

FOREWORD

Aerial photography has a fascinating history and has had a very important role to play in the development of the medium over the years. In many ways, flight and imaging technologies developed hand in hand. Not very long after taking flight, we found a way to strap a camera to the airplane. Its use as a method or reconnaissance accelerated at the turn of the 20th Century and was particularly prominent during the First World War. Cameras were mounted to balloons and planes in massive surveillance efforts on both sides of the war. As it goes with many other technologies, military applications lead to innovation, and we saw rather large advancements in silver photography around this time.

Aerial photographs, while taken for various other commercial purposes, can bring incredible value for archival research. Thus, my excitement when Donald Waite approached Library and Archives Canada with the idea to donate some of his studio's photographs. Such collections are a real well of information for researchers. The visual information contained in these photographs only becomes more valuable as time goes on and as the places depicted grow and evolve. These are snapshots in time that can prove to be crucial for historical research.

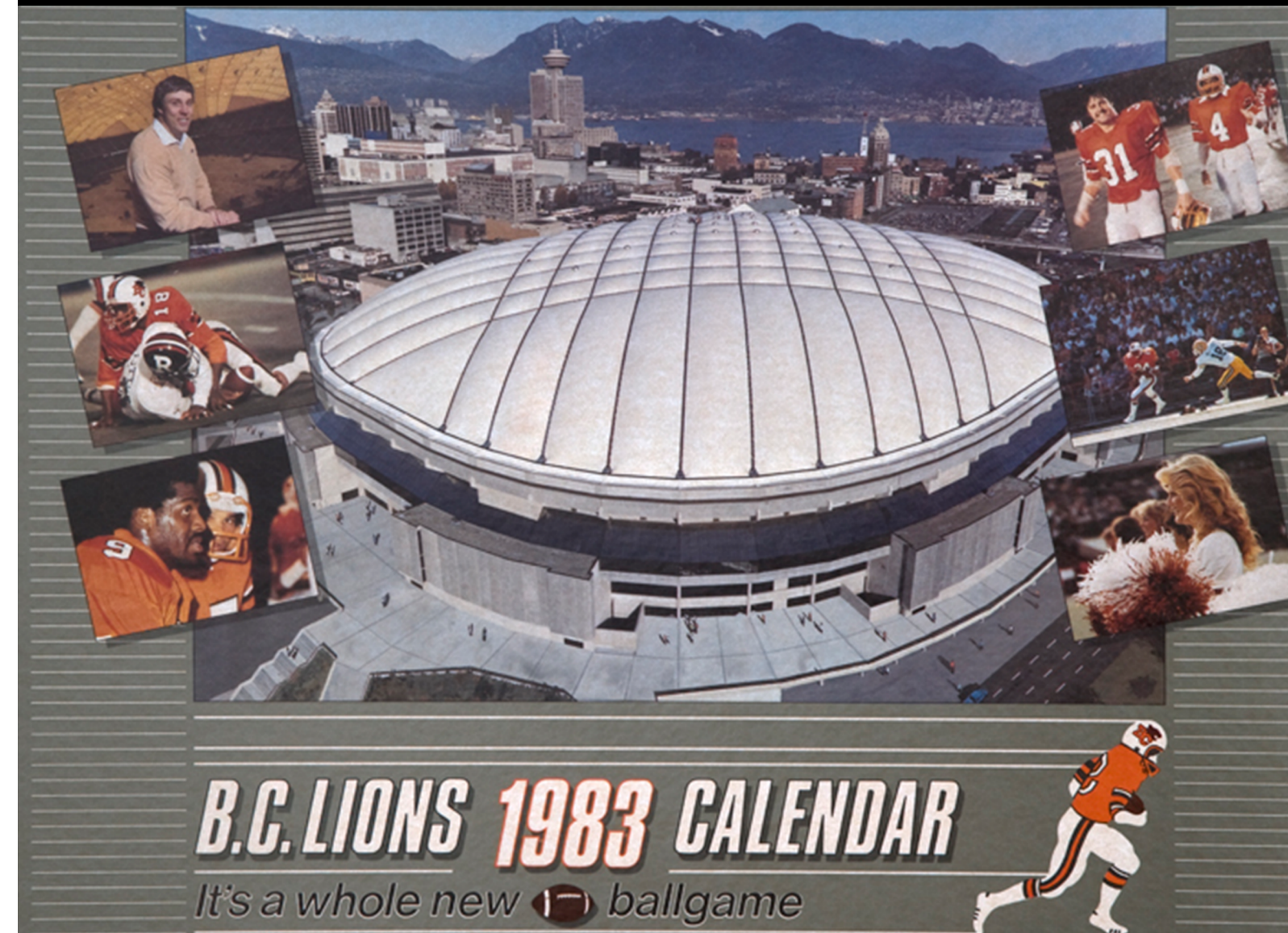
While other Canadian repositories exist for aerial photographs, such as the National Air Photo Library, there is something particular about how Waite's photographs were taken. Most collections hold photographs taken with the lens pointed straight down, creating flat images of the land below. The oblique angle at which Waite's photographs were taken brings a different element to the collection. The photographs are able to provide a high level of detail that will surely be appreciated by researchers for years to come.

With enough oblique air photos, it is now possible to go back in time to perhaps 1960, 1970, 1980, 1990, 2000, 2010 and 2020 years and show areas of some cities evolving from cow pastures to becoming a metropolis.

Donald Waite worked diligently to provide LAC with a selection from his negatives archive depicting various towns and cities across British Columbia and Alberta. He provided us with precise details for each photograph, allowing us to preserve the valuable resource that is this collection into the future.

Samuel Bernier-Cormier,
Photography Archivist,
Library and Archives Canada

THE EVOLUTION OF AIR PHOTOGRAPHY



I take air photographs to feed my body; I take bird photographs to feed my soul."

Donald E. Waite, 1985

FOREWORD

SAMUEL BERNIER-CORMIER

Photography Archivist at Library & Archives Canada

AN EARLY HISTORY OF AIR PHOTOGRAPHY

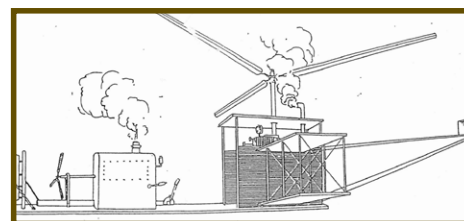


Batut's Air Photo of Labruguière, France

French photographer and balloonist Gaspard-Félix Tournachon took the first air photograph from a tethered hot air balloon over Paris, France, from a height of 1,600 feet in 1858. For some reason, known only to him, he took a complete darkroom in the balloon's basket and processed the film before returning to the ground. Over the next few years, photographic technology continued to advance. In 1860, photographer James Wallace Black, accompanied by his navigator, made eight exposures from a balloon tethered at 1,200 feet above Boston, Massachusetts. Only one image was successful and it's the earliest surviving aerial photograph.

Douglas Archibald, an English meteorologist, was able to capture the first successful air photo using a string of kites in 1882. A few years later, Arthur Batut was able to attach a timer to a camera and set it to trigger the shutter within a few moments of launching to photograph his hometown of Labruguière, France. In 1897, Alfred Nobel, the famed inventor who later established the Nobel Prize, successfully mounted a camera to a rocket. Seven years later, Albert Maul used a rocket to take an aerial picture from 2,600 feet. The camera was then ejected and parachuted to the ground. In 1906, George R. Lawrence used a string of kites to lift a heavy camera 2,000 feet to aerially capture the San Francisco, California, earthquake and raging fires.

Strange but absolutely true, there is a story of Frederick (Lou) Gagnon, a former Canadian Pacific Railway migrant worker and afterwards a trouble-shooter with the Nickle Plate gold mine at Hedley, building a steam-powered flying machine at Rossland, another gold producing town in British Columbia. Built in 1902, his two-engine machine was perhaps the world's first helicopter. Its main feature was an overhead rotor blade powered from a steam turbine. A horizontal push-propeller was geared to a cylinder engine with a pivot vane to act as a rudder. Mr. Gagnon drew from his own intelligence, his experience, and his vision to construct an aircraft thus making him worthy of



British Columbia's Flying Steamshovel, 1902

mention in the history of aviation. His timing of the invention, its overhead rotor design, and use of steam power all deserve respect and recognition. His co-workers, said he "kept his invention secret". According to sworn testimonials, the whole contraption lifted straight up skyward. Apparently the machine was named for its resemblance to a steamshovel and its purpose was to fly gold ore off the top of a mountain. After an aviation misadventure, he went to work at a mens' clothing store in Spokane, Washington, before joining a road show as a vocalist before returning to railroading. All this took place just before the Rosslanders taught a pig how to fly with heavy payloads!

On 23 February 1909, more than 100 people witnessed the first successful powered flight in Canada as the Silver Dart lifted off the ice at Baddock Bay, a small village in northeastern Nova Scotia and flew 800 metres. Piloted by John Alexander Douglas 'Doug' McCurdy (1886-1961) it reached a speed of 65 kilometres per hour before making a smooth landing. Designed and built by Tyne Aerial Experimental Association, founded by Mabel and Alexander Graham Bell, the Silver Dart was the accumulation of a group of aeronautical researchers. Their success heralded the coming of age of aviation in Canada. Bell was credited with patenting the world's first telephone.

In 1909, American inventors and aviation pioneer brothers Orville and Wilbur Wright travelled to Rome, Italy,



The Silver Dart lifting off the ice at Baddock Bay, Nova Scotia.

and flew the first gas powered aeroplane for the purpose of marketing planes to the Italian government for war purposes. His Majesty King Emmanuel III watched a passenger take both still and motion picture footage of the flight.

During the First World War, hot air balloon pilots were accompanied by a photographer to communicate enemy positions to soldiers fighting in the trenches and to take pictures of movements on the battlefield. The pilots steered the balloons minus an engine by relying entirely on wind currents for horizontal movement to maneuver the craft over men fighting in foxholes on the ground. The balloons had to have their sides and bottom reinforced to withstand bullets being fired by the infantrymen. The navigator would write down enemy positions and drop a ribboned rock with notes to his commanders below to give them a one up on the enemy. The photographer would take pictures of the terrain and on being brought back to earth process the film and get prints as quickly as possible to platoon leaders. Although safe from sharpshooters in the trenches, the balloons were sitting ducks and an easy target for pilots in one-seater planes and often a balloon navigator, his photographer, and his mode of transportation went down in flames. Nearing the end of the war, cameras were specifically designed for airborne use, but stability and slow shutter speed continued to be a drawback resulting in fuzzy pictures. By the end of the war, Sherman M. Fairchild developed a camera with the shutter located inside the lens which took pictures at faster shutter speeds. Sometime after the war, Fairchild used a series of overlapping pictures to create an aerial map of Manhattan, New York. Fairchild's camera technology was

the standard for aerial cameras for the next 50 years.

Because balloons were easy to shoot down, some armies resorted to using homing carrier pigeons. German inventor Dr. Julius Neubronner designed a lightweight breast-mounted camera which was harnessed to muscle bound pigeons. The miniature camera was set to snap pics at 30-second intervals along the bird's flight path. The camera weighed almost as much as the pigeon. The bird's flight was a beeline from the sender, over sometimes a square mile or more war zone, and back home. The "bird's eye view" images proved almost entirely useless because the slow and low flying pigeons, laden down with the cumbersome camera, often flew away from any war zone. When they did fly over the trenches, enemy soldiers armed with shotguns were able to blow them out of the sky turning some into pigeon pot pie.



Homing Pigeon and
Miniature Camera

During World War II, overlapping ortho (vertical) aerial photographs of the war front, taken from the belly of a plane was common place and featured in newspapers. By this time, aerial movie footage was

being used in the theatres to spread propaganda.

Some of the most well known aerial reconnaissance efforts using photography occurred during the Cuban Missile Crisis in 1962. President John F. Kennedy asked the air force's top pilot to streak over Cuba with a spy plane to determine if the Soviets were setting up rocket launching pads in Cuba. They were. Kennedy confronted Russian Prime Minister Nikita Khrushchev. The two made a pact to reduce armaments. Simply put, aerial reconnaissance photography possibly prevented a Third World War.

A short time later astronauts began photographing Earth from space and in 1969 Commander Neil Armstrong and Buzz Aldrin landed the lunar module Eagle on the moon. Neil used a Hasselblad camera to take images of Earth, the big blue marble.

It's been my good fortune to have been around when McElhanney Engineering of Vancouver commissioned straight down overlapping photography covering a 40 mile wide by 80 mile long section of British Columbia from the northern mountains to the US/Canada border and from Chilliwack to Vancouver. The black and white negatives, taken with a 5x4 inch camera were stitched together into one humongus digital file. Now, this is where Artificial Intelligence and archival air photographer merge making it possible to use archival air photos to show the transition from farmland to city metropolices with 60 floor and more highrises.

When it comes to aerial photography, the sky's the limit!



A Bird's Eye View

AIR PHOTOGRAPHY IN BRITISH COLUMBIA

BY KENNE STEPHEN ALLEN (1947-2011)

In May, 1919, Stuart Thomson became the first aerial photographer in British Columbia by taking a set of 15 photographs of Vancouver. Captain Ernie Hoy, a World War I flying ace who was pioneering air mail at the same time, was his pilot. Ernie had the distinction of downing nine enemy aircraft and two hot air balloons during the war. Thomson sat in the back seat of an open cockpit two-seater biplane, and twisting backwards, was able to take the images shooting back over his shoulder.

When collecting material for the book 'Vancouver Exposed A History in Photographs', I visited Kenne at his Granville Island condominium and did a taped interview about his father George and their 50 years of dominance of the air photo industry in British Columbia. Kenne's father George joined the Royal Canadian Air Force in Nova Scotia a few days after the declaration of war and after the hostilities the government offered veterans an opportunity to get an education. "Dad decided to get into aerial photography in BC. In the beginning, he used a 4x5 inch Crown Graphic with 16 black and white film packs. Dad bought Western Canada Airways's 8x10 inch collection of 1,900 nitrate negatives taken between 1926 and 1932. I re-bagged and catalogued the nitrate collection so Dad could donate them to British Columbia Provincial Archives. It was a chore since the acetate negatives gave off a gas and the emulsion decomposed making them stick to the envelopes. Some were gooey".

In 1957, George got a two year monthly contract to photograph the construction progress of the Second Narrows Bridge across Burrard Inlet connecting North Vancouver to Vancouver and Burnaby. On June 17th, 1958, a crane stretching from the north side of the new bridge across Burrard Inlet to join the structure on the opposite side collapsed leaving 19 iron workers dead. George flew past the bridge two days before its collapse and snapped two shots. One picture was printed in four foot sections 4x4 feet resulting in a stitched 16x4 foot print for a Royal Commission inquiry. The bridge's collapse was attributed to miscalculations by bridge engineers. George also took monthly photographs of the building of the Deas Island Tunnel passing underneath the Fraser River connecting Richmond to Delta. It was the first concrete immersed tunnel in North America and the second of its kind in the world.

"Dad processed the big film and when I got involved we'd print together in the basement. I was just 10. Dad had an 8x10 enlarger in the basement with no headroom. We cut the bottom off the enlarger and I'd do all the printing sitting on an orange crate a foot off the ground. He print and I'd do the tray work. Dad had his first strokes between 1974 and 1976 so I took over the business and changed its direction into real estate photography. I purchased the very first medium format Pentax 6x7 centimetre camera in all of Canada in the early seventies and that changed the quality of oblique air photography. I bought all the wide and telephoto lenses. I was a one man shop and often worked 16 hours a day. There was no time for a holiday. It was work and sleep. I took the adage from my Father if you wanted something done right to do it yourself."

"The business really took off in the early eighties as there was really no competition until you came along. I got a two year bi-weekly contract to photograph both Canada Place and the Expo 86 site between 1984 to 1986. They needed hundreds of photographs every two weeks for their press releases. One shot was even used as a line drawing on a stamp published looking south with Canada Place and the sails. By this time I was making \$250,000 plus a year. My best year was 1988."

In 1991 Tax Save, a large accounting company in Toronto called Kenne and explained he'd been paying a 13.5 % federal goods and services tax for the previous two years for being a manufacturer. He wasn't because by this time he'd



A May 1919 air photo by Stuart Thomson, facing east down
Georgia Street from Denman Street, Vancouver.



George Allen's photo of Second Narrows Bridge (later Ironworkers' Memorial) over Burrard Inlet, two days before its collapse.
 Photo by George Allen Air Photos Ltd

been sending his film to a color laboratory for processing and printing. Tax Save picked him because he was the sixth highest paid photographer in all of Canada. He got a huge refund. With success the high flyer's drinking became a bit of a problem. It was party time and wife Gael and he were able to take several holidays to destinations like Greece, China and Mexico. They flew to Mexico 6-7 times in 1991. "We even flew to Hawaii for an Easter weekend." It was the calm before the storm.

It wasn't to last and in December, 1992, Kenne got into a serious car accident and landed in the Vancouver General Hospital. He was charged with impaired driving. During surgery, the doctors found inoperable life threatening stomach cancer. He went to a recovery house in Surrey the following March and asked God for help. He had a spiritual or religious awakening. "It felt someone had taken two 45 gallon drums off my shoulders and for four or five minutes had an incredible high potency electric ether thrown at the back of my head and it hit me at the base of my right side and went all through my body down to my toes. I felt an incredible peace and ecstasy and a rapture and a cleansing and all the guilt and all the shame and everything in my life was kindness with an incredible knowledge I never had before with a sense of purpose. Everything radiated in color. It was high contrast and radiating glowing light. I saw the light. I talked with my therapist and she called my experience compassion. It's about asking with complete abandon. There was no sense of weight. There was no sense of mass."

In 2010, Kenne took the Vancouver City Archivist to lunch offering to donate his, 1000,000 negative collection for a tax receipt explaining the University of British Columbia Geography Department was also interested in the collection. In the end Kenne split his collection between the university, the city and the British Columbia Provincial Archives.

Kenne passed away in 2011.