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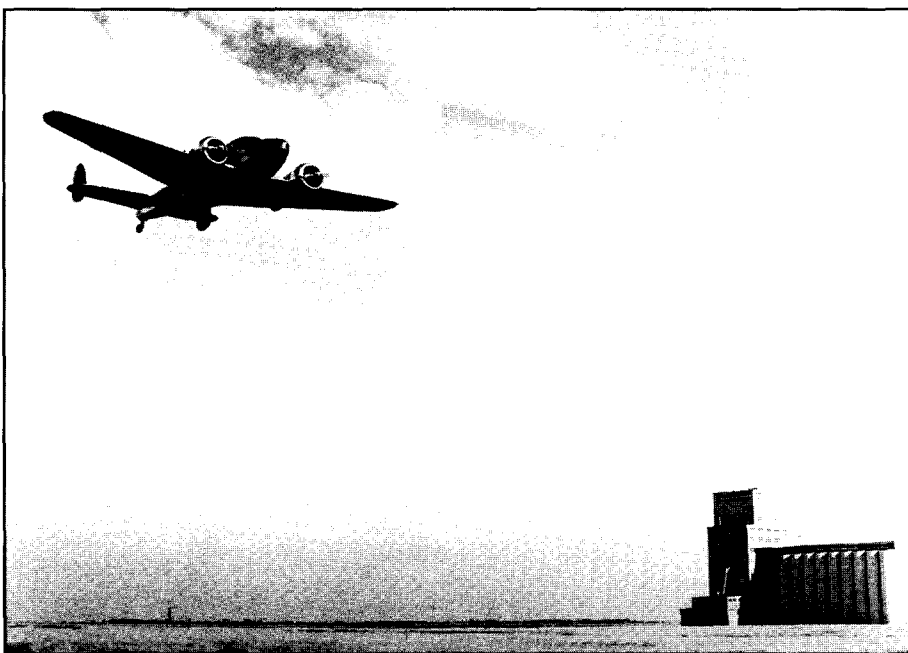
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Lethbridge and the
Trans-Canada Airway

Aemilius Simpson

Book Reviews

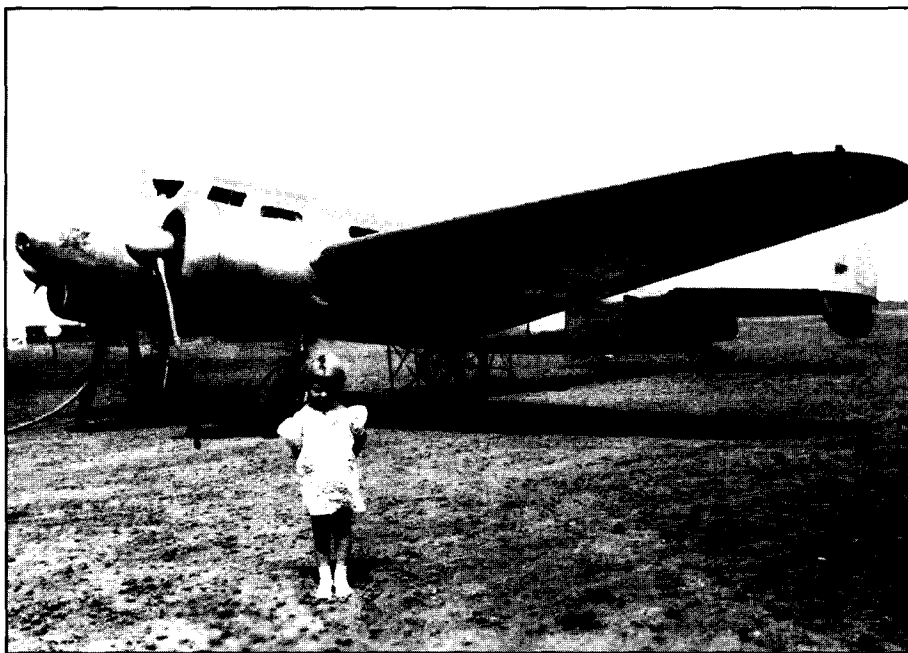
Jasper House, 1872



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by
**Ian MacLachlan
 and Bruce MacKay**



For the first nine years of trans-continental airline service, 1939-1948, Lethbridge was western Canada's principal airline hub. The city was ideally situated to fulfill this function due to its location on the southerly route of the Trans-Canada Airway and the limited operational ceiling of the unpressurized Lockheed aircraft then in use.¹

In the early years of civil aviation, air travel was viewed as a mode of last resort rather than a competitor to existing systems of transportation. Canada's early commercial focus was primarily north-south as bush planes provided access to resource extraction sites in the near north. It was supposed that competition between aeroplanes and ground transportation might materialize at some future date, but it was certainly not a serious consideration.² In the late 1920s, the flow of air traffic began to shift to an east-west orientation due to the advent of air mail, rapidly developing passenger air service in the United States, and calls to link the far-flung components of the British Empire with a system of airways.

Above, top:

The first "dawn to dusk" experimental flight from Montreal to Vancouver was flown by a Lockheed 12A on July 31, 1937. Here the aircraft is etched against the sky in the late afternoon, climbing away from Lethbridge.

Above:

A little girl stands in front of a TCA Lockheed 10-A undergoing refuelling in Lethbridge about 1938. This particular aircraft is now displayed at the National Aviation Museum, Ottawa.

Lethbridge e Trans-Canada Airway

Air mail service was the first means of adapting aviation technology to the task of nation-building. By 1931, air mail links corresponded roughly with the system of highways and, perversely, the gaps in Canadian air service were roughly coincident with the cordillera and the Canadian Shield — the same gaps that challenged Canada's land-based transcontinental route ways. There was no regular service across the Rockies and American air services were used to detouring around the Canadian Shield country between Windsor, Ontario, and Emerson, Manitoba. Air mail seemed more justifiable than passenger service which was viewed as an unwelcome bedfellow. According to one commentator of the day, "Mails may be lost but must never be delayed and passengers may be delayed but must never be lost."³ At the onset of the Depression of the 1930s, the Canadian government curtailed its air mail services and then cancelled them outright in 1932, not to be reinstated until 1938. Yet in establishing the Canadian airways and the principles for a regular scheduled air service, air mail service became a vital precursor to scheduled air passenger service.

During the 1930s there was a growing realization that Canada would have to take preemptive action to safeguard its skies and prevent American airlines and air routes from tapping into Canadian traffic, thus weakening Canada's tenuous east-west linkages. Aviation could function as "the solder to renew

the provincial weld that so inspired our Fathers of Confederation."⁴ But this was a daunting challenge for a country of only 11 million that required an airway spanning 3,300 miles from Moncton to Vancouver.

Such a Canadian airway was recognized as the "air bridge" that would be required to articulate the British Empire in the modern age, just as the CPR had functioned as a "land bridge" between the Atlantic and Pacific steamship lines. Canada was a major link in the "all-red" route from Britain to the Far East.⁵ In 1935, Canada, Newfoundland, the Irish Free State, and Britain negotiated plans to develop a trans-Atlantic mail and passenger service using flying boats. The North Atlantic service, anchored at its eastern end in Canada and Newfoundland, would benefit from a shorter great circle route than one operated directly to New York. Experimental trans-Atlantic flying boat services began in 1937 with Imperial Airways (later to become BOAC and eventually British Airways) and Pan American linking Southampton with North America via Foynes, Ireland; Botwood, Newfoundland; Shediac, New Brunswick; occasionally Longueuil, just across the river from Montreal; and then on to New York.⁶ With a nascent trans-Atlantic air service calling at Canada's eastern portals and American giants knocking at the door of every major city along its length and breadth, the Canadian government chose to intervene



Above:

This hangar was built in Lethbridge by TCA in 1938 at the new Kenyon Field Airport. The rotating electric beacon on the roof of the hangar is now in the Galt Museum.

Right:

One of the twenty-one DC-3 aircraft used by TCA between 1946 and 1959 is seen here at Kenyon Field. At left, the ground crew pushes the boarding stairs into position.

directly in civil aviation to preempt the Americans and cooperate with British ambitions for an all-red route from London to the Pacific Rim.

On April 10, 1937, Trans-Canada Air Lines⁷ (TCA) was created as a crown corporation with a mandate to provide transcontinental air passenger, air mail, and air freight service. Why was a crown corporation created *de novo* when a private sector firm, Canadian Airways (precursor to Canadian Pacific Airlines and later Canadian Airlines International), was already in existence as Canada's largest air carrier? The decision has been variously attributed to "a fit of absence of mind," the mutual distrust between James W. Richardson, founder of Canadian Airways, and C.D. Howe, Minister of the Department of Transport, and by the unwillingness of Canadian Airways to participate in the new airline without having much influence in its management.⁸ Trans-Canada Air Lines was created as a wholly-owned subsidiary of Canadian National Railways.

Only four months after its incorporation, TCA began carrying passengers on Canadian Airways' former Vancouver to Seattle route. But the primary goal of TCA was transcontinental service and

much of 1938 was devoted to a daily "ghost service" to train air crew in the demands of night flying, and ground crew in the routines needed to maintain regularly scheduled air service.⁹ The nascent airline established maintenance facilities in Montreal and Winnipeg to service its aircraft and built hangars in smaller centres. In Lethbridge, TCA built a brick and steel hangar in 1938, a distinctive structure which still stands. Erected at a cost of some \$150,000, the bricks were shipped in from the brickyards of Medicine Hat and cemented in place by local masons. Steel beams had to be rivetted together by outsiders as there were no high steel workers available in the city.¹⁰

While TCA made a considerable investment in its maintenance bases, the young airline's ability to provide transcontinental service was dependent on rapid developments in aircraft technology. In the late 1920s high wing monoplanes began to be built with fuselages of welded steel tubing and wings of wooden spars covered in a metallic sheath. These began to replace the wire-braced wood and fabric biplanes in use after World War One. In the United States, monoplanes such as the single-engine Fairchild 71 and the Fokker Universal, and the three-engine Ford Tri-motor provided the earliest aircraft for mail and passenger service.

Beginning in the 1930s, a revolution in aircraft design saw a new generation of all-metal low-wing monoplanes with retractable landing gear that established a new configuration for passenger aircraft. The avant garde airliners of the 1930s were built using monocoque construction and a prestressed aluminum alloy known as duralumin. The shiny metallic skin became an integral part of the overall structure instead of just a shield for deflecting wind away from the frame. Sleek aluminum cowlings were fitted over the front of radial engines to reduce the drag created by their massive finned cylinders and added to their streamlined appearance. Twin engines

were built into the leading edge of the wing and equipped with variable-pitch propellers to optimize take-off power and cruising speed at a constant rate of rotation.

The principal representatives of this new generation of airliners were the Boeing 247 introduced in 1933, the Douglas DC-2 in 1934, the Lockheed 10-A Electra in 1934, and the Beech 18 in 1937. The flowing, almost voluptuous, curves of these "streamlined" aircraft made them quite distinct from the typical bush plane with its boxy fuselage, strut-braced high wing, exposed radial engine and huge fixed pontoons. But the streamliners shared two of the bush planes' ineluctable limitations: they were not pressurized nor were they initially equipped to provide oxygen; thus they operated at comparatively low altitudes.

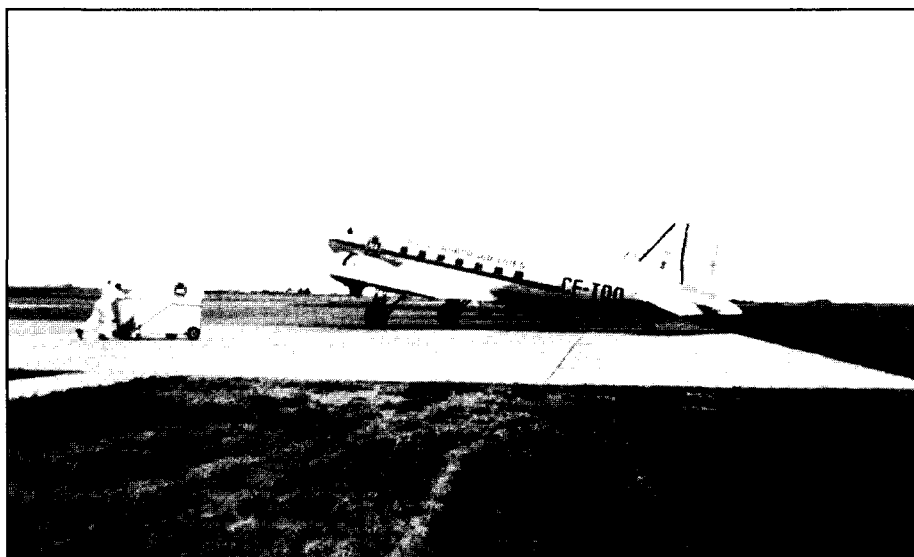
TCA's first twin-engine aircraft was the Lockheed 10-A, similar to the plane that carried Amelia Earhart half way around the world and ultimately to her death. As the airline prepared for regular transcontinental service, it acquired a stretched and longer range version of the Lockheed 10-A known as the Lockheed 14H, the Super Electra, which had a maximum capacity of ten passengers. Ten of the new Lockheed 14H's carrying ten passengers and three crew were required to inaugurate the transcontinental passenger service. While official specifications rated it at a ceiling of 24,300 feet and a range of 2,060 miles, in practice the Lockheed Super Electras seldom flew at altitudes over 11,000 feet or for distances much in excess of 800 miles. Originally powered by a pair of Pratt & Whitney Hornet engines developing 875 horsepower, the Lockheed 14H was plagued with cylinder head failures.¹¹ The TCA fleet was re-engined with 1,200 horsepower Pratt & Whitney Twin Wasp engines, and the aircraft were redesignated as the Lockheed 14-08. While the Lockheed 14-08 never enjoyed the popularity of the larger Douglas DC-3, it was

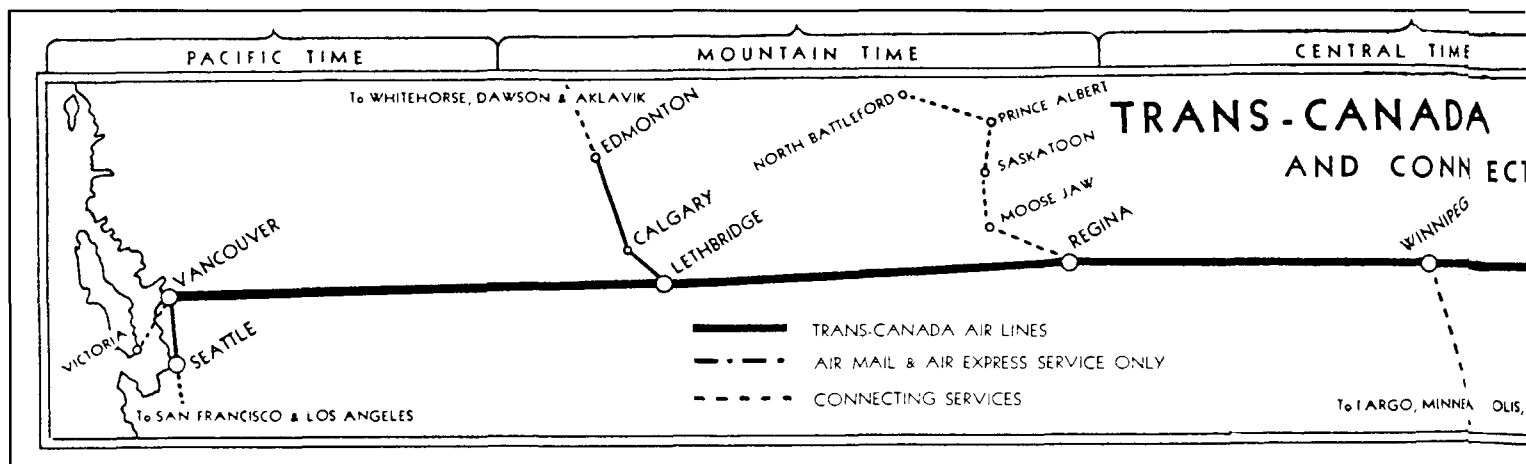
advertised by TCA as the world's fastest commercial transport, an essential feature, given the enormous distances to be covered and the relatively small size of the Canadian cities to be linked. In 1941 TCA began acquiring a stretched version of the Lockheed 14-08 known as the Lockheed 18 or "Lodestar" which had a capacity of fourteen passengers but similar operating characteristics.

A clear distinction was indicated in the Trans-Canada Air Lines Act between an "air line," the organization which owned and operated passenger aircraft according to a regular schedule, and an "airway," a government-owned system of airports, navigational aids, and meteorological services. Infrastructure in the form of airway radio beacons and airports for regular landings and take-offs and for emergency purposes, were vital and costly prerequisites to scheduled air travel. In total the airway cost some \$5 million to \$6 million, a massive investment at that time.¹²

Surveys for the Trans-Canada Airway began in 1928 and construction was underway by the next year. With their chain of radio beacons and airfields, "airways" were conceived as linear routes much like railway tracks; a scheduled aircraft service could not safely deviate from them. Added to these

"During the 1930s there was a growing realization that Canada would have to take preemptive action to safeguard its skies and prevent American airlines and air routes from tapping into Canada's tenuous east-west linkages."





technologically-driven safety concerns were the political imperatives of nationalism. An all-Canadian airway system would help to keep Canadian traffic at home and fend off the leviathan to the south.¹³ The Trans-Canada Airway was built and maintained by the federal Department of Transport; it owned no planes, operated no flights, and sold no tickets. Yet it was a *sine qua non* of scheduled civil aviation in the early 1930s.

Development of the airway accelerated in 1933 when it became part of a relief project of the Depression, organized by the government of Prime Minister R.B. Bennett. Clearing, stumping, and grading remote airports was thought to be an “admirable task for the re-employment of single, homeless men.”¹⁴ Construction camps housing thousands of tradesmen were established from British Columbia to the Maritimes to build aerodromes, each with two or more 3,000-foot landing strips, field and runway lighting, and a variety of buildings to accommodate radio and meteorological staff and equipment. The airway’s nineteen principal airports each had two or more paved landing strips. They were surveyed in the form of a triangle, el, cross, or tee, while the remainder of the field was only rough graded and seeded to grass.¹⁵ The runways were 3,000 feet long at sea level and to make allowance for the thinning of air as elevation increased,

150 feet of additional runway length was required for each 1,000 feet above sea level. Thus, for example, the Lethbridge Airport at an elevation of about 3,000 feet, required runways of 3,450 feet. In fact, its first two runways were 3,400 and 3,700 feet long.¹⁶

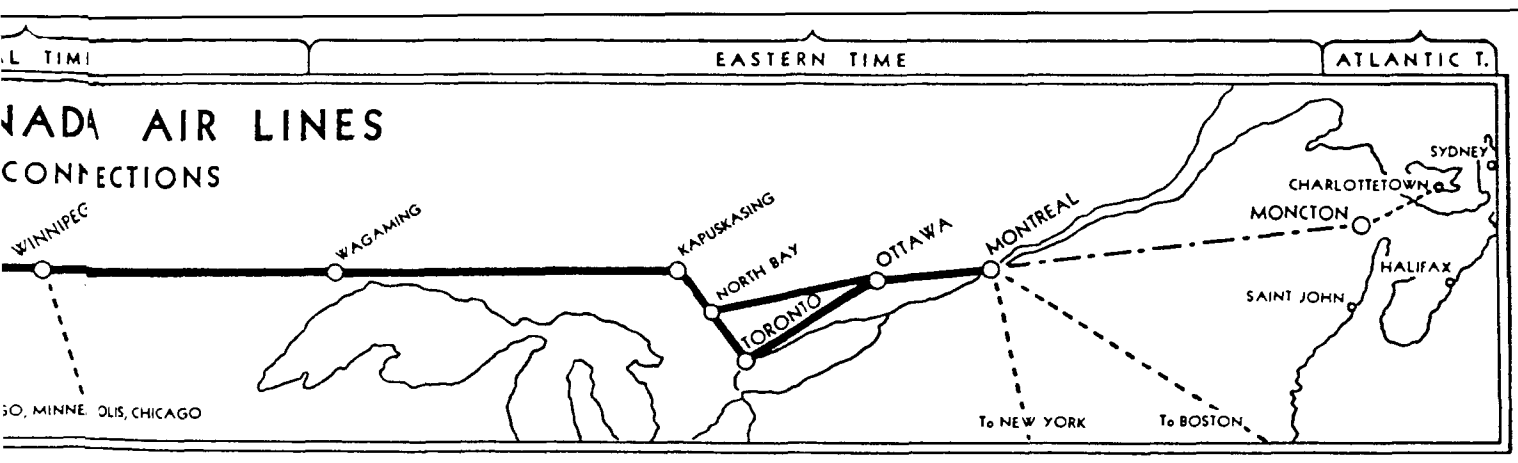
The preparation of airports was especially arduous in the Canadian Shield country of Ontario where clearing and stumping were the first phases of construction. In the grasslands of the prairie west, grading and seeding to grass were the most important requirements in creating runways and taxiways. Major centres such as Calgary already had a municipal airport and the airway required only that these have hard surfaced runways and full lighting. In the case of Montreal’s St. Hubert Airport, the major task was to dismantle the mooring mast that had been built as the eastern terminal for trans-Atlantic dirigibles but was used only once.

A transcontinental air service of sixteen hours duration required night flying; thus the Trans-Canada Airway required lighted beacons to visually show the way and to mark obstructions such as antennas and industrial chimneys. Airports needed full field and runway lighting for safe landings and takeoffs. In an age when flying depended on visual navigation, the airway was illuminated with acetylene lanterns on squat steel towers at fifteen-mile



Top:

This map was prepared by Trans-Canada Airlines in 1939 to mark its route across Canada



intervals. At each airport along the airway, there was a one million candlepower rotating light beacon. In remote locations that were off the electrical grid, a diesel-powered generator was essential for lights and radio beacons.¹⁷

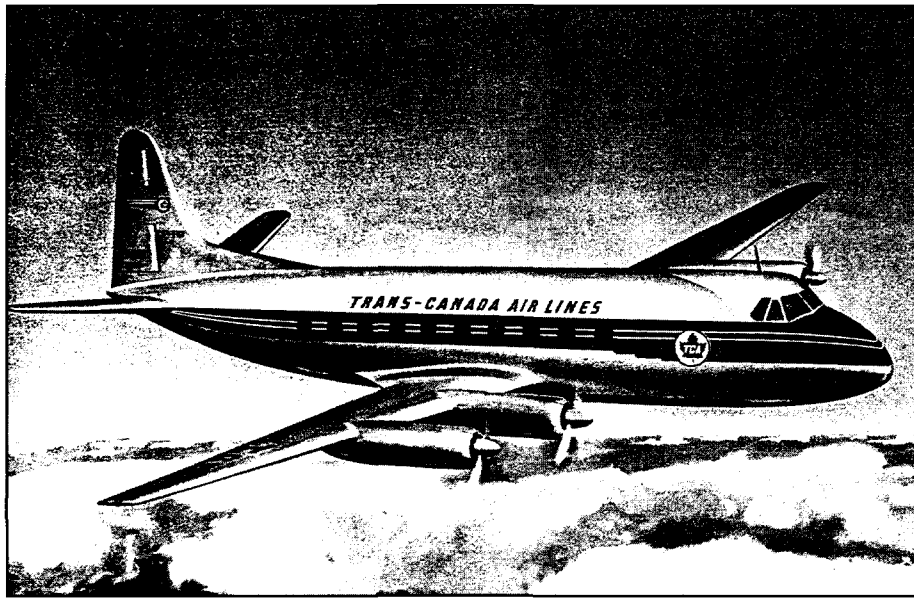
The airway was also equipped with radio beacons to enable aircraft to use the first generation of radio direction-finding (RDF) apparatus. "Radio ranges" were constructed of four steel towers forming a 600-foot square connected by antenna leads to enable directional radio transmission. The radio ranges transmitted the morse signal for the letter "A" (dot-dash) to the northwest and southeast quadrants and the letter "N" (dash-dot) to the northeast and southwest quadrants. When an aircraft equipped with RDF was pointed directly towards the radio range, the two signals were heard in the pilot's earphones with equal intensity, merging into a steady drone. As long as the pilot heard this steady drone, the aircraft was "on the beam" and could fly directly from radio range to radio range even though the ground was not visible. When the drone stopped, the aircraft was in the "cone of silence" directly above the radio range so that pilots flying on instruments could determine their position with exactitude.

Between the major terminal airports where regular traffic was expected and refuelling was necessary, secondary or

"hundred mile airports" were built at locations such as Cowley and Red Deer to provide a lighted all-weather airfield for emergencies. Due to the limited range of the aircraft, two airports in remote locations in northern Ontario were carved out of the bush and built from scratch: Kapuskasing and Armstrong (initially called Wabamungo). Like divisional points on the transcontinental railway which were essential to provide coal and water to steam locomotives, these airports were necessary for refuelling, not for their passenger generation potential. When completed, the Trans-Canada Airway had nineteen principal airports at which regular stops were made, twenty-four intermediate fields with radio ranges, and forty-two emergency fields, the latter mainly in unsettled and difficult parts of the country where there was no level cleared land at hand for an emergency landing.¹⁸

From Montreal to Winnipeg, the Trans-Canada Airway followed Canada's northernmost rail lines, most of which had been cobbled together in 1923 to create Canadian National Railways. It followed the Canadian Northern (CNR) line from Montreal to Ottawa and on up the Ottawa Valley to North Bay. At North Bay, the airway struck north along the Temiskaming & Northern Ontario Railway to Cochrane. At Cochrane, the airway turned west and followed the route of the National Transcontinental





Railway (CNR) all the way through Kapuskasing, Wagaming, Sioux Lookout, and on to Winnipeg.

The National Transcontinental Railway line crossed easier country than either the Canadian Pacific or Canadian Northern rail lines through northern Ontario. The climate was colder but the variance in temperature was less. The northernmost rail line also provided better access to the mining communities of northern Ontario and Quebec. Finally, suitable sites for the intermediate aerodromes were difficult to find or unavailable along the rugged and rocky Canadian Shield that lined the two more southerly rail lines.¹⁹ In essence the route through northern Ontario cut a chord across the southern lobe of the Hudson Bay lowland; it required many fewer rock cuts and though heavily forested by black spruce, its relief is quite low. From Winnipeg westward, the airway followed the southernmost railway in Canada, the CPR main line, through Brandon, Regina, and Swift Current to Medicine Hat. From there it followed the CPR's Crowsnest Pass route to Lethbridge, Cranbrook, Grand Forks, Hope, and on to Vancouver.

closely? The chain of airports that made up the airway demanded road or rail access to bring in the massive machinery to clear and grade the airports, construction materials for runways and buildings, and the heavy equipment required to actually operate the airports and supply fuel to aircraft. In some regions the equipment and supplies could be shipped in by road. But the great difficulty in building the Trans-Canada Airway was that it preceded completion of the Trans-Canada Highway by some thirty years. There was no Canadian highway link crossing northern Ontario on the 800-mile route between Cochrane and Winnipeg. In British Columbia, the Columbia Mountains had been broached in two places by the CPR but there was still no roadway through the Monashee Range between Castlegar and Penticton in the south and across the Selkirks between Revelstoke and Golden. Thus the Trans-Canada Airway had to follow the railway route across the country because there was no other way that a series of airports, like beads on string, could be built sufficiently close together to support the scheduled and emergency needs of aircraft with an operating range of less than 800 miles.

The prairie section of the Trans-Canada Airway proved to be the easiest to build and by March 1930, a nightly mail service from Winnipeg to Calgary and north to Edmonton was in operation. When crossing the Rocky Mountains the decision was made to route the airway through Lethbridge and the Crowsnest Pass on its way to Vancouver. Thus Lethbridge, with a population of 13,500 became an important junction point while Calgary, with a population of 103,000 in 1931, was bypassed.

The standard explanation for this routing is that Trans-Canada Airlines elected to follow the Crowsnest Pass because the mountains were lower and the Lockheed 14 aircraft then in use cruised most efficiently at 8,000 to 10,000 feet.²⁰ A glance at any aeronautical chart shows



Above:

Trans-Canada Airlines was the first North American airline to enter the turboprop age in 1954 with the Vickers Viscount, seen here as part of a TCA advertisement. The Viscount was still in service when Air Canada discontinued Lethbridge operations in 1970.

Right:

A DC-3 is refuelled in Lethbridge about 1947.

Why did the Trans-Canada Airway follow the geography of the railways so

that this is indeed the case though the difference in elevations is not great. The highest terrain elevation on the route from Calgary to Vancouver is 12,000 feet while the highest elevation along the Lethbridge to Vancouver route is 10,900 feet. The Crowsnest pass route is only 1,100 feet lower than the Kicking Horse Pass route. Considering the cost and inconvenience of serving Lethbridge with a feeder line joining Calgary and Edmonton, the slight difference in elevation seems trivial as a motivating factor. TCA pilots were required to maintain a minimum altitude through the Rockies of 11,000 feet to provide a 1,000 feet of clearance over the highest peaks.²¹ Clearly other factors were at work which militated in favour of the southerly route. According to J.A. Wilson, Controller of Civil Aviation:

Exhaustive surveys showed that the Crow's Nest route through southern British Columbia was preferable in every respect. It was shorter, the climate was better, it passed through a more settled area and the difficulties of constructing aerodromes were less there than on the alternative routes via the Yellowhead and Kicking Horse Passes. Aerodromes were already in existence on the route at Fernie, Cranbrook, Trail, Grand Forks and Chilliwack which would decrease the cost of construction.²²

In addition to the data provided by these early surveys, there was a powerful precedent set by the first flight across the Rockies and the early air mail flights which had followed the Crowsnest Pass route due to its lower elevation.

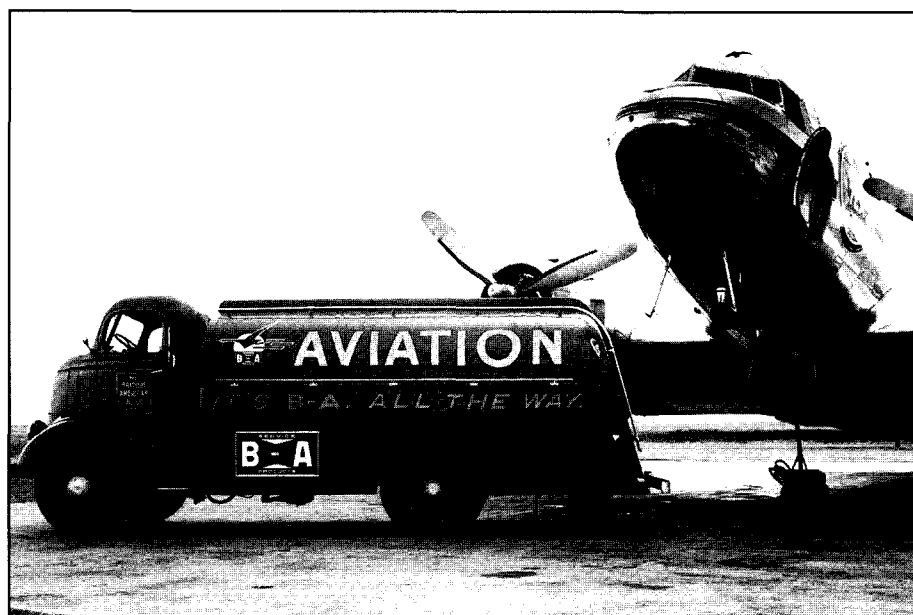
Thus, the decision to route air traffic through Lethbridge had nothing to do with Trans-Canada Air Lines, the operational ceiling of the Lockheed Electra aircraft, or the 1,100-foot difference in the elevation of the Rocky Mountains between the Kicking Horse and Crowsnest passes. The decision that the airway should take the southern route through Lethbridge and the Crow's

Nest Pass was taken in 1931, six years before the incorporation of TCA and three years before the maiden flight of the Lockheed Electra. The Trans-Canada Airway was surveyed and planned in an earlier technological era in which the maximum ceiling of the larger aircraft in use in Canada such as the Fairchild 71 was 14,150 feet, making the elevation difference of much greater concern.

Between the time the route was surveyed and the time it was finally used for scheduled passenger flight, it had already become obsolete as a result of technological improvements such as streamlining, weight reducing monocoque construction, more powerful engines, and the variable pitch propeller. However, as a federally regulated agency under the Trans-Canada Airlines Act, the airline was required to fly such routes as were set out under contract and designated by the cabinet.²³

Transcontinental passenger service began on Saturday, April 1, 1939, with an eastbound flight leaving Vancouver and a westbound flight leaving Montreal. The flight from Vancouver arrived in Lethbridge on time and met the "feeder line" connection that had flown south from Edmonton via Calgary. The inaugural westbound flight

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MONTREAL-WINNIPEG-VANCOUVER-VICTORIA										
TRIP SCHEDULES — DAILY										
Westbound—Read Down				Eastbound—Read Up						
Trip No.	Trip No.	Trip No.	Miles	Table No. 1		Time	Trip No.	Trip No.	Trip No.	
	1							2		
	9 00 PM		0	Lv	Montreal	Ar	EST	12 15 PM		
	9 50 PM		110	Ar	Ottawa	Lv	"	11 25 AM		
	10 00 PM			Lv	Ottawa	Ar	"	11 15 AM		
	11 25 PM		307	Ar	North Bay	Lv	"	9 50 AM		
	11 40 PM			Lv	North Bay	Ar	"	9 35 AM		
	1 25 AM		575	Ar	Kapuskasing	Lv	"	7 50 AM		
	1 35 AM			Lv	Kapuskasing	Ar	"	7 40 AM		
	3 20 AM	*	870	Ar	Wagaming	Lv	"	6 41 AM		
	4 55 AM		1242	Ar	Winnipeg	Lv	CST	3 25 AM		
	5 10 AM			Lv	Winnipeg	Ar	"	3 10 AM		
	6 25 AM		1575	Ar	Regina	Lv	MST	12 20 AM		
	6 35 AM			Lv	Regina	Ar	"	12 10 AM		
	8 55 AM		1942	Ar	Lethbridge	Lv	"	10 05 PM		
	9 10 AM			Lv	Lethbridge	Ar	"	9 50 PM		
	11 10 AM		2411	Ar	Vancouver	Lv	PST	6 15 PM		
9-A	1-A	15-A		Via Canadian Airways Ltd.				10-A	16-A	2-A
ex. Sun.	Daily #	ex. Sun.						ex. Sun.	ex. Sun.	Daily
9 00 AM	11 30 AM	3 00 PM	0	Lv	Vancouver	Ar	PST	10 30 AM	2 00 PM	4 40 PM
9 30 AM	12 10 PM	3 30 PM	53	Ar	Victoria	Lv	"	10 00 AM	1 30 PM	4 00 PM

TORONTO-WINNIPEG-VANCOUVER-VICTORIA										
TRIP SCHEDULES — DAILY										
Westbound—Read Down				Eastbound—Read Up						
Trip No.	Trip No.	Trip No.	Miles	Table No. 2		Time	Trip No.	Trip No.	Trip No.	
	21							22		
	10 00 PM		0	Lv	Toronto	Ar	EST	11 15 AM		
	11 20 PM		187	Ar	North Bay	Lv	"	9 55 AM		
	1							2		
	11 40 PM			Lv	North Bay	Ar	"	9 35 AM		
	1 25 AM		455	Ar	Kapuskasing	Lv	"	7 50 AM		
	1 35 AM			Lv	Kapuskasing	Ar	"	7 40 AM		
	3 20 AM	*	750	Ar	Wagaming	Lv	"	6 41 AM		
	4 55 AM		1122	Ar	Winnipeg	Lv	CST	3 25 AM		
	5 10 AM			Lv	Winnipeg	Ar	"	3 10 AM		
	6 25 AM		1455	Ar	Regina	Lv	MST	12 20 AM		
	6 35 AM			Lv	Regina	Ar	"	12 10 AM		
	8 55 AM		1822	Ar	Lethbridge	Lv	"	10 05 PM		
	9 10 AM			Lv	Lethbridge	Ar	"	9 50 PM		
	11 10 AM		2291	Ar	Vancouver	Lv	PST	6 15 PM		
9-A	1-A	15-A		Via Canadian Airways Ltd.				10-A	16-A	2-A
ex. Sun.	Daily #	ex. Sun.						ex. Sun.	ex. Sun.	Daily
9 00 AM	11 30 AM	3 00 PM	0	Lv	Vancouver	Ar	PST	10 30 AM	2 00 PM	4 40 PM
9 30 AM	12 10 PM	3 30 PM	53	Ar	Victoria	Lv	"	10 00 AM	1 30 PM	4 00 PM

Above:

A TCA airline schedule, seen here for November 1, 1939, was patterned after a railway timetable. Each flight was a "Trip" and was read downwards for westbound trips and up for eastbound ones.

was less fortunate. It arrived in Lethbridge on Sunday morning but was then held there by bad weather. The unfortunate plane attempted to leave on the Monday but was forced to turn back while over Cranbrook due to excessive icing of wings and control surfaces. By Monday, a second plane had arrived from the east and it finally flew through to Vancouver.²⁴ Thus the first ever Trans-Canadian passenger flight from east to west was never completed.

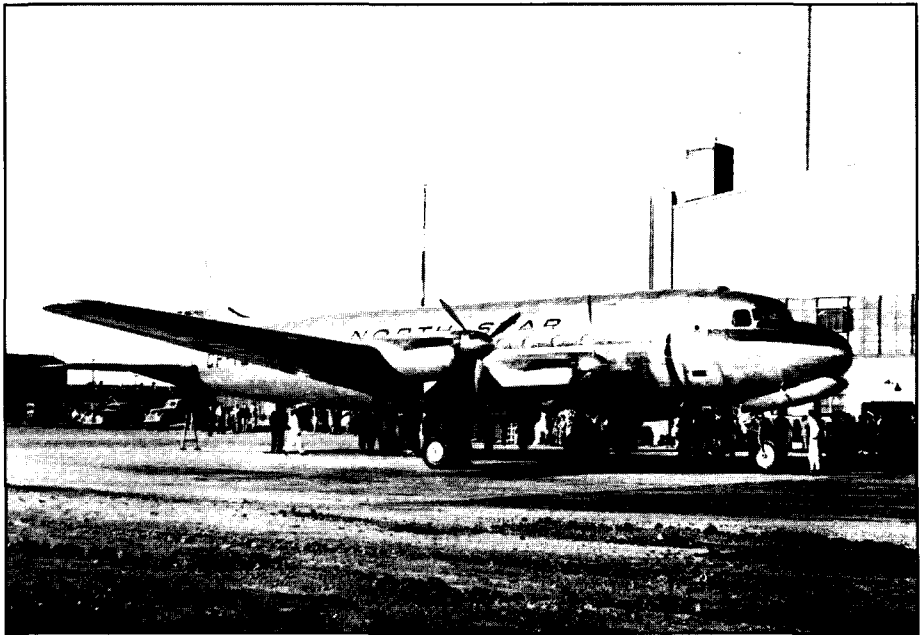
Once established, the transcontinental air service was quite tightly scheduled. The east bound and west bound aircraft arrived in Lethbridge at 08:55 and 09:50 respectively and remained on the ground for a fifteen minute refuelling stop before resuming flight.²⁵ The arrival and departure of aircraft on the Calgary-Edmonton spur line was timed to facilitate the transfer of passengers originating from and destined for points both east and west. This principle of timed convergence and divergence of aircraft is the essence of airline hub operations up to the present day.

The first TCA airline schedule demonstrates some of the culture shock that the air age induced on a country that had only just become accustomed to reliable intercity train service. TCA was owned by Canadian National Railways and shared its officers and some upper level management. Little wonder then, that the airline's timetable was structured in exactly the same way as a train timetable. TCA operated four numbered "trips" (they could hardly be called "trains"), predating the use of numbered flights. The westbound flight from Montreal to Vancouver was "Trip 1" and the eastbound flight was "Trip 2," the same numbers used by the crack passenger trains on the transcontinental route. Similar to a train schedule, TCA's flight schedule had a central column of places, a westbound column of times which were "read down" and an eastbound column of times which were "read up."

The transcontinental routes originated in Montreal and went to North Bay via Ottawa where they met a connecting flight from Toronto. The passengers from both cities then proceeded across the continent on a single aircraft in exactly the same ways as the trains did. For passengers going to or from the Maritimes, the TCA schedule promoted a direct connection between Montreal's St. Hubert Airport and the Canadian National Railways' Ocean Limited, which stopped at the airport for connecting passengers.²⁶ This was the only time that a Canadian airport ever had a direct railway connection, a feature which is commonplace at many European and Japanese airports. Air service was gradually extended eastward, first to Moncton, then to Halifax; service to St John's was finally inaugurated on May 1, 1942. However, this occurred during wartime and the eastern service was viewed as part of "hemispheric defence" so few seats were available for civilians.

During World War Two, Canada's fledgling aircraft industry concentrated on the assembly of aircraft that had been designed, flight tested, and proven in Britain or the United States. Thus it seemed natural that the post war requirement for a longer range and higher passenger load airliner be satisfied by manufacturing foreign aircraft under license. Boeing had been preoccupied with long range bombers while Lockheed's Constellation was not yet ready. Thus Montreal-based Canadian Vickers, soon to become Canadair, turned to the Douglas corporation that had produced so many of the legendary DC-3's in the United States.

The North Star was a Canadian version of the Douglas DC-4, with some added features of the DC-6. The DC-4 brought wartime innovations into the post war era: it had four engines, power-assisted controls, flush rivetting, and a steerable nose wheel in a tricycle configuration to replace the tail-dragging DC-3. The



American version was equipped with four Pratt & Whitney Twin Wasp engines, developing 1,450 horsepower, and could stay airborne even if two engines were out of action. To foster its place in the peacetime aviation industry, the Canadian government encouraged the production of this large four-engine aircraft. Using equipment and parts from a war surplus Douglas Aircraft plant in Illinois, the North Star was built at Canadair's Cartierville plant and was first flown in middle 1946. It was a unique "Made in Canada" blend of American and British aviation technology. The airframe employed a slightly shortened DC-6 fuselage, nose, and landing gear, while the tail section wings and control surfaces were based on the DC-4. It was felt that the aircraft needed more power than the standard DC-4 to permit it to fly at altitudes of up to 25,000 feet to avoid the notorious weather of the North Atlantic. At the same time, additional take-off power was essential because some Canadian runways were snow-covered for a significant portion of the year.

In the British aircraft design tradition, the North Stars were equipped with liquid cooled in-line Rolls Royce Merlin engines instead of the air-cooled radials

Above:

This Northstar prototype arrived at Lethbridge in 1947, likely on one of its first east-west flights. Note the row of exhaust ports and the massive air intakes below the propeller which indicate in-line, liquid-cooled Rolls Royce Merlin engines

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"For nearly ten years, between 1939 and 1948, Lethbridge attained a status in Canada's airline system that was quite unwarranted given its small size and peripheral character... Once pressurized long-range aircraft made non-stop high altitude transcontinental flight feasible, the situational advantage conferred on Lethbridge by its location evaporated."

used in the United States. With a top speed of 200 mph compared to the Lockheed Constellation at 280 mph, the aircraft were slow but reliable. The first versions of the North Star (DC-4M-1) were designed for the RCAF and were not pressurized. The later versions (DC-4M-2), designed for TCA and later used by Canadian Pacific Airlines and BOAC, were pressurized like the Douglas DC-6.²⁷

The North Star gave Trans-Canada Airlines a forty-passenger Canadian-built plane to replace the converted Lancaster bombers used on TCA's trans-Atlantic route, and the aging Super Electras and Lodestars in the transcontinental service. The North Star "Skyliners" entered service with TCA on April 1, 1948, on the Montreal to New York run. The aircraft were scheduled to fly from Calgary direct to Vancouver beginning June 1, 1948, but severe flooding of the Fraser River had cut road and rail service to Vancouver a few days earlier. For the first time in its history, Vancouver was isolated from the rest of Canada for nearly three weeks and, as a harbinger of things to come, TCA stepped into the breach and ferried all of the rail passengers between Calgary and Vancouver with thirty flights per day using its brand new North Stars. By the time rail service was finally restored on June 16, Calgary's main runway 16-34 was so badly broken up by the heavy traffic and spring runoff that it had to be closed and the trunkline service reverted to Lethbridge for several months.²⁸

When the Calgary runway was finally reopened, the trunk line service with North Stars returned to Calgary permanently. Lethbridge's slide to commercial aviation obscurity had begun. TCA's "Prairie Service" saw a daily flight hedgehop from Regina to Calgary via Swift Current, Medicine Hat, and Lethbridge between May 1, 1948 and September 1963, when it too was abandoned. Lethbridge was the destination for a daily midday flight

from Calgary until 1970 when it was discontinued and Air Canada pulled out of Lethbridge entirely.

As well as being a critical refuelling stop and junction on TCA's east-west "coast to coast" service, Lethbridge was also the point of entry for Western Air Lines (later merged into Delta Airlines). A "Pine to Palm" Service was inaugurated with a daily return flight from Great Falls, Montana, to Lethbridge. Passengers could then continue north to Calgary, west to Vancouver, or east to Regina on TCA. This service began on June 1, 1941, using Douglas DC-3 aircraft, adding to other north-south services such as Moncton-Bangor, Maine, and Vancouver-Seattle. By 1947 Western had added a number of additional stops to its south-north service. Leaving Salt Lake City at 8:45 am, Western included stops in Pocatello, Idaho Falls, Butte, Great Falls, and Cut Bank (to clear customs) before arriving in Lethbridge at 3:00 that afternoon. The DC-3 was turned around in 45 minutes and made its way south back to Salt Lake City by the same route, arriving at 10:00 pm. Thus from 1941 until 1950, Lethbridge was Alberta's only international airport.

Beginning on May 1, 1950, Western Airlines added a DC-4 service that terminated in Edmonton. In 1959 Calgary gained its first international flight when Western adopted the new Lockheed L-188A Electra turbo prop aircraft for a daily flight from Salt Lake City that overflew Lethbridge. When this occurred, Western Air Lines' Alberta terminal was shifted north to Calgary.²⁹

For nearly ten years, between 1939 and 1948, Lethbridge attained a status in Canada's airline system that was quite unwarranted given its small size and peripheral character. The city was selected as a hub due to its fortuitous situation relative to the route first selected for the Trans-Canada Airway. Lethbridge was favoured by its intermediacy in relation to Vancouver,

Calgary, Regina, and Great Falls. But it was never able to parlay this intermediacy into centrality and achieve a level of administrative, financial, or corporate dominance commensurate with its position in the airline network. Lethbridge's intermediacy was contingent upon a fleeting technological advantage. Once pressurized long-range aircraft made non-stop high altitude transcontinental flight feasible, the situational advantage conferred on Lethbridge by its location evaporated and the city's role reverted to the peripheral status that lingers to the present day.

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NOTES

- 1 This paper benefited from consultation and advice from Greg Ellis, Archivist, Sir Alexander Galt Museum and Archives; Stephen Payne, Curator of Aero Technology, National Aviation Museum; Peter Pigott, Byron Reynolds, Reynolds Aviation Museum; and Jennifer Romanko, Curator, Canada's Aviation Hall of Fame.
- 2 G.P. de T. Glazebrook, *A History of Canadian Transportation Volume II* (Ottawa: Carleton Library Reprint, McClelland and Stewart, 1964), 256.
- 3 Philip Smith, *It Seems Like Only Yesterday: Air Canada the First 50 Years* (Toronto: McClelland and Stewart, 1986), 11.
- 4 Fergus Grant, "Across Canada by Air" *Canadian Geographical Journal* 18:5 (May 1939), 278.
- 5 de T. Glazebrook *op. cit.*, 262.
- 6 T.M. McGrath, *History of Canadian Airports* (Ottawa: Lugus Publications in cooperation with Transport Canada, 1992), 40-41.
- 7 Renamed Air Canada in 1965.
- 8 Garth Stevenson, *The Politics of Canada's Airlines* (University of Toronto Press, 1987), 12.
- 9 Smith *op. cit.*, 66.
- 10 *Lethbridge Herald*, April 8, 1938, 7.
- 11 Allan R. Hunt, "TCA: The Formative Years" *Canadian Aviation Historical Society Journal* (Summer 1980), 54.
- 12 J.A. Wilson, *1948 Development of Aviation in Canada* (Ottawa: Department of Transport 1948), 19.
- 13 *Ibid.*
- 14 *Ibid.*, 20.
- 15 *Ibid.*, 30.
- 16 McGrath *op. cit.*, 138.
- 17 Smith *op. cit.*, 21.
- 18 Wilson *op. cit.* 49.
- 19 *Ibid.*, 20.
- 20 Bruce W. Gowans *Wings Over Lethbridge, 1911-1940*. Occasional Paper No. 13 (Lethbridge: Historical Society of Alberta, 1986) 66; Alex Johnston and Andy den Otter *Lethbridge: A Centennial History* (Lethbridge: The Lethbridge Historical Society, 1991), 139.
- 21 Smith *op. cit.*, 65.
- 22 Wilson *op. cit.*, 20.
- 23 Smith *op. cit.*, 51.
- 24 *Lethbridge Herald* April 3, 1938: 7.
- 25 Trans-Canada Airlines Timetable: April 1, 1938, National Archives of Canada (RG70, Volume 45).
- 26 *Ibid.*: November 1, 1939.
- 27 *Canadian Aviation* 1947 "Salute to the North Star" 20:1 (January 1947), 39-54; K.M. Molson and H.A. Taylor *Canadian Aircraft Since 1909* (London: Putman, 1982).
- 28 *Calgary Herald* May 28-June 16, 1948; McGrath *op. cit.*, 64-65.
- 29 *Ibid.*, 65; Western Air Lines Timetable, May 1 1947, Canada's Aviation Hall of Fame Archives.

Dirty Linen in 1889

Nine hundred miles is a long distance to send linen to be laundered, and perhaps there is no other country on this mundane sphere but this where such a thing is done. It is common here and affords a lucrative business in one of Winnipeg's largest laundries. Linen is sent from Edmonton, Battleford, Prince Albert and other remote parts of the Territories, as well as from places a few hundred miles nearer the city.

"Here are a few bundles of clothes that I received today," remarked a laundryman to a reporter yesterday. "This one is from a prominent Government official at Edmonton, and this one comes from a Mounted Police officer stationed at a post somewhere north of Battleford. That large one there is from a rancher in Alberta, and the others belong to young farmers living in various parts of the North-West.

"Yes, they send all sorts of clothes to be washed, but chiefly shirts, collars, handkerchiefs, etc. We frequently get cricket and lawn tennis suits to be done up also. Out in those far away places persons who are in the least fastidious about their linen cannot get it done up to suit them at home, so they are compelled to send it to Winnipeg to be manipulated professionally and artistically, so to speak.

"In a great many cases, too, they are bachelor farmers or ranchers, and have no facilities for doing their washing at home. Oh, yes, we have a few lady customers in the far West also. We have some linen in hand now that will probably do duty at the ball at Banff this month and also at other vice-regal events."

This is a great country and the people do great things sometimes, but this matter of sending clothes nine hundred miles will strike most mortals as being a queer characteristic of our western pioneers.

————— Lethbridge News, October 16, 1889.