daring step ahead of their time.

Sikorsky was even more visionary in seeing aviation as a means of large-scale, long-distance transportation. Until the turn of the 20th century, the only speculation on the possibility of airborne commerce came from poets like Byron and Tennyson. Since they do not actually have to do what they write about, poets can write about doing anything they like. But Sikorsky was a hands-on workman with an intimate knowledge of the myriad and massive difficulties of what he was trying to accomplish — build the progenitor of a breed of airborne giants that would carry passengers and cargo across oceans from city to city with no intermediate stops.

The outbreak of World War I soon after his epic 1914 flight cast a shadow over Sikorsky's grand visions. Instead of going into commercial service, his magnificent flying machine made its debut as the world's first heavy bomber. Seventy-three warplanes were built according to his basic design, graduating in range and power. They flew about 400 missions over a distance of 120,000 kilometres. Apparently all were destroyed in the chaos of Russia's revolution and military collapse.

Still, by demonstrating that a plane of that size

could be flown regularly, Sikorsky deserves the title of the father of the modern transport aircraft. (In the 1940s he would also become the father of the modern helicopter.) Following Russia's lead, the major combatant nations in World War I all developed long-range bombers. It was in a stripped-down British Vickers Vimy bomber that two Royal Air Force officers, John Alcock and A. W. Brown, became the first men to fly directly across the Atlantic Ocean on June 15, 1919.

Even as they braved the North Atlantic winds, commercial aviation was off and running on a practical level. Airlines had been formed with planes and ground facilities left over from World War I, operating scheduled services among many points in continental Europe and Great Britain. Since the routes crisscrossed national boundaries, it soon became clear that aviation would bring about a fundamental change in the relationships among states.

When delegates from 33 nations took time out from the peace negotiations in Paris to discuss this question in 1919, they proceeded on the premise that the traditional legal terms of reference for international commerce could not be applied to the new industry. If they equated it with land transportation, then a

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internationalist  
approach*

flight passing over a country should be subject to all the laws of the land underneath it, which could prove vexatious and cumbersome for all parties. But if they followed the precedent of marine transportation and declared a kind of aerial freedom of the seas, then the nations being overflown would have no control over what was being done in their own airspace.

The agreement which resulted from that meeting contained a solution which has served the international aviation community nicely ever since, to the effect that each state would maintain sovereignty over its own airspace without prejudice to the right of innocent passage by aircraft of other nations. The "Paris Convention" also took a broad internationalist approach to such matters as airworthiness certification, pilot licensing, and aircraft registration and identification. To implement the convention, the first intergovernmental aviation organization was launched — the International Committee for Air Navigation (ICAN).

In the meantime, the airlines themselves had come to the conclusion that commercial aviation would require extraordinary international cooperation to meet its full potential. So, in August, 1919, representatives

of the British, Danish, Dutch, German, Norwegian and Swedish carriers came together in the Hague to form the International Air Traffic Association (IATA), a non-political organization dedicated to coordinating operating and business practices on international air routes.

It was clear from the beginning that, as a quasi-public service, commercial aviation would have more contact with governments than other industries. At the time IATA was founded, the finances of its members were heavily dependent on airmail, the industry's original financial mainstay. It successfully lobbied to win for its members a regular share of the world's mail.

It was also clear that the organization representing commercial carriers would have to work closely with the organization representing governments. IATA and ICAN formed a common front to persuade governments to standardize the ground signals which informed pilots of wind direction, cloud ceilings, etc. When these were replaced by radio, the two organizations made sure that commercial air traffic was allotted its own fixed frequencies. Their joint efforts in developing navigation and landing aids enabled instrument flying at night and in murky weather. They also joined in successful efforts to talk governments into eliminating needless red tape.

As traffic grew, the operators cooperated among themselves to establish many of the distinguishing characteristics which today make international aviation an industry like no other. IATA meetings resulted in a continuous exchange of technical, operational and statistical information which formed the basis for the coordination of schedules, documentation, and legal provisions.

In the all-important setting of standards, an IATA committee decided that all dial instruments should turn clockwise, and that all throttles should be made so that pushing on them would increase speed and pulling on them would reduce it. Through IATA, the airlines developed arrangements whereby one airline could book passengers on others through a single set of tickets, the precursor of the impressive communications and financial system which now allows "one-stop shopping" for multiple-airline journeys. As far back as the 1920s, members were laying the groundwork for the modern travel industry, agreeing on uniform baggage allowances, travel agents' certification and commissions, round-trip discounts, and terms for inclusive tour packages.

The 1930s ushered in a new era of international flight, dominated by tri-motor transports and flying boats. Using a combination of both types of

equipment, Pan American Airways opened up routes from the United States to points throughout the Caribbean and Latin America as far south as Buenos Aires. Later it launched its famous China Clipper service to the Far East. Not to be outdone, Britain's Imperial Airways used flying boats to fly from England to South Africa, India and Australia. Fuel limitations necessitated a number of overnight stops along the way. A person travelling from Britain in this fashion would take 8 1/2 days to reach Singapore and 12 1/2 days to reach Australia. That may seem long until one recalls that it took six weeks to get to Australia by ship.

Oddly enough, the last ocean to be flown by airlines on a regular basis was the narrowest and most-travelled one — the Atlantic. True, the German-built lighter-than-air craft, the *Graf Zeppelin*, had crossed between Europe and North America with 20 passengers in 1928 at a leisurely 100 kilometres an hour. But the airship experiment was short-lived: it ended with the last of several fatal disasters when the German *Hindenberg* burst into flames on landing in New Jersey with the loss of 36 lives in May 1937. Two months later the first pathfinding commercial flights by the flying boats of Imperial and Pan American Airways opened up a transatlantic route using jump-off bases in Ireland and Newfoundland.

The logistical imperatives of World War II made intercontinental flights commonplace, although they were generally in uncomfortable military aircraft stripped to the bare essentials. The exceptions were Igor Sikorsky's new line of flying boats, which in the latter stages of the war carried 38 privileged passengers on flights as long as from New York to Rome. Sikorsky had emigrated to the United States and founded a flying boat company. In middle-age, he saw his youthful dream of non-stop transoceanic passenger service come true.

From the very beginning, the development of commercial aviation had been notable for the remarkable foresight of everyone concerned, from designers to manufacturers to airlines to government regulators. There was perhaps no greater act of foresight than the convening of the International Civil Aviation Conference in Chicago in November, 1944, when World War II was still very much under way.

This gathering of 52 nations recognized that there would be an irresistible surge of commercial aviation activity in the aftermath of the war, which would transform the world as people then knew it. In this "new world order," international cooperation would be more crucial than ever. The Chicago Convention promulgated the "freedoms of the air" by which

multilateral relationships in aviation have been ruled ever since.

Out of the conference was born the International Civil Aviation Organization (ICAO), which is now celebrating its 50th anniversary. The Montreal-based United Nations agency is dedicated to maintaining orderly and safe commerce on the world's airways, on which it regulates operating practices and traffic control. Governed by an assembly and council of nations, ICAO sets standards for the licensing and infrastructure of world aviation, provides technical assistance, keeps track of key statistics, and mediates international disputes.

As in pre-war days, there was a need for a parallel organization of commercial carriers to work with that

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air routes*

of governments. Thus IATA, which had become a casualty of the war, was revived in 1945. The new organization, this time named the International Air Transport Association, also has its headquarters in Montreal, in close proximity to its governmental counterpart. It has since grown vastly to embrace 224 member airlines which fly to 133 nations. Today, ICAO and IATA work closely together on many matters of mutual concern.

For more than a decade after the war, ships remained the dominant form of overseas passenger transportation. In 1952, the *SS United States* sailed from New York to Southampton in three days, 10 hours and 40 minutes, an incredible 10 hours faster than any vessel had ever before crossed the North Atlantic. Its achievement was clouded by the fact that a four-engine Constellation could make the run from New York direct to London or Paris in under 12 hours.

In the summer of 1957 came the fateful day when more people crossed the Atlantic by airplane than by ocean liner. As John Maxtone-Graham put it in his book, *The Only Way to Cross*: "Over the postwar fleets that sailed the North Atlantic flew aircraft that would cripple the ships as no storm ever had."

The passenger flying boat also became obsolete, thanks to a wartime expansion in the number of airfields worldwide and enhancements in the range and size of ground-landing aircraft. The war also gave rise to radar and powerful new radio systems which permitted airplanes to navigate safely over vast distances. And just at the end of the hostilities had come the most far-reaching development of all, the jet engine, which was briefly used to power small German and British military planes.



In 1952 British Overseas Airways Corporation, now British Airways, inaugurated the world's first scheduled jet passenger service between London and Johannesburg. By the end of the decade the British deHavilland Comets had yielded pride of place to the much bigger American Boeing 707s and Douglas DC-8s.

By carrying twice as many people twice as fast as propeller-driven passenger planes, the jets sparked their own particular aviation revolution. They shrunk the world by bringing distant points closer together in terms of travelling time. For instance, Montreal and London became six hours apart, compared with 13 hours 10 years earlier. (The supersonic BAC/Aérospatiale Concorde would later render London and New York less than three hours apart.)

Not only did the jets slash the time spent on the more familiar routes, they made it feasible to go to

*Mammoth machines  
more wonderful than  
Jules Verne's dreams*

places that were once dauntingly distant. A person in Toronto, for instance, could contemplate without a shudder catching a plane for Tokyo. By bringing

business people from different countries face-to-face, the jet delivered the kick-start to today's global economy. Among other things, it transformed the arts and international politics. Now, city dwellers in any western country could enjoy live performances by the world's top musicians and entertainers. "Shuttle diplomacy" brought a more personal touch to relations among world leaders, with historic results in settling differences among states.

But the heaviest impact of the jet engine on human affairs came in 1970 with the introduction of the Boeing 747. That first jumbo jet carried 385 passengers; the basic design has since been taken through a succession of changes, so that the latest model has a capacity of over 575, plus crew. These mammoth machines surpass in wonder anything that could have come from the imagination of Jules Verne. They are like flying hotels, carrying all the facilities necessary to feed and otherwise care for multitudes of people while cruising far above the clouds at a speed of almost 1,000 kilometres an hour for up to 15 hours at a stretch.

The combination of size and efficiency of these and similar giant-sized planes has generated economies of scale undreamt-of by airline people a few years ago. The effect has been to drive down the cost of air travel relative to average incomes and the cost of other services. An economy return ticket between Vancouver and Ottawa in 1959 cost \$400. Adjusted for inflation, that same amount today would take you handily to Hong Kong and back.

Whereas overseas travel was previously the preserve of a small economic elite, low air fares have dramatically opened up the world to ordinary people. Three generations ago, the hidden rose-red city of Petra had been viewed only by the most intrepid (and well-off) adventurers. Now a secretary from Winnipeg can see this ancient marvel on a stopoff in Jordan on her way to view the Taj Mahal.

Jet aviation is directly responsible for creating what is now the world's largest industry, international tourism. Hundreds of thousands of travel agencies have opened their doors to serve pleasure travellers, and resorts, hotels and other tourist facilities have sprung up almost literally from pole to pole. Though many would argue that this is not altogether a good thing for the host nations, there can be no doubt about its enormous economic impact. It is estimated that tourism is directly or indirectly responsible for one out of every nine jobs in the world.

The potential despoliation of cultures and environments on the tourist circuit is only one feature of the inevitable dark side of progress in international aviation. If the jet plane has spawned a new class of world traveller, it has also spawned a new and particularly vicious class of terrorist. As well, the extreme competition which has made overseas air travel such a fabulous bargain has spread financial distress throughout the industry, causing many airlines (including the historic Pan American) to succumb to bankruptcy. Most others are surviving by the financial skin of their teeth.

But the industry no doubt will overcome its present problems, just as it has overcome so many others in the 75 years since the forerunners of ICAO and IATA were founded. In those years it has been through social upheavals, depressions, recessions, and wars both hot and cold. Throughout it all, civil aviation has remained a model of pragmatic international cooperation in the interests of the convenience, comfort, and safety of its users everywhere. If all human affairs were conducted in the same spirit, mankind would have a lot less to worry about.

