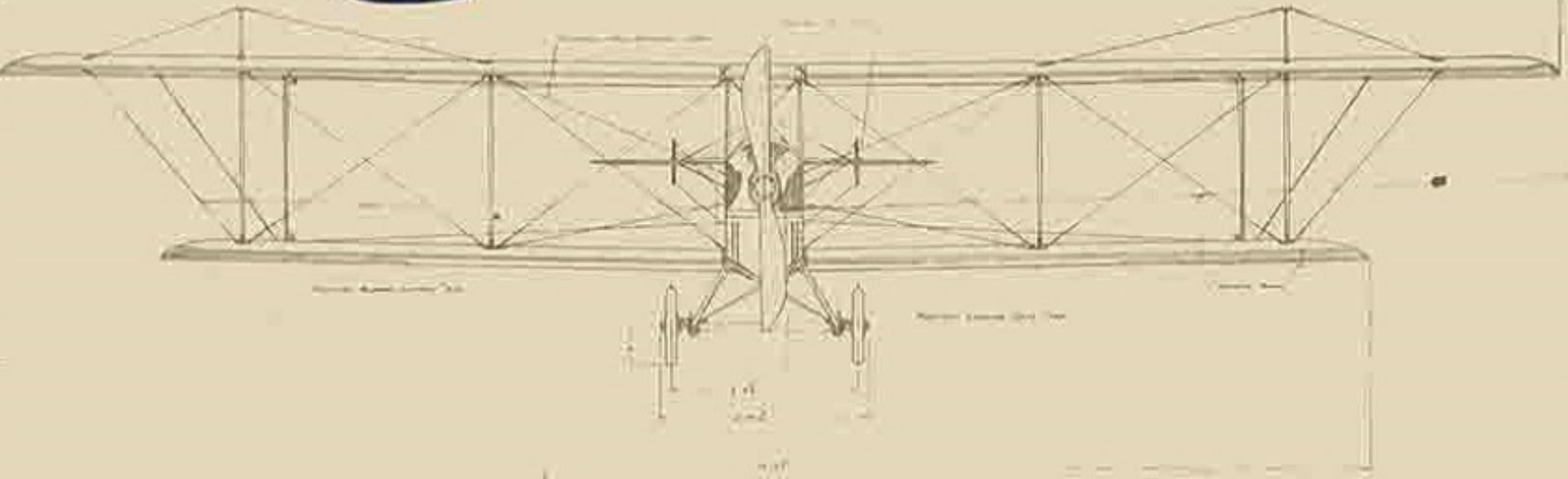


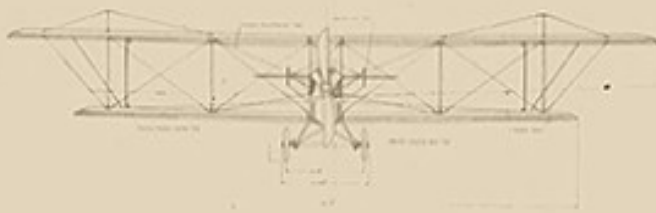
# Wireless Skies

## Ciels sans fils



CURTISS JN-4 CANUCK

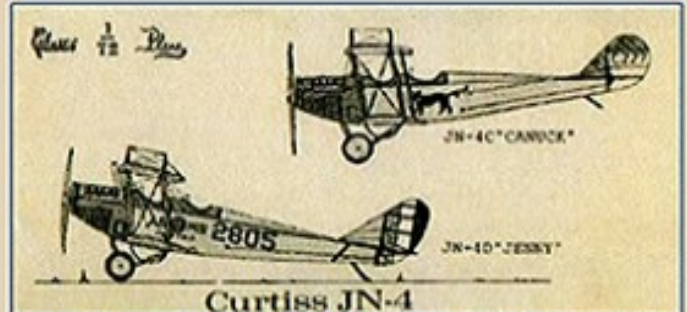
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# CURTISS JN-4 CANUCK

The Curtiss JN-4 Canuck was a World War I era biplane used as the principle training aircraft for the Royal Flying Corps in Canada. It was based on the American made Curtiss JN-4 (Jenny) American trainer and was manufactured by Canadian Aeroplanes Ltd from 1917. In total, about 1,210 of these aircraft were produced in Canada. There were several key differences between the JN-4 American and the JN-4 Canuck. The Canuck had;

- † Lighter airframe
- † Ailerons on both upper and lower wings
- † A bigger more rounded rudder
- † Different shaped wings, stabilizers and elevators
- † Control stick instead of a control wheel
- † Tail units were primarily made of metal, not wood



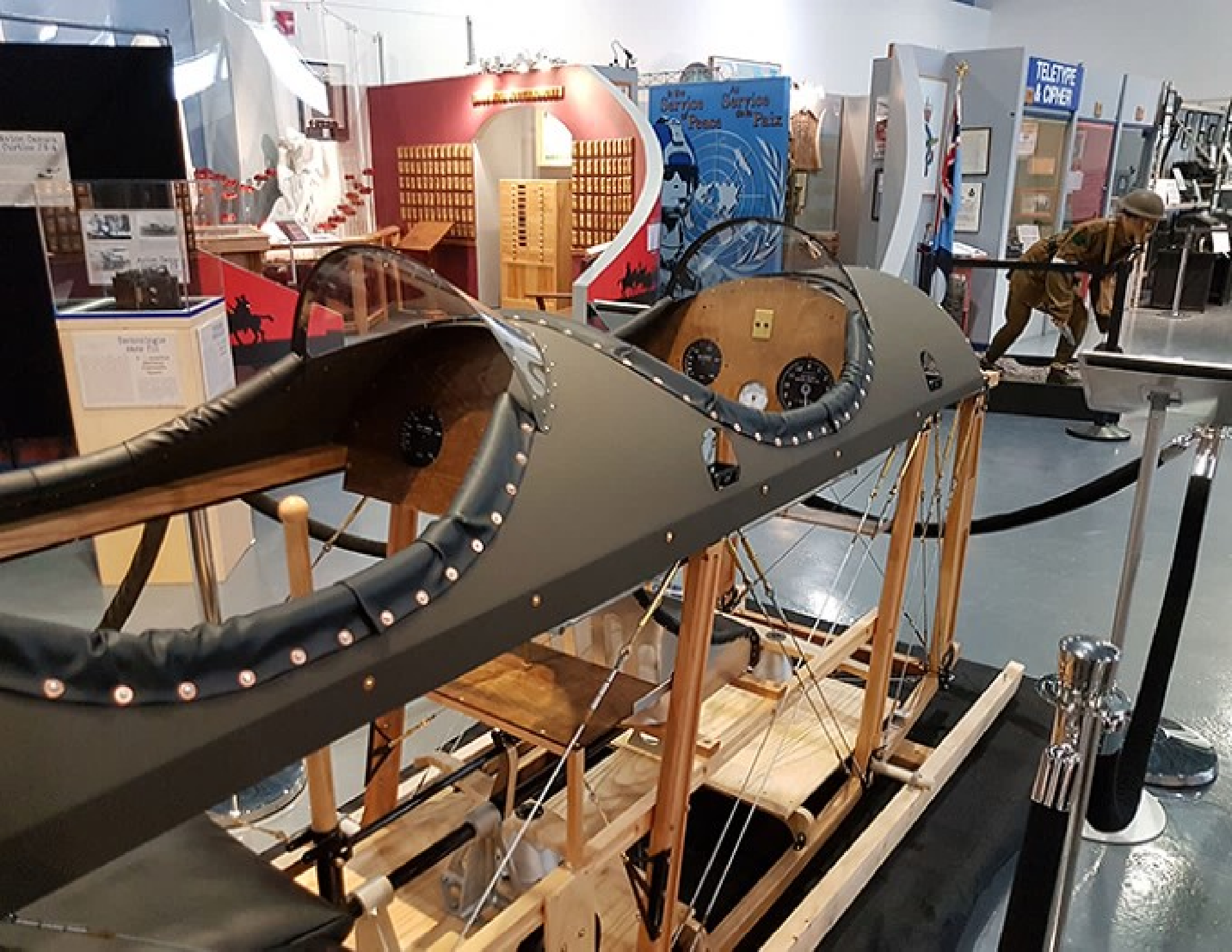
Note the modified rudder, Credit The Alberta Aviation Museum

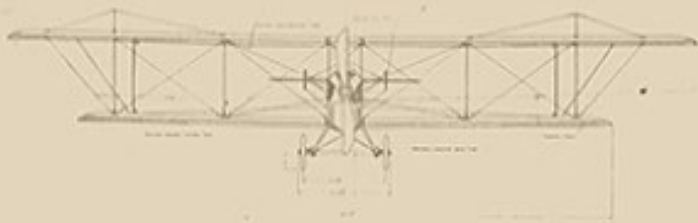
Though they were prolific throughout North America, they were not used in Europe and never saw combat. After the war, many of these aircraft were designated surplus and sold off at prices as low as \$50. They were used for barnstorming, hauling freight, carrying passengers and some were even modified into air ambulances (the first of their kind). The JN-4 Canuck was a dependable, cheap and prolific aircraft that awakened the country to the marvels of flying.

**Ailerons:** a hinged surface in the trailing edge of an airplane wing, used to control lateral balance

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# CURTISS JN-4 CANUCK

## TECHNICAL INFORMATION

13.3m	WING SPAN
8.3m	LENGTH
3m	HEIGHT
630kg	WEIGHT EMPTY
875kg	WEIGHT GROSS
97km/h	CRUISING SPEED
119km/h	MAX SPEED
762m/10 min	RATE OF CLIMB
3,350m	SERVICE CEILING
250km	RANGE
One Curtiss OX-5, 90 hp, V-8 engine	POWER PLANT

## CANADIAN FIRSTS

- † FIRST MASS PRODUCED AIRCRAFT
- † FIRST EXPORTED IN LARGE NUMBERS
- † FIRST USED FOR MILITARY FLYING
- † FIRST USED FOR SKI FLYING
- † FIRST AIRMAIL
- † FIRST AERIAL SURVEY
- † FIRST FLIGHT ACROSS THE ROCKIES
- † FIRST AIR AMBULANCE





Wireless  
Circuits

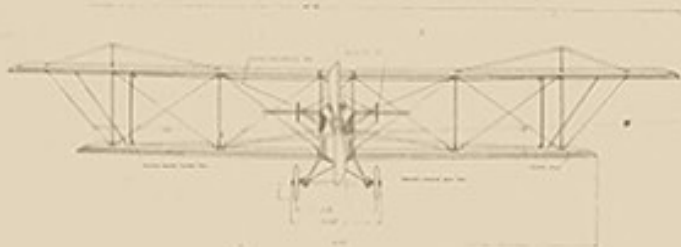
CANTUCK

CURTIS  
JN-4 C









# WIRELESS TECHNOLOGY

A Spark Gap transmitter generated radio waves by means of an electric spark, a dangerous tool to use in a flammable fabric and wood aircraft. The most severe limitation of the spark gap transmitter was that it could only transmit a series of short pulses (in other words, not a continuous wave) and therefore could not carry audio. This method of communication was tricky in a single seater aircraft, as the pilot not only had to tap out the message, but also fly the plane and look out for enemy fire and aircraft. The radio signals produced by spark-gap transmitters were electrically "noisy", meaning they created radio frequency interference. This meant that messages could be garbled, distorted or not go through at all. For aircraft sending these messages, the range and clarity of the wireless signal could be affected by the weather conditions and other wireless transmissions in the area.

## No. 1 Aircraft Transmitter (Spark) Set

Wireless was only used sparingly throughout WWI due to these limitations and over concerns of interception by enemy forces. Nevertheless the benefits of wireless radio were clear; developments in CW (continuous wave) radio during the interwar period made wireless the most important form of aircraft communication during the Second World War.





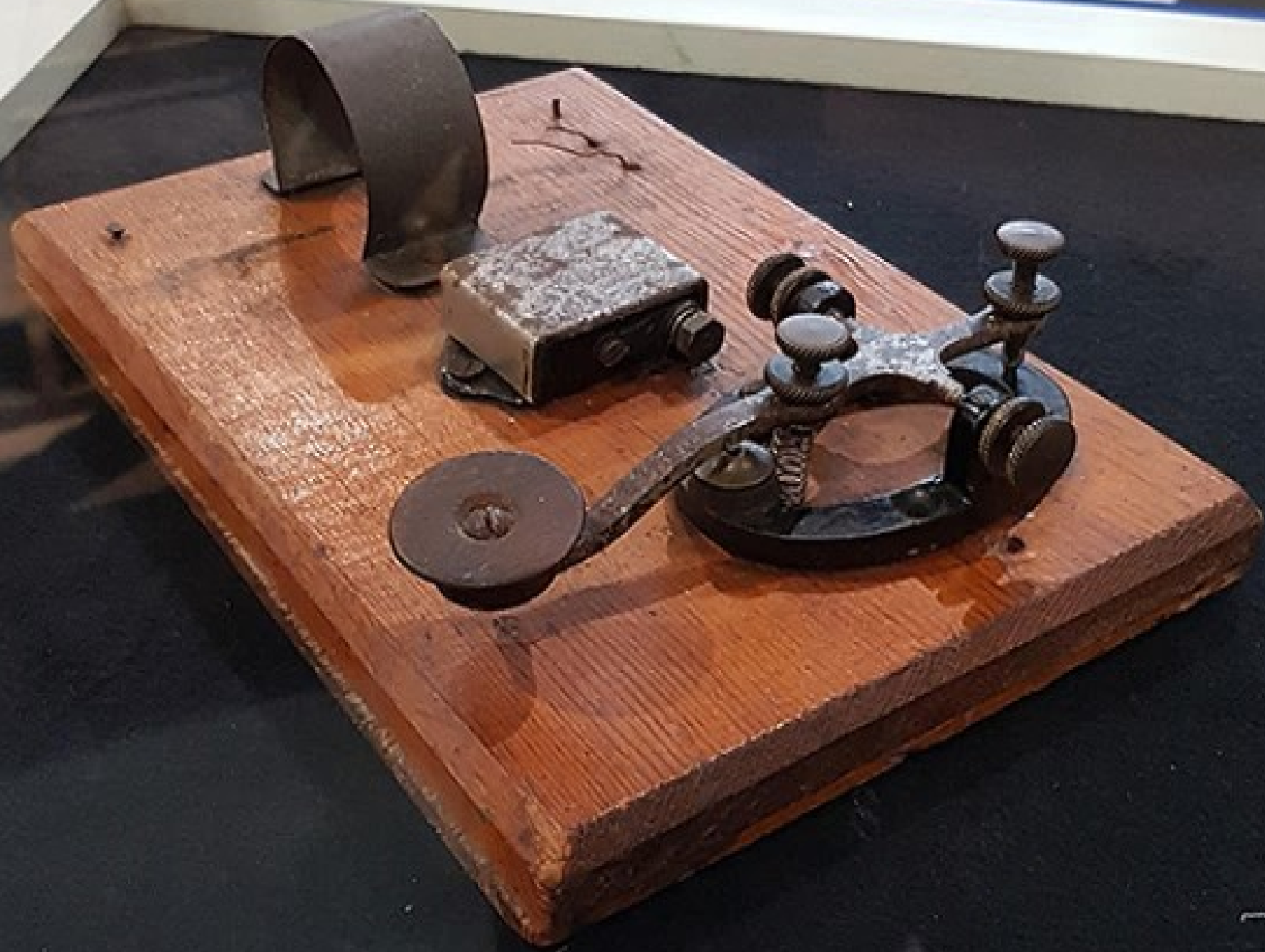


## EMER WILLIAM JOHN BOWES PILOT, WWI

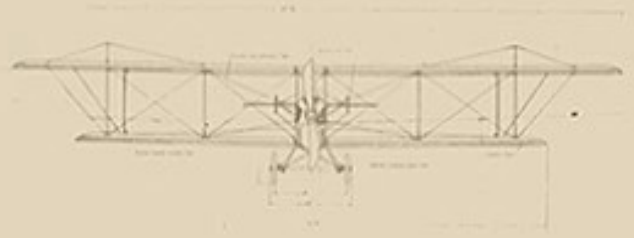
Emer William John Bowes was born on April 7, 1893 in Castlederg, Ontario. He became a school teacher in London, Ontario before the war. In December 1917, Bowes enlisted in the Royal Flying Corps and began his pilot training. He trained at numerous camps and schools across Ontario including Camps Borden and Mohawk. By November 11, 1918, he was still in training and was discharged from the RFC on December 5. In total Bowes flew 13 hours, 40 mins in dual flight, 34 hours, 20 mins in solo flight and completed 96 solo landings. On January 1, 1919, Bowes received his 2nd Lieutenant RAF certificate.

# Morse Code Training

A major part of many pilot's training was the learning of Morse Code for air-to-ground transmissions. Proficiency was measured by an operator's Words Per Minute (WPM) or Characters Per Minute (CPM). Those learning Morse code would have to not only memorize the characters for each letter of the Roman alphabet and punctuation but also the special Prosigns. Prosigns were a form of standardized shorthand and abbreviation for brevity in messaging. The learner would be required to copy what they heard and increase their recognition speed. This could only be achieved through many many hours of listening and practice. They were learning a new language, in dots and dashes (known as 'dits' and 'dahs'). Displayed here, is 2nd Lieutenant Bowes' original practice Morse key.







# FLYING CAMPS RATHBUN and MOHAWK

During the early years of World War I, Britain was slower than its French allies at adopting aerial technology for use in the war. By 1916, more pilots were being killed than could be replaced through training in Britain. The Royal Flying Corps set up a number of training camps in Canada, two of which were located near the town of Deseronto, Ontario. These camps were Camp Rathbun, north of the town and Camp Mohawk, located on the Tyendinaga Mohawk Territory, west of the town. They were constructed in April of 1917 and came into operation that summer.



2012.10(12)  
"View of Ontario 2000ft" Aerial photograph showing two Curtiss JN-4 aircraft (C131 and C126) flying over open farmland, probably near Camp Mohawk, one of the World War I Royal Flying Corps pilot training camps near Deseronto, Ontario. Part of an album of Royal Flying Corps photographs which belonged to the Hobbs family. [Oshawa Community Museum & Archives reference: A001.6.12].  
Credit: The Deseronto Archives

These camps provided a boon to the economy of the local area, including jobs to over 200 women as mechanics and medical staff. Families also used the airfields as a source of entertainment, watching the men train.

This training was hazardous, with around 40 men losing their lives in training accidents throughout the war.

In the spring, training resumed at Camp Rathbun and Camp Mohawk until the Armistice was declared, after which they were immediately closed. While Camp Mohawk continues to house an aviation school, there is little remaining of Camp Rathbun. Over the course of the war, 1300 pilots were trained at Camp Rathbun and 2000 at Camp Mohawk.





2016.01 (15)

Curtiss JN-4 aircraft C-636 after a crash. The plane is upside down and there is a man standing on the upper wing. Credit: The Deseronto Archives



2013.06(23)

Group of airmen in and around a Curtiss JN-4 training aircraft, probably at Camp Rathbun, one of the Royal Flying Corps' training camps near Deseronto. One of a set of photographs taken in Deseronto, Ontario, during the First World War which came into the possession of the Stapley family and which were donated to Deseronto Archives in February 2013. Credit: The Deseronto Archives



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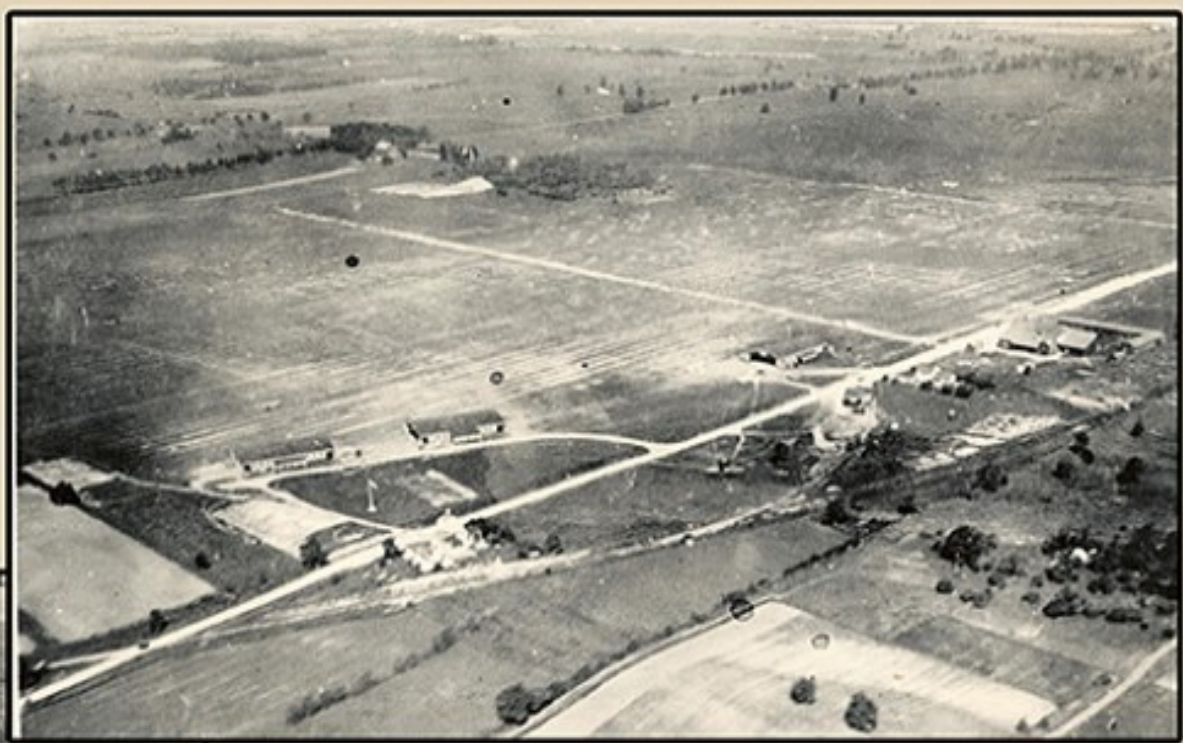
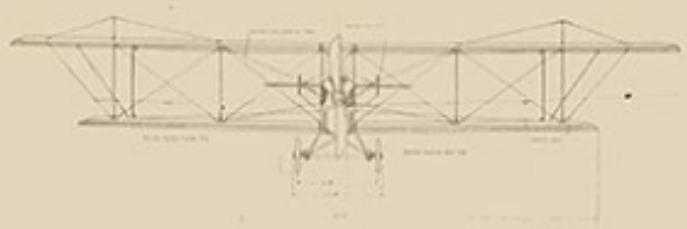
Photo postcard of two Curtiss JN-4 aircraft. The one in the foreground has roundel insignia and number C 696. On the tail is a castle symbol, indicating that this was the training aircraft used by Vernon Castle at Camp Mohawk, one of the Royal Flying Corps' pilot training camps near Deseronto, Ontario. Another aircraft can be seen in the background - it has a roundel and the number begins C 45. Credit: The Deseronto Archives

# CURTISS JN-4 CANUCK

Photos from The Deseronto Archives  
World War One, Royal Flying Corps training  
camps near Deseronto, Ontario, 1917-1918

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**Allan Smith 1**  
 "90 CTS Hangars Camp Rathbun". Aerial photograph of Camp Rathbun, one of the Royal Flying Corps' pilot training camps near Deseronto, Ontario. The photograph was taken from the East side of Boundary Road, looking towards the northwest. Part of the J. Allan Smith collection. Credit: The Deseronto Archives

# FLYING CAMPS

## RATHBUN and MOHAWK

**Allan Smith 4**  
 Aerial photograph of Camp Mohawk, one of the Royal Flying Corps' pilot training camps near Deseronto, Ontario. Part of the J. Allan Smith collection, Credit: The Deseronto Archives





# CAPT. VERNON CASTLE

Vernon Castle was born Vernon W. Blythe in 1887 in Norwich, England to a theatrical family. He was involved in the theatre from a young age and in 1906 moved to New York to work in Vaudeville, where he changed his name to Castle. He met his future wife and dance partner, Irene Foote in 1910 and the pair became incredibly popular due to their modern dance style.

Castle took flying lessons in 1915 and enlisted in the British military in 1916 where he was commissioned as an officer on March 4th. Much of his service was on photographic, bombing, or gun-spotting missions. In all, Castle logged over 300 hours in combat in over 150 sorties, was credited with two German planes downed and was shot down twice by enemy fire. He was injured twice and received a Croix de Guerre.

After his second injury he was assigned to become an instructor during which time he was involved in two fatal crashes. The first crash was at Camp Mohawk on May 30th, 1917. The young cadet he was training was killed when he lost control and crashed into a hanger. Capt Castle escaped with burns to his face. When the training camps moved to Texas for over winter training, Capt. Castle was involved in another crash, during which he was crushed. He was 30 years old.



Capt. Vernon Castle, with his pet monkey Jeffrey, in front of a JN-4 at Fort Worth, Texas in 1918. Credit: The Deseronto Archives

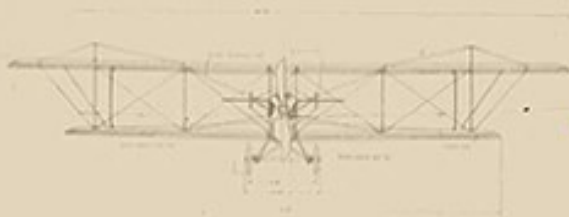
His wife Irene posed for the life-sized bronze sculpture that sits over his tomb (pictured below). It was a representation of her grief.



Photo credit: Anthony22 at English Wikipedia



# ACKNOWLEDGMENTS



The Military Communications and Electronics Museum would like to pay special thanks to the following people and organizations for their support in the development of this exhibition;

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**association des musées musées des beaux-arts + lieux historiques de kingston**



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& ELECTRONICS MUSEUM



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