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ROBIN GOCH

The first aeroplane built in Wales



ABOUT THIS RESOURCE

This resource can be read individually or as a class and is aimed at Progression Step 3 (8-11) pupils.

In this resource you will...

- Learn about the history of flight and the people who invented aircraft.
- Discover the stories of Welsh inventors.
- Explore the Amgueddfa Cymru's collection of images and objects relating to flight.
- Be introduced to the science of flight.

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*Mae'r adnodd hwn ar
gael yn Gymraeg.
This resource is
available in Welsh.*

ABOUT THIS RESOURCE

In this resource you will see some pages that have questions or activities. On your own or as a class read these pages, complete the activities and think about or discuss answers to the questions. There are no right or wrong answers.

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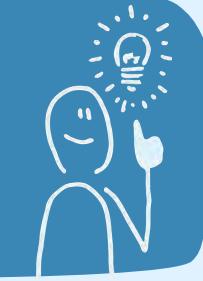
*Mae'r adnodd hwn ar
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AND ITS
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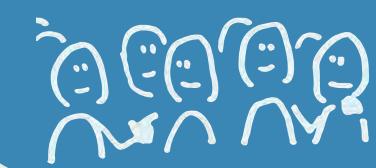
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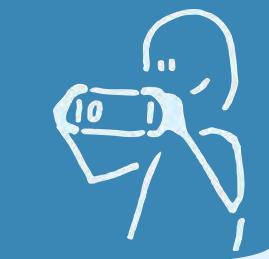
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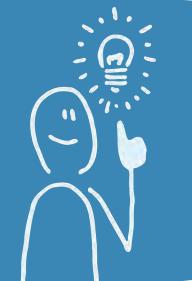
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**360°
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**MAKE A
PLANE!**



Select the section you want to explore

Charles Horace Watkins, 1960s

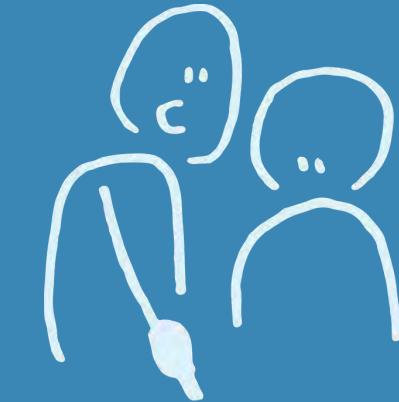
ACTIVITY



Set a 1-minute timer. Use that time to write down what you think an inventor is.

See how your answer compares to ours on the next page.

ROBIN GOCH AND ITS INVENTOR



An inventor is someone who uses their imagination and skill to create new ways of doing something or new types of machines. Charles Horace Watkins was an inventor and with all the objects you can see here, some imagination and a lot of skill he was able to create...



Kitchen chair



Light switch



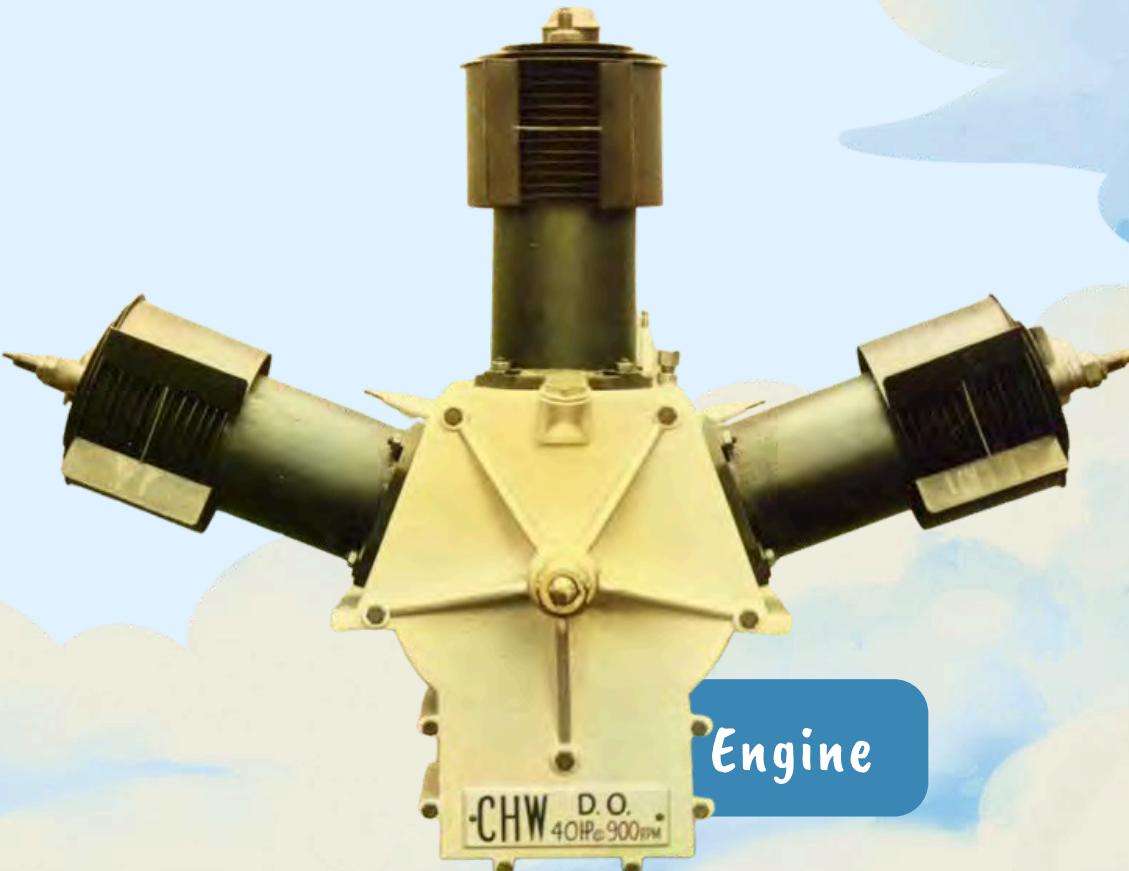
Steel wire



Wood



Belt



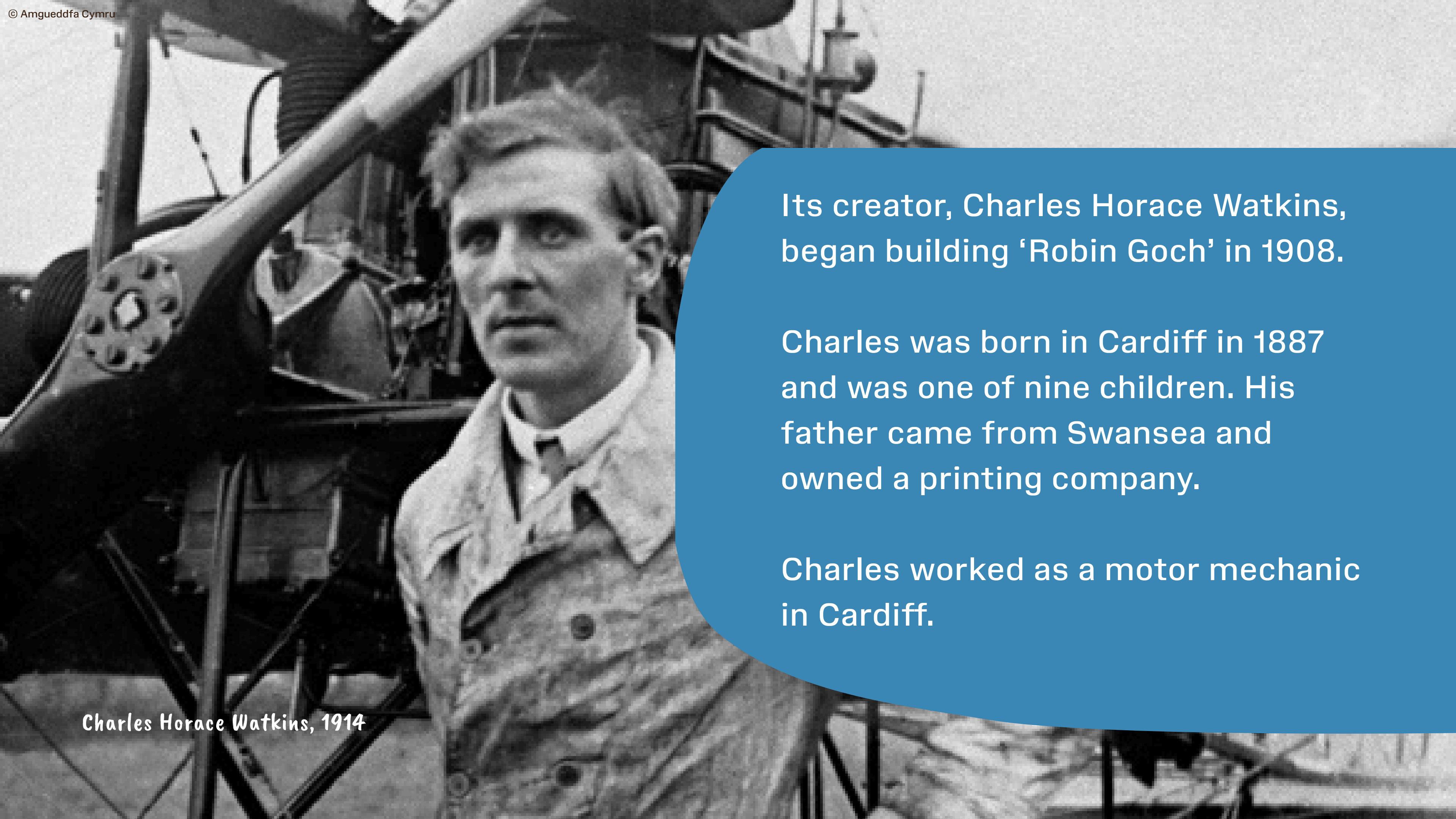
Engine

...the 'Robin Goch'.
This is believed to be
the first aeroplane
designed and built in
Wales.

© Amgueddfa Cymru



'Robin Goch', 1975



Its creator, Charles Horace Watkins, began building 'Robin Goch' in 1908.

Charles was born in Cardiff in 1887 and was one of nine children. His father came from Swansea and owned a printing company.

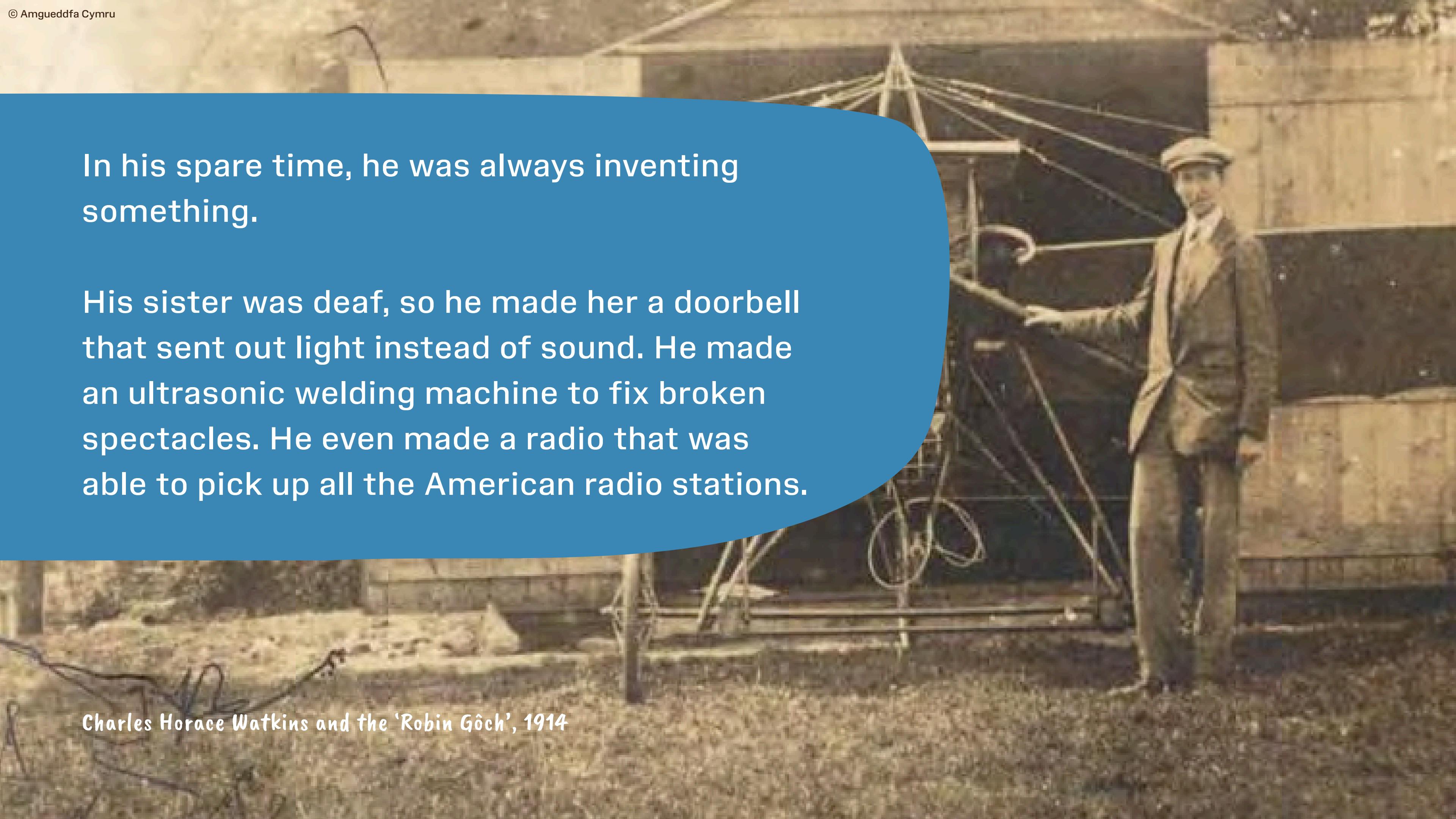
Charles worked as a motor mechanic in Cardiff.

Charles Horace Watkins, 1914

In his spare time, he was always inventing something.

His sister was deaf, so he made her a doorbell that sent out light instead of sound. He made an ultrasonic welding machine to fix broken spectacles. He even made a radio that was able to pick up all the American radio stations.

Charles Horace Watkins and the 'Robin Goch', 1914





“In those days I was doing something which everyone regarded as a bit cranky.

Charles Horace Watkins, 1960

FLYING FIRSTS



Wright Brothers flight, 1903

The first ever recorded flight was by the Wright Brothers in the USA in 1903.

First plane at Glynneath, 1925

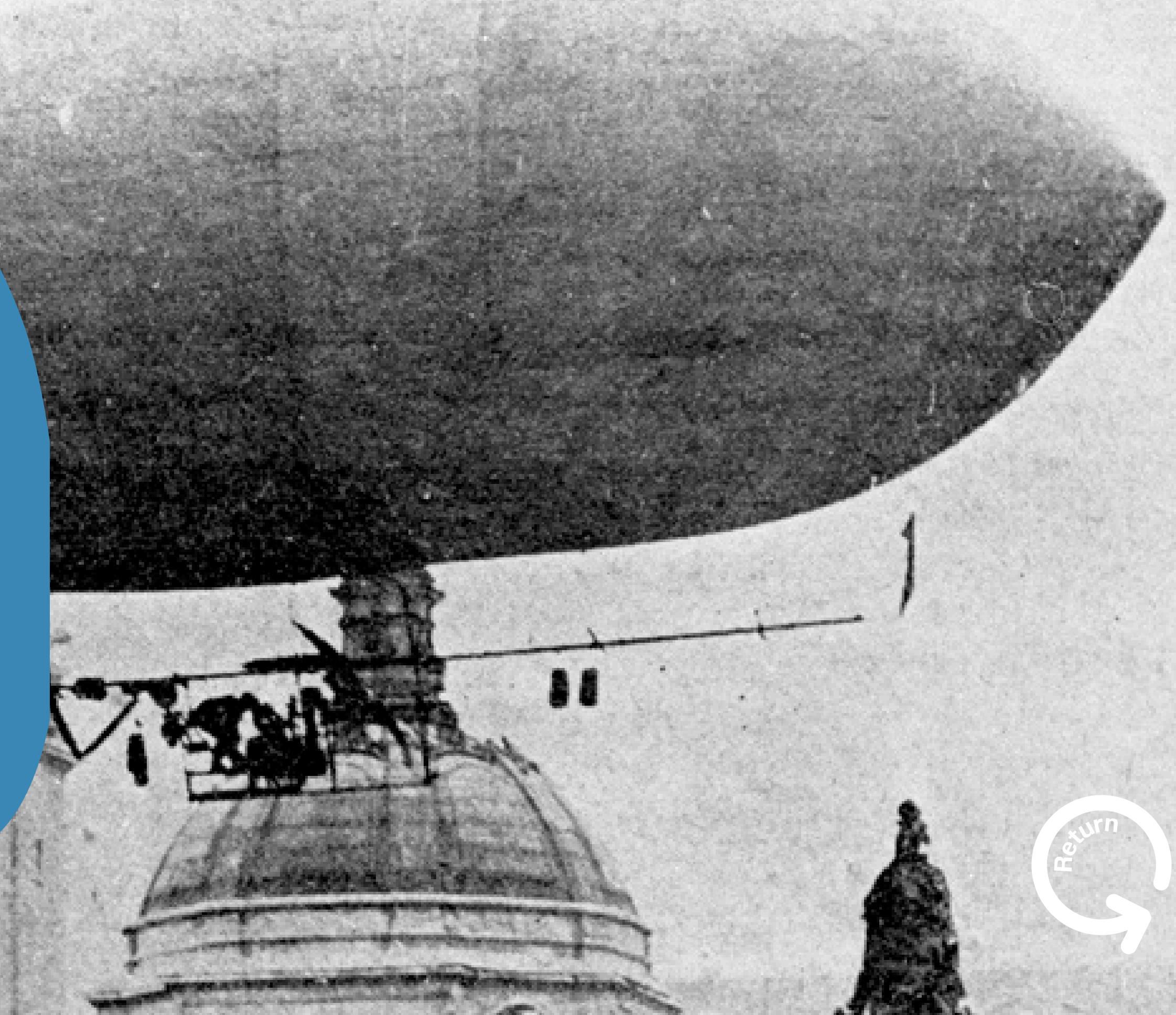


It was a time when inventors around the world were using technology to travel though the skies. There were no large airports carrying people, just lots of passionate people all experimenting, building small aeroplanes and hoping theirs would be the best.

Willows airship arriving over the Cardiff City Hall, 1912

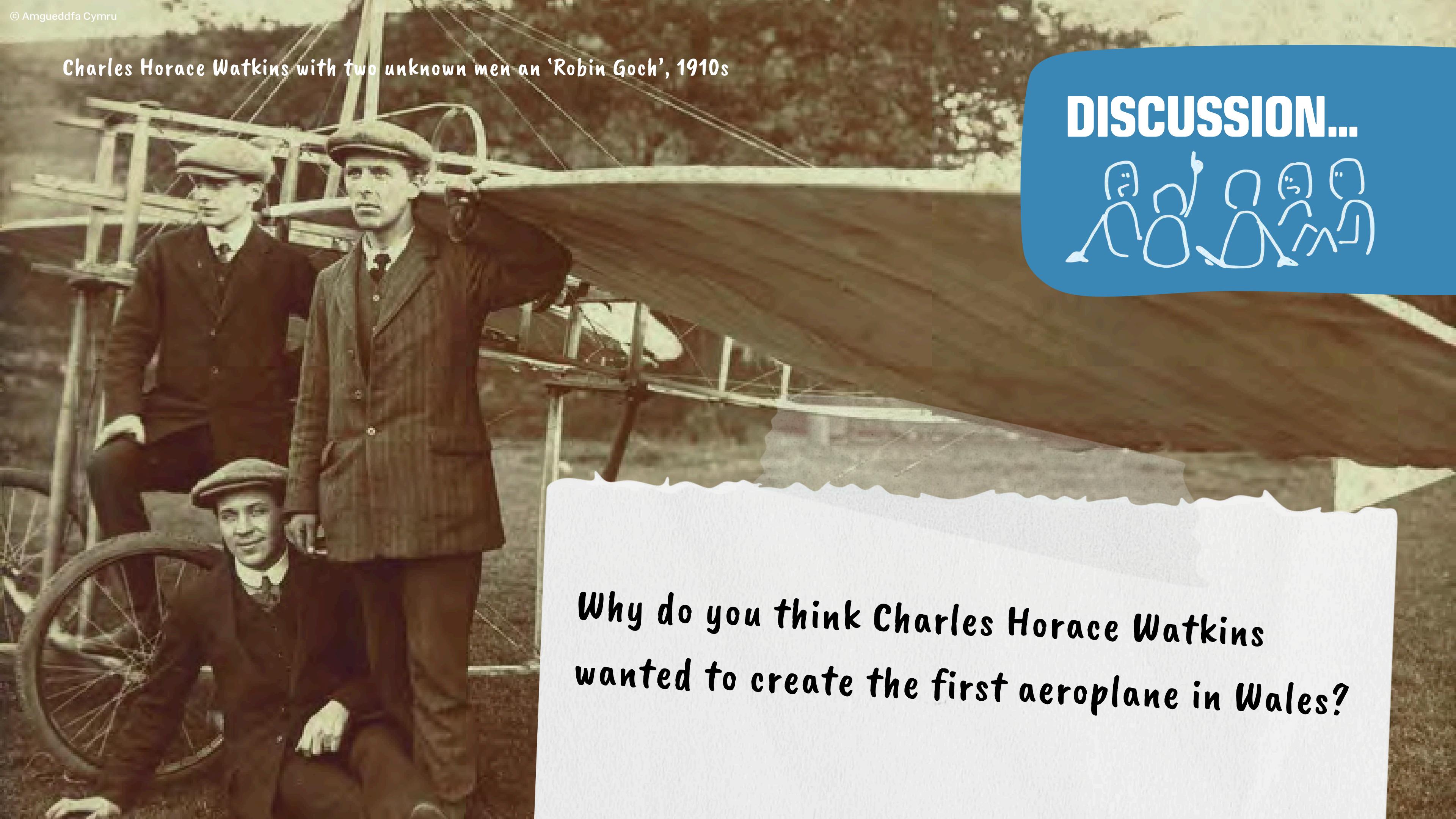
It wasn't just aeroplanes either! Air ships were being built and tested.

This photo shows Ernest Willows flying an airship he designed over Cardiff City Hall. Ernest, who was born in Cardiff, was the first airship pilot in Britain.

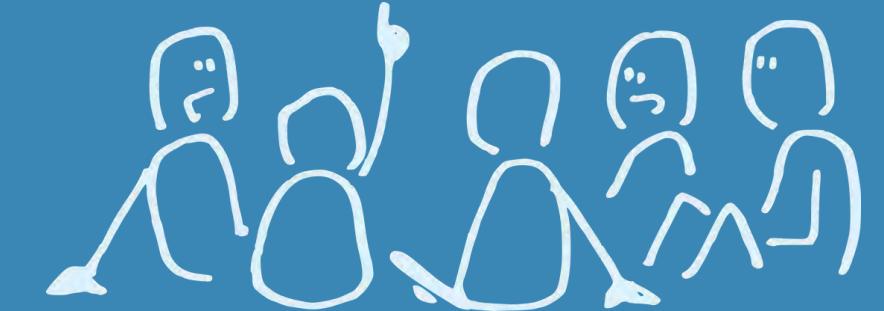


Return

Charles Horace Watkins with two unknown men at 'Robin Goch', 1910s

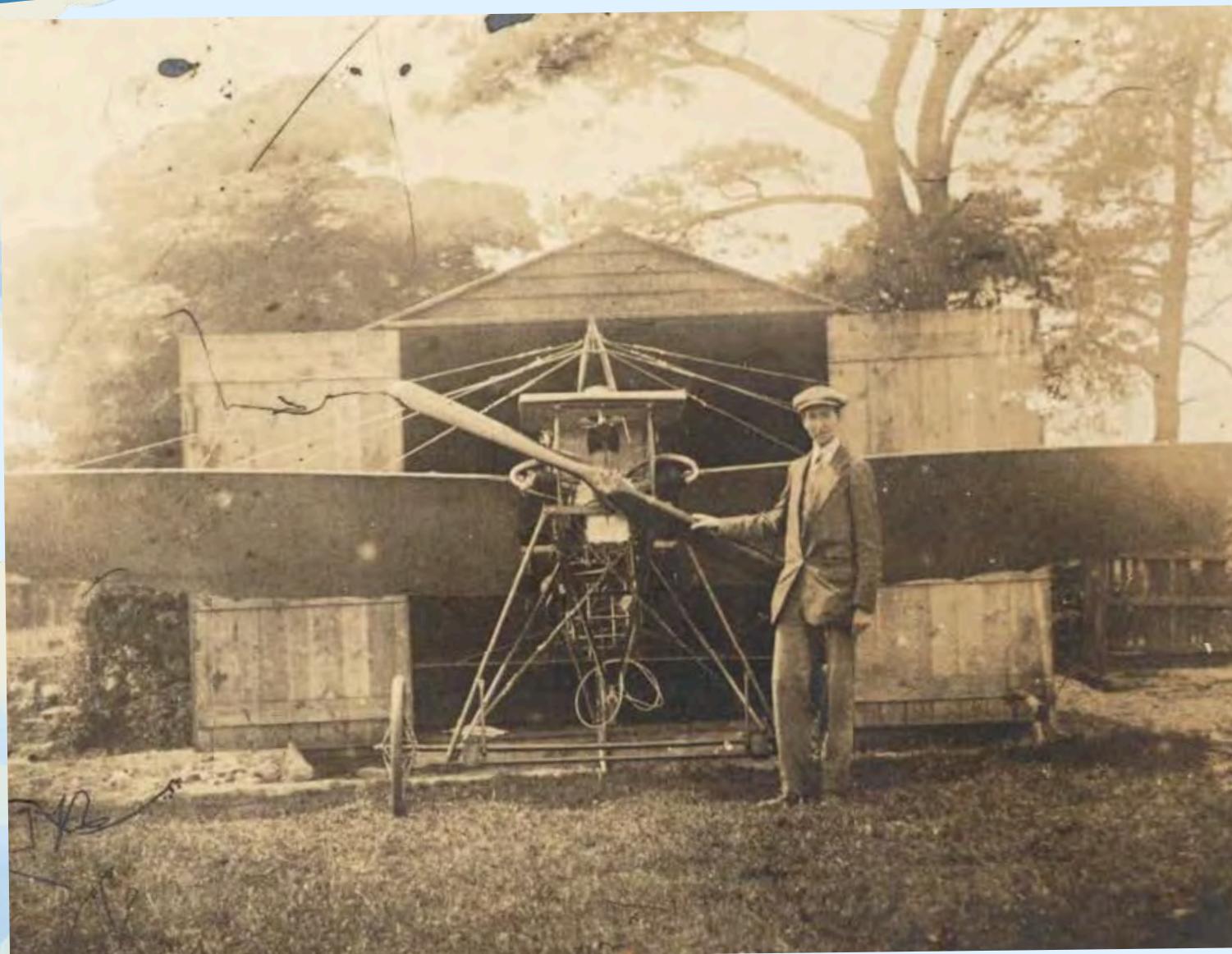


DISCUSSION...



Why do you think Charles Horace Watkins wanted to create the first aeroplane in Wales?

BUILDING ROBIN GOCH



Charles Horace Watkins and the 'Robin Goch', 1914

Charles worked alongside a man named Bentfield Hucks, who invented many aeroplanes and became the first Briton to perform a loop in an aeroplane.

Charles may have been inspired by all the news about aeroplanes or Bentfield. Whatever inspired Charles he decided in 1908 to build an aeroplane. He was just 21 years old when he started the 'Robin Goch'.

© Amgueddfa Cymru



Charles Horace Watkins, 1910s

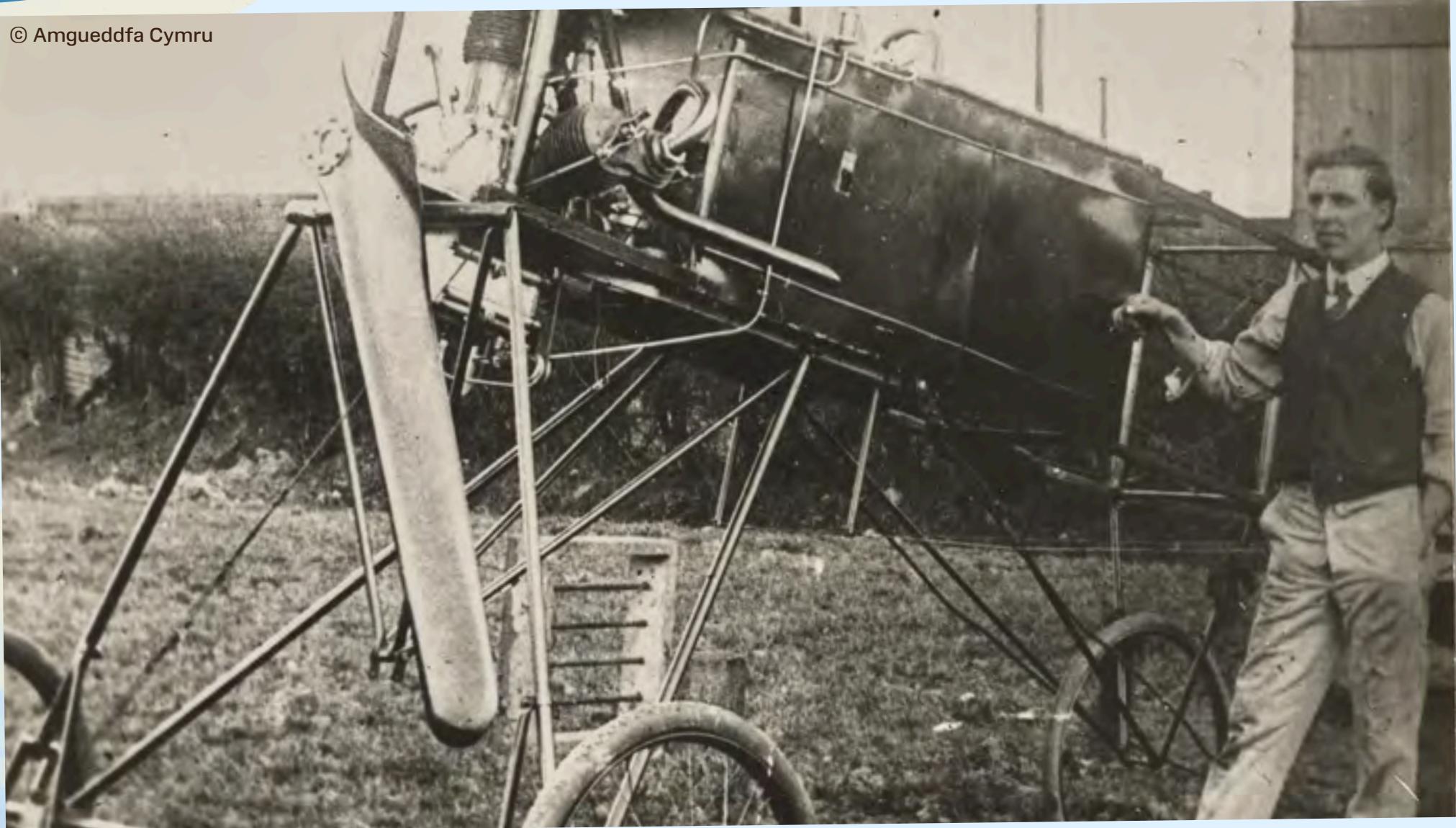
Charles worked in the day and spent every night and every Sunday for three years building 'Robin Goch'.

© Amgueddfa Cymru



Charles Horace Watkins in 'Robin Goch', 1910s

© Amgueddfa Cymru



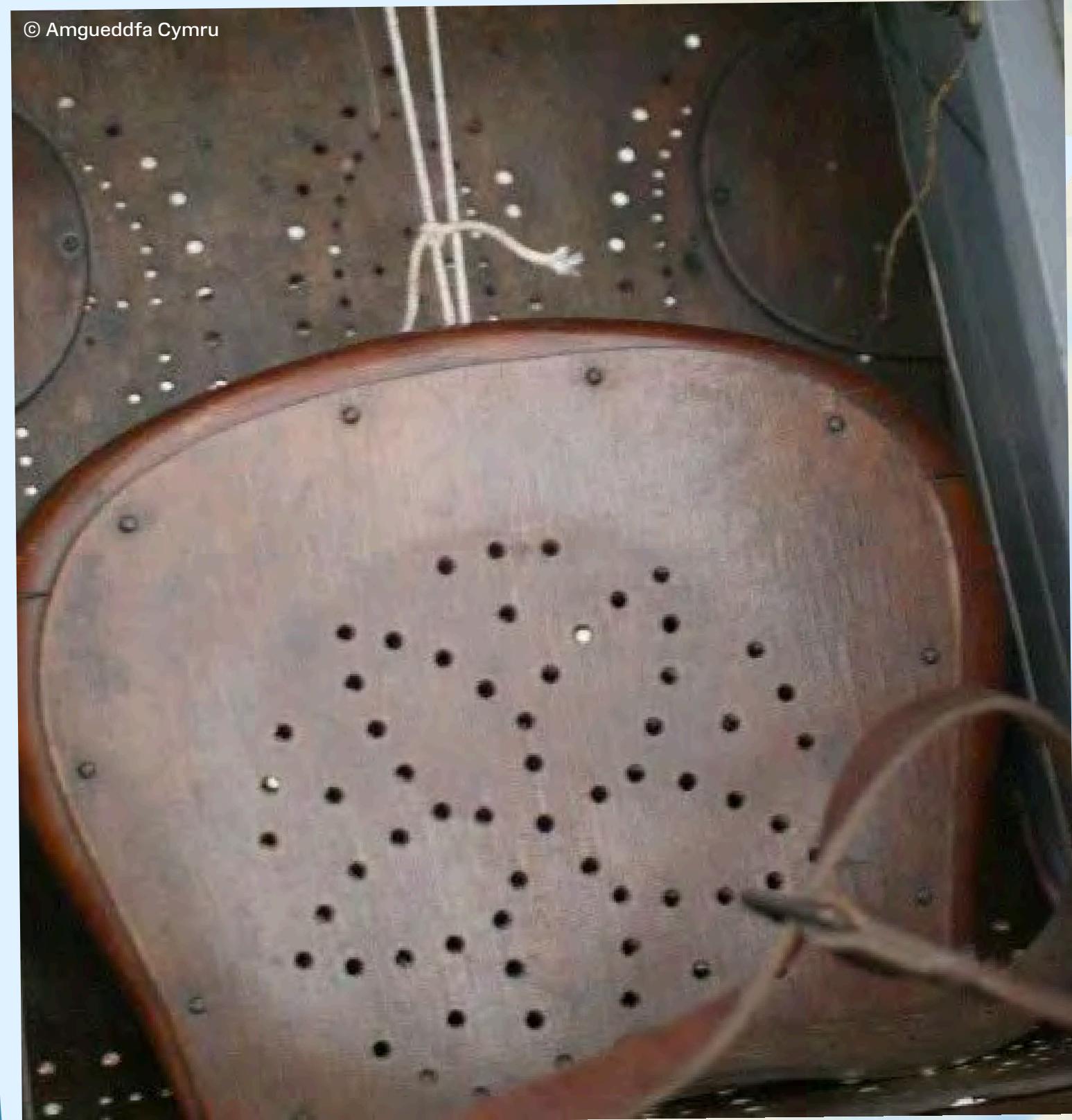
Charles Horace Watkins, 1910s

Some say he spent over £300 on building the plane, which is £31,000 in today's money.

As it was all his own money he was spending, he made sure to use things that he had around his home to keep costs down. A kitchen chair became the pilot's seat and a normal trouser belt was the seatbelt!



© Amgueddfa Cymru

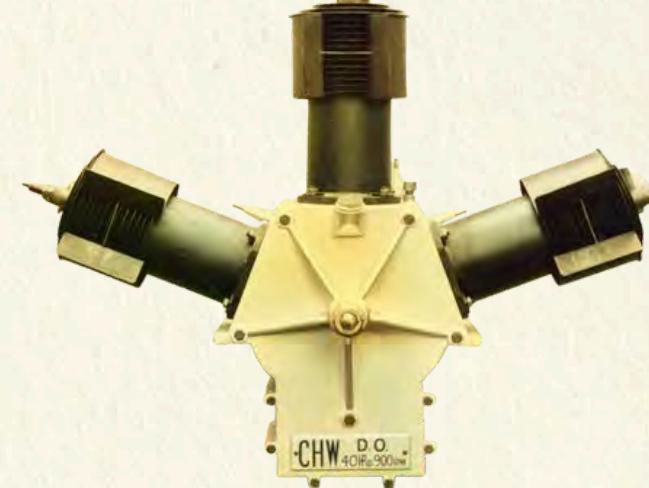


Kitchen chair and belt inside the 'Robin Goch', 2010s

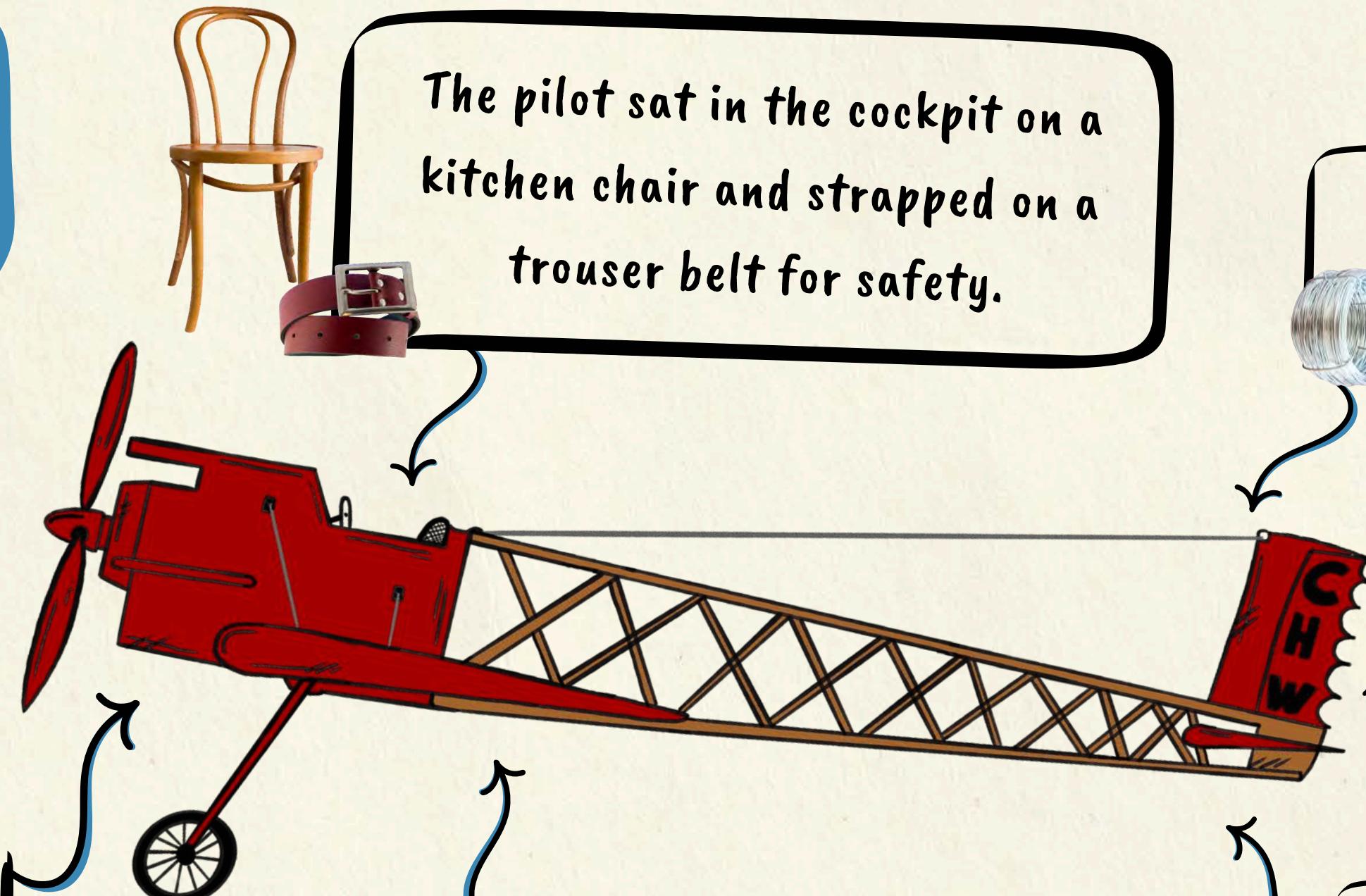
WHAT DID IT LOOK LIKE?



The pilot sat in the cockpit on a kitchen chair and strapped on a trouser belt for safety.



An engine built by Charles powered a propellor.



'Robin Goch' is a monoplane as it only has one set of wings.

*Some aeroplanes have two and we call them biplanes.

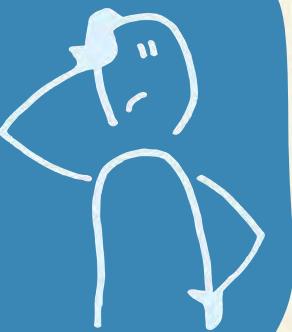
Steel wire or piano wire.

Initials on the tail.

Wood was used as it was light.



WHAT DID IT LOOK LIKE?



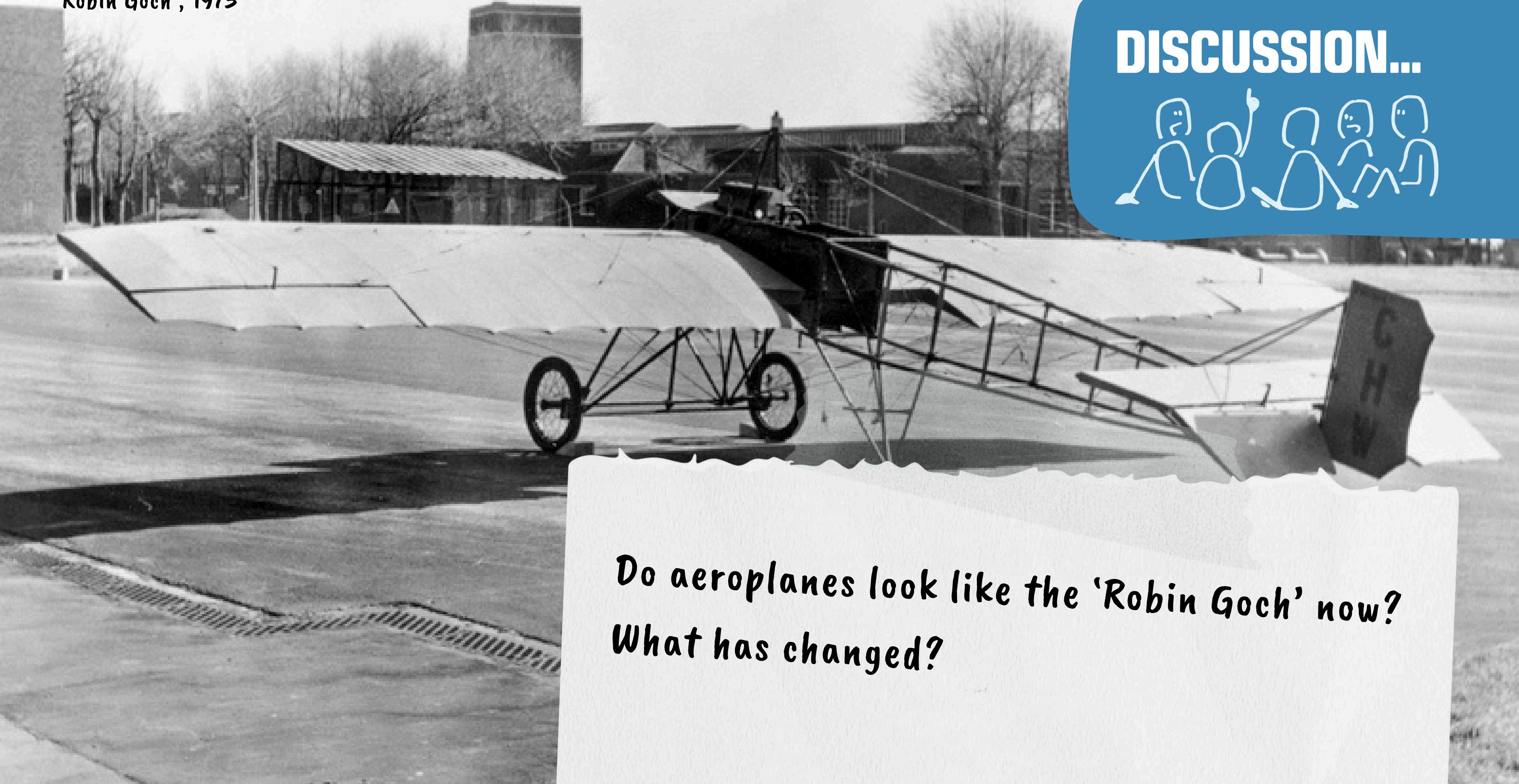
A ball bearing in a cradle was used to tell if the plane was flying level.



A light switch turned on equipment.

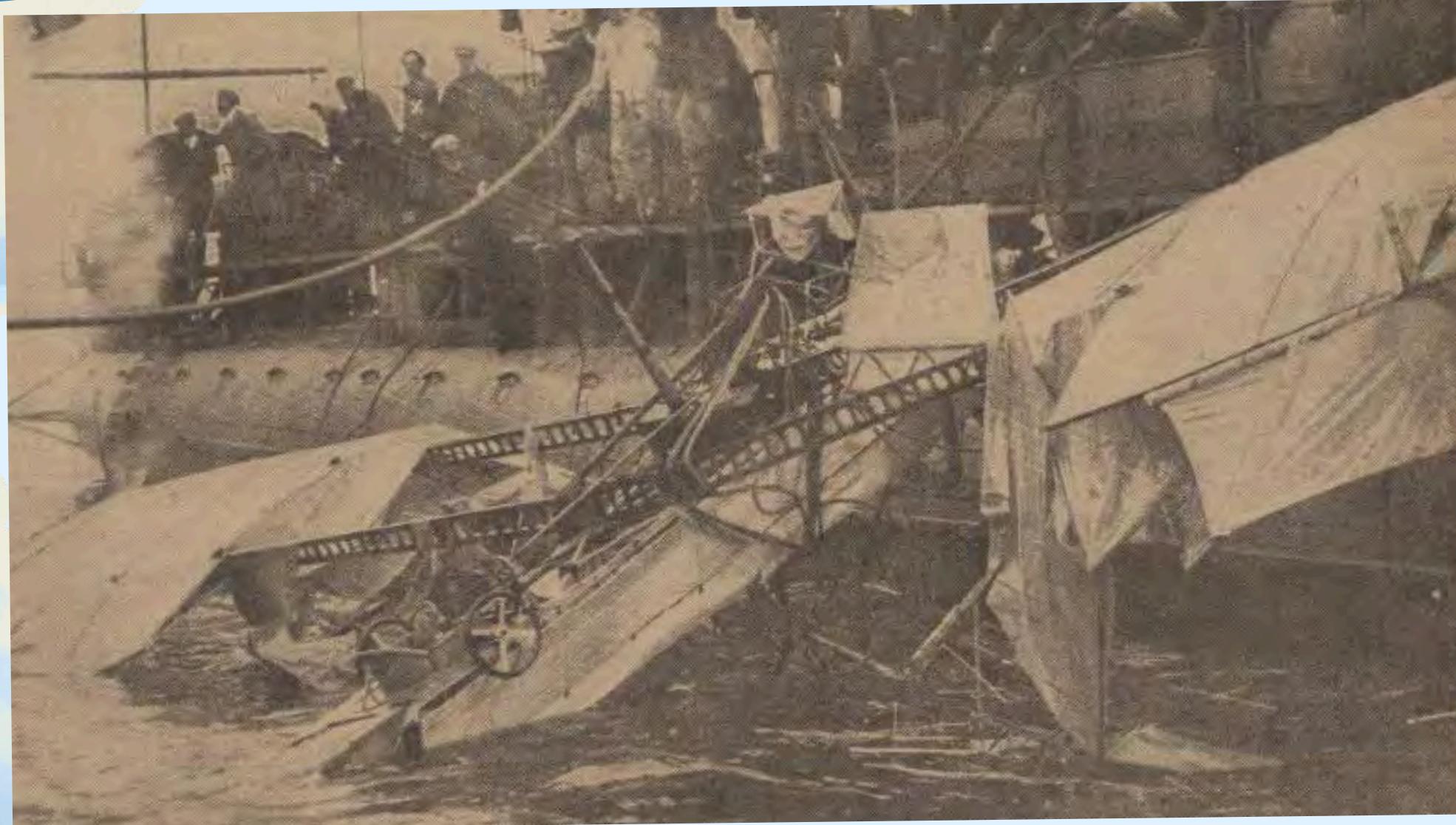
Return

'Robin Goch', 1975



Do aeroplanes look like the 'Robin Goch' now?
What has changed?

WAS FLYING DANGEROUS?

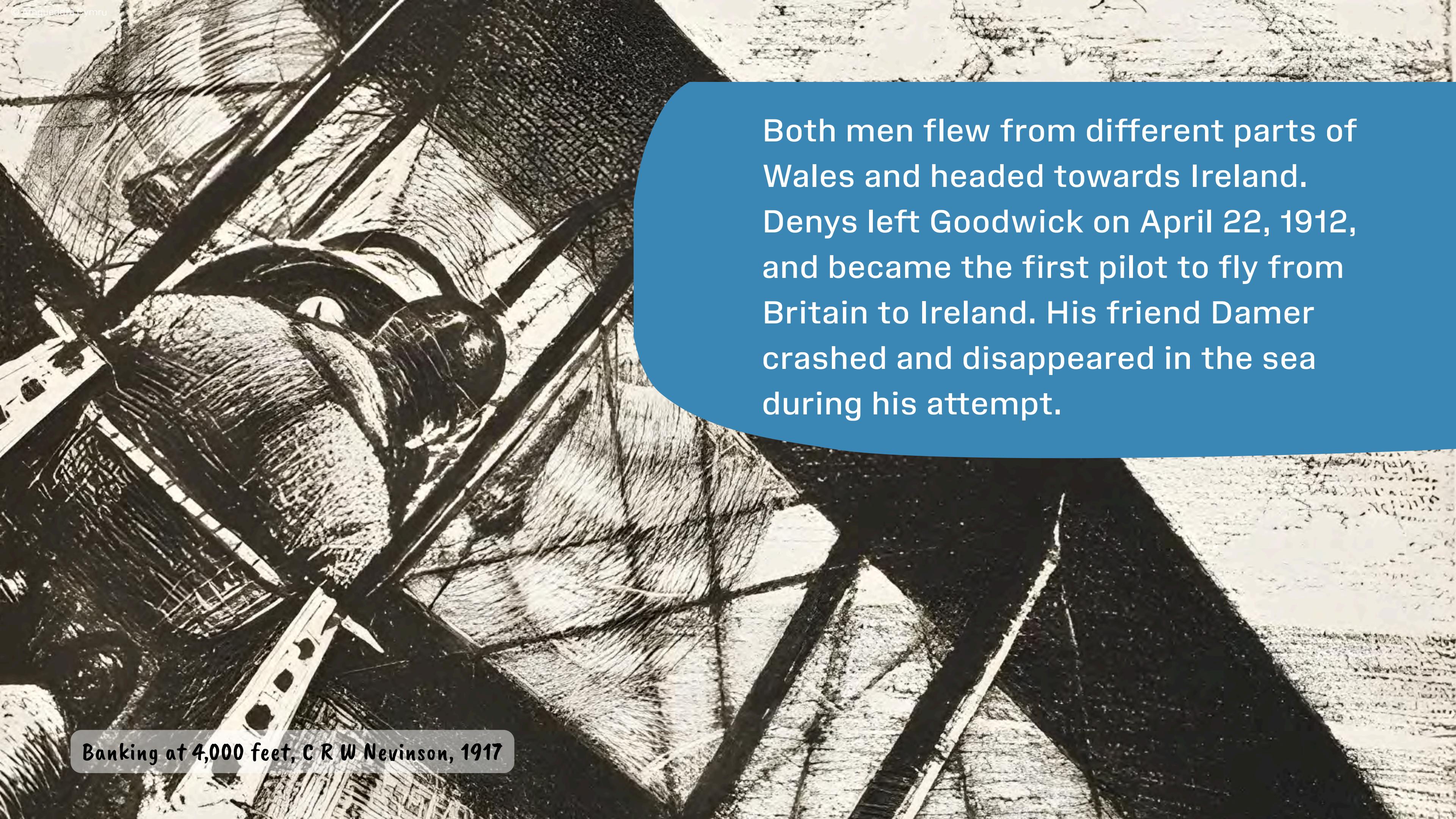


Charles was excited about creating an aeroplane but creating one was far less dangerous than flying one.



In 1912, two Irish pilots, Denys Corbett Wilson and Damer Leslie Allen, raced in their aeroplanes across the Irish sea, in the hope of being the first to fly from Britain to Ireland.

Banking at 4,000 feet, C R W Nevinson, 1917



Banking at 4,000 feet, C R W Nevinson, 1917

Both men flew from different parts of Wales and headed towards Ireland. Denys left Goodwick on April 22, 1912, and became the first pilot to fly from Britain to Ireland. His friend Damer crashed and disappeared in the sea during his attempt.

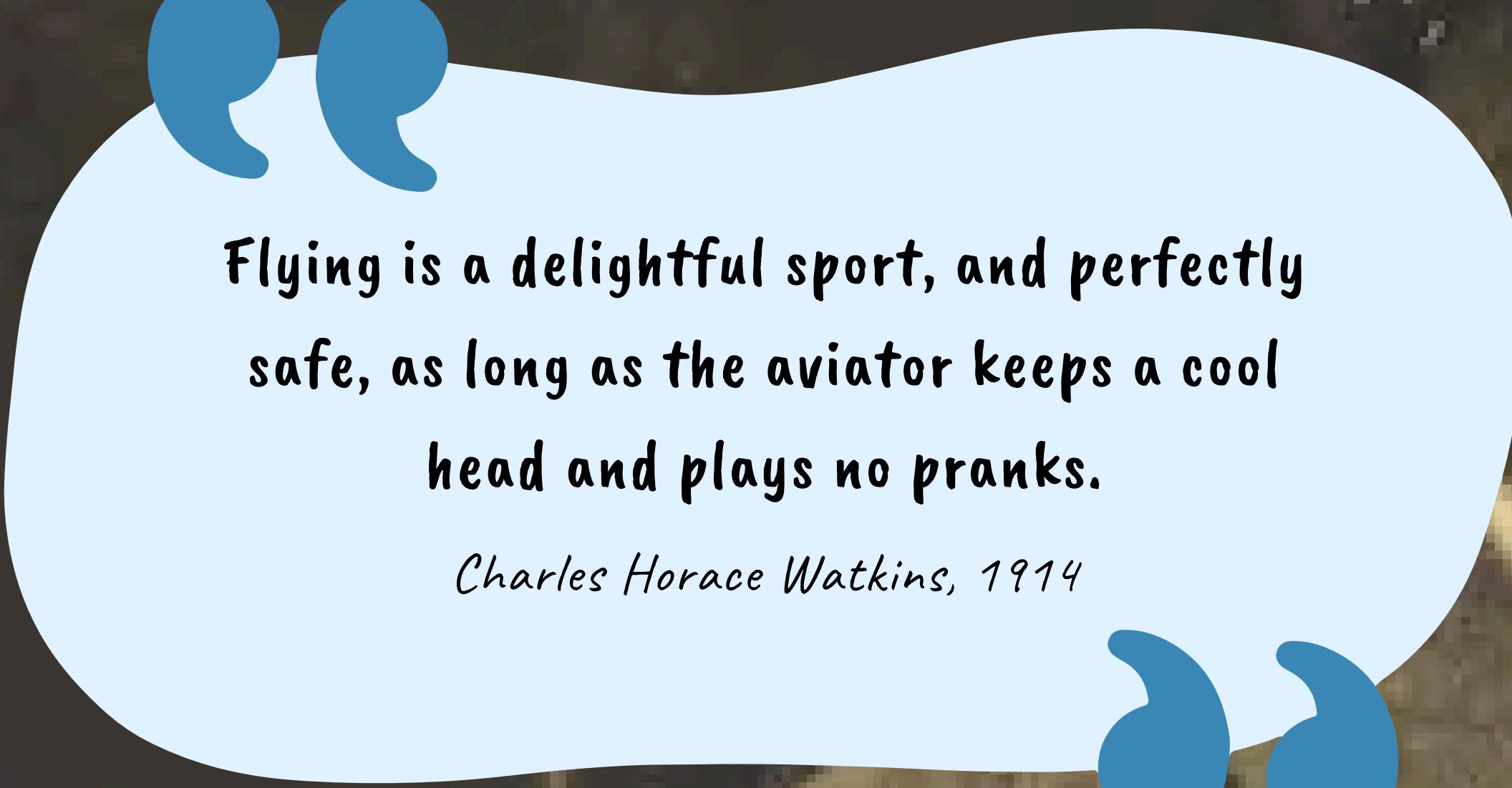


A German pilot named Gustav Hamel visited Cardiff and met Charles Horace Watkins in 1914. Two months after the meeting Gustav Hamel disappeared while flying over the English Channel.

Charles Horace Watkins, Gustav Hamel and Hamel's secretary at Cardiff, 1914



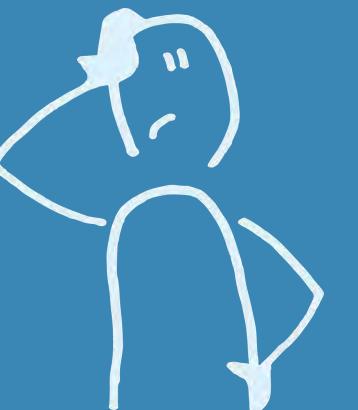
All the dangers didn't seem to put off Charles. He said...



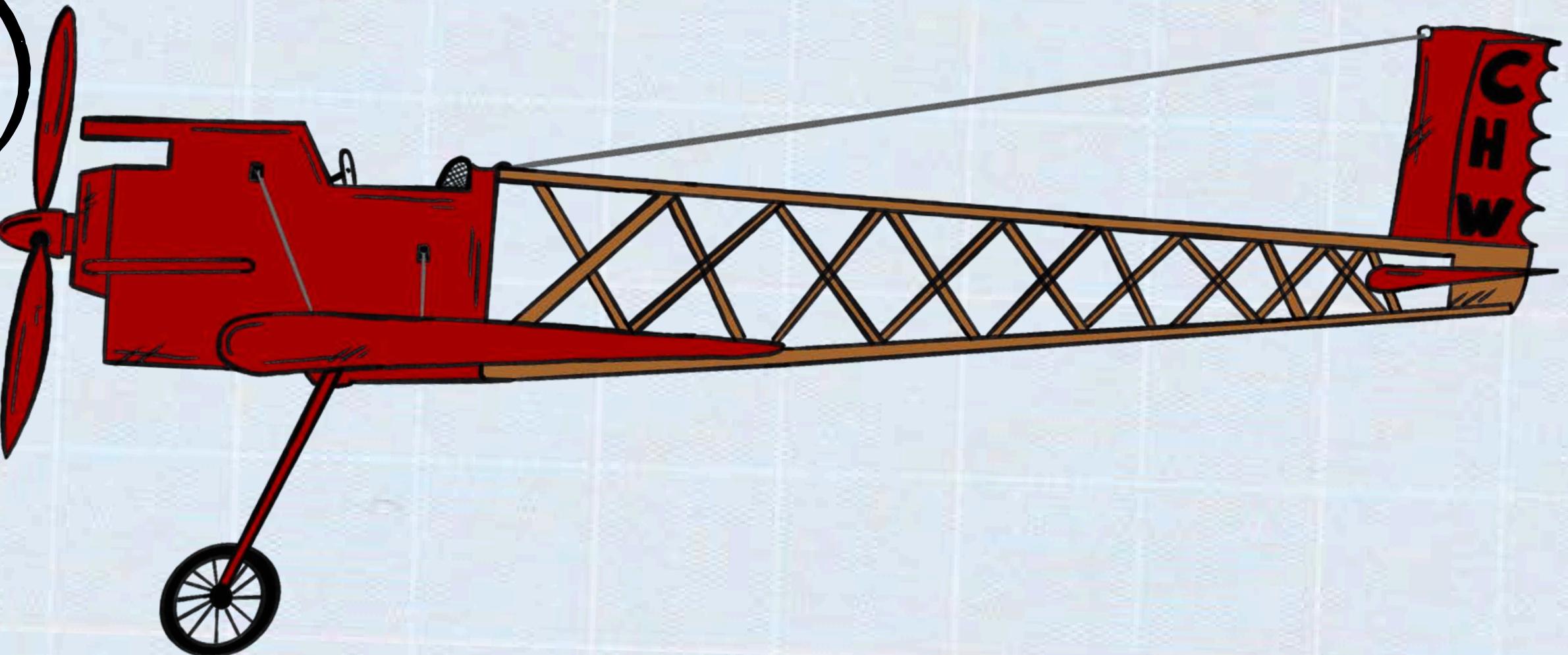
Flying is a delightful sport, and perfectly safe, as long as the aviator keeps a cool head and plays no pranks.

Charles Horace Watkins, 1914

HOW DOES IT FLY?



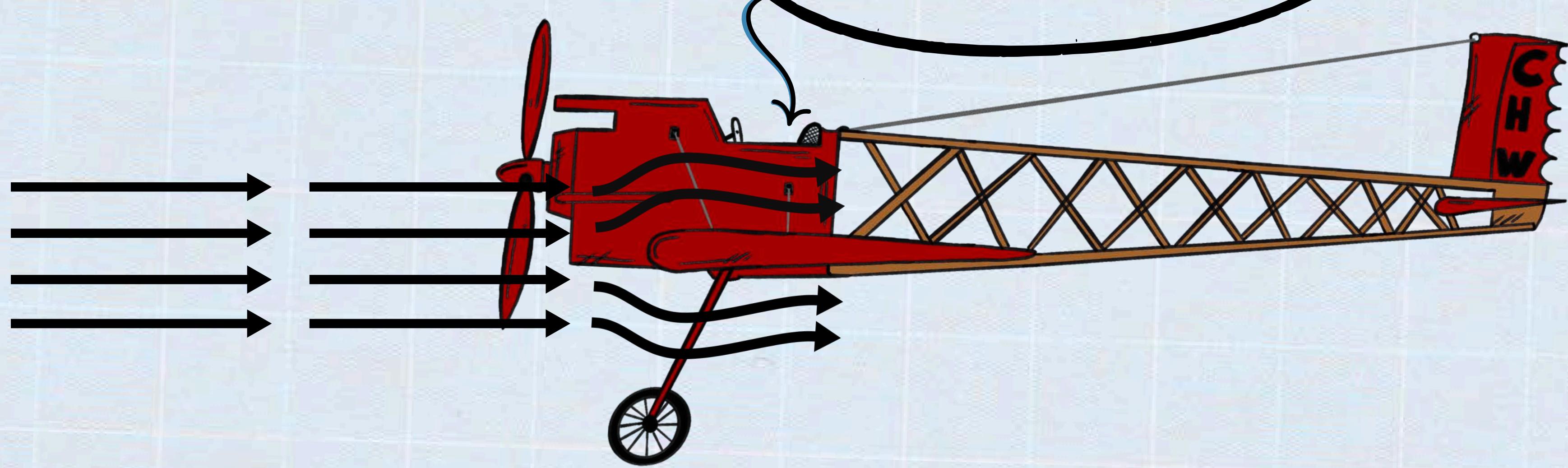
An engine turns a propeller at the front of the plane. This pulls the aeroplane forward.



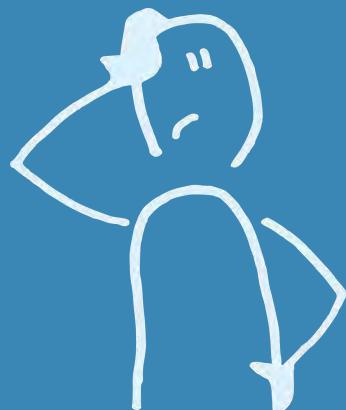
HOW DOES IT FLY?



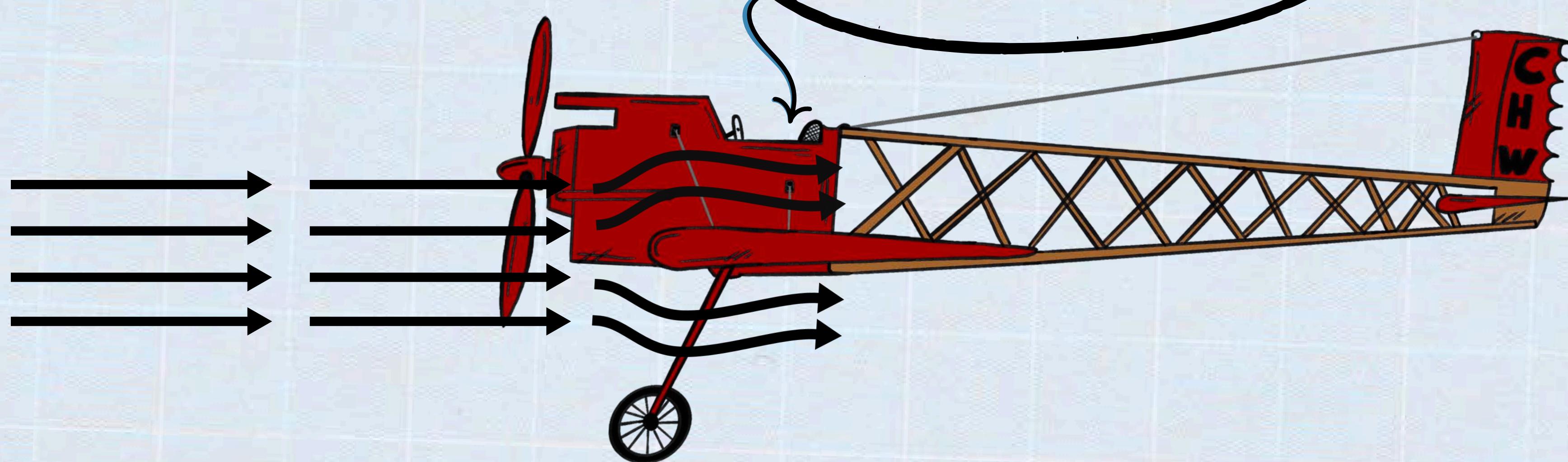
The wings move through the air as the aeroplane moves. The wings cut through the air sending air above and below the wings.



HOW DOES IT FLY?



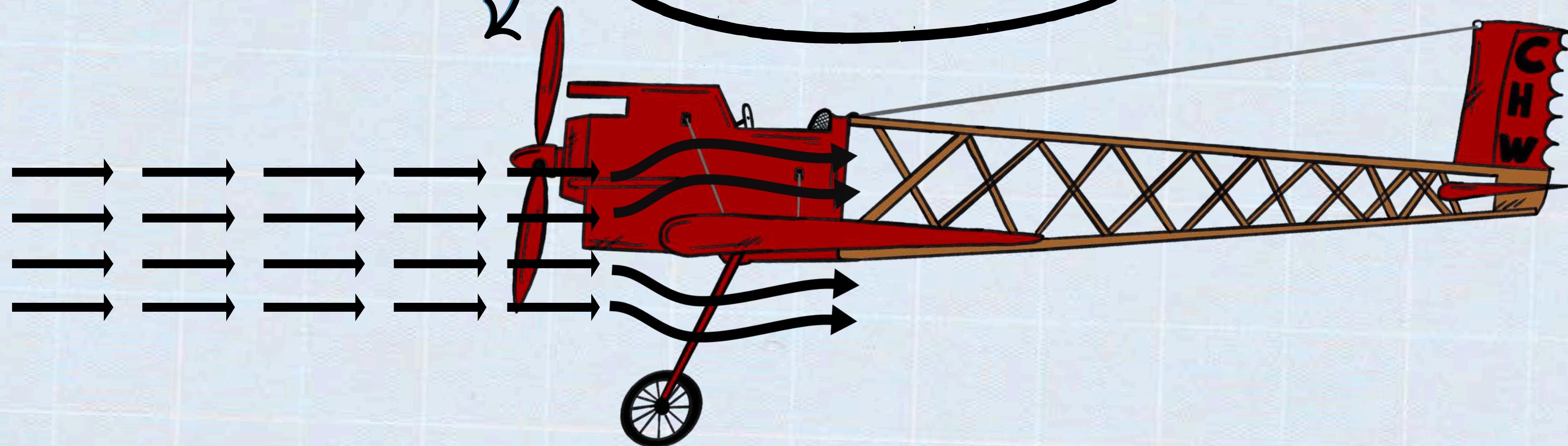
The air moving in this way around the wing creates high pressure below the wing and low pressure above the wing, and 'lift' is generated.



HOW DOES IT FLY?



As the plane picks up speed the pressure increases and more 'lift' is created. 'Robin Goch' needed to be going 70 m.p.h. to take off.



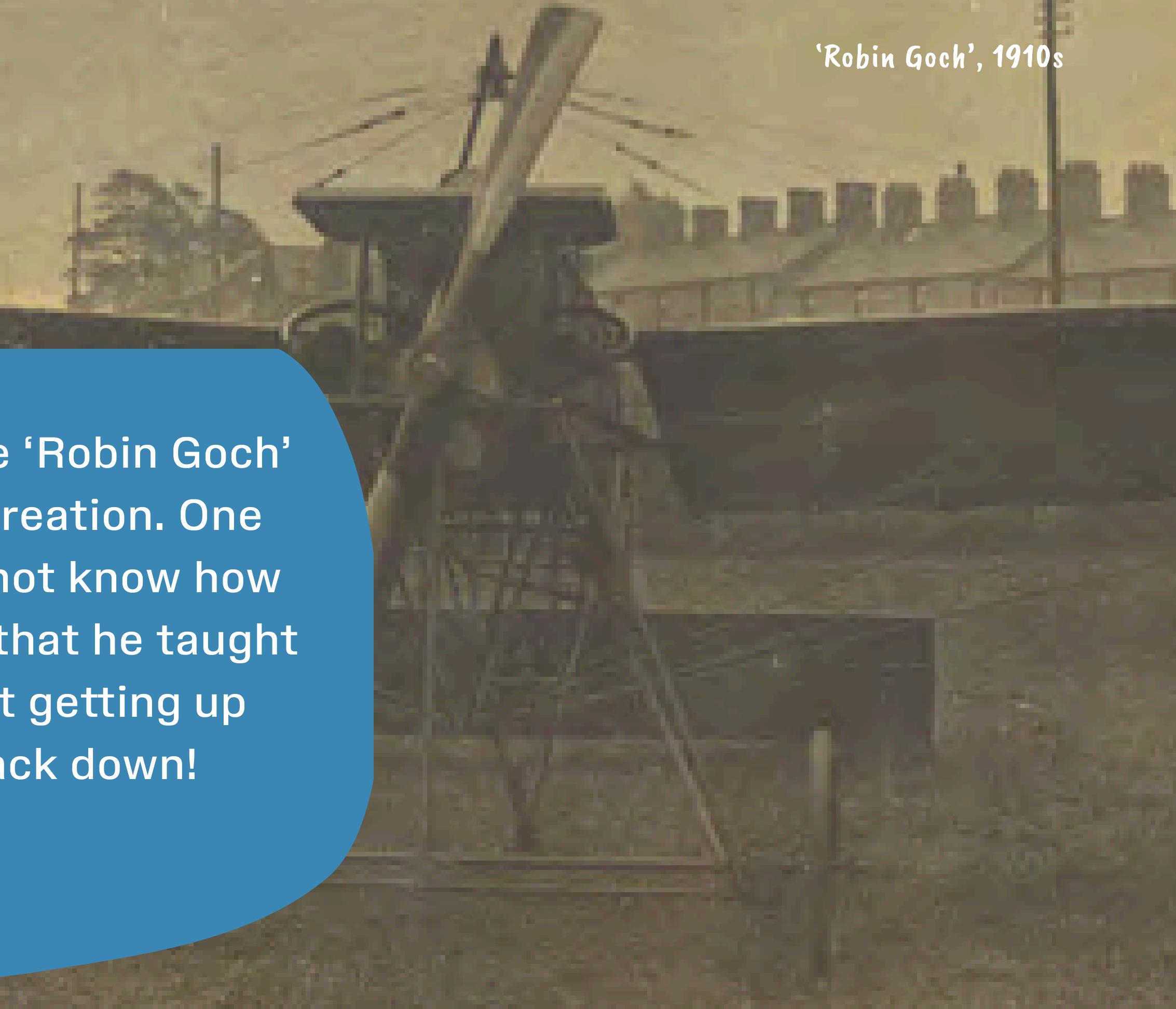
THE FIRST FLIGHT

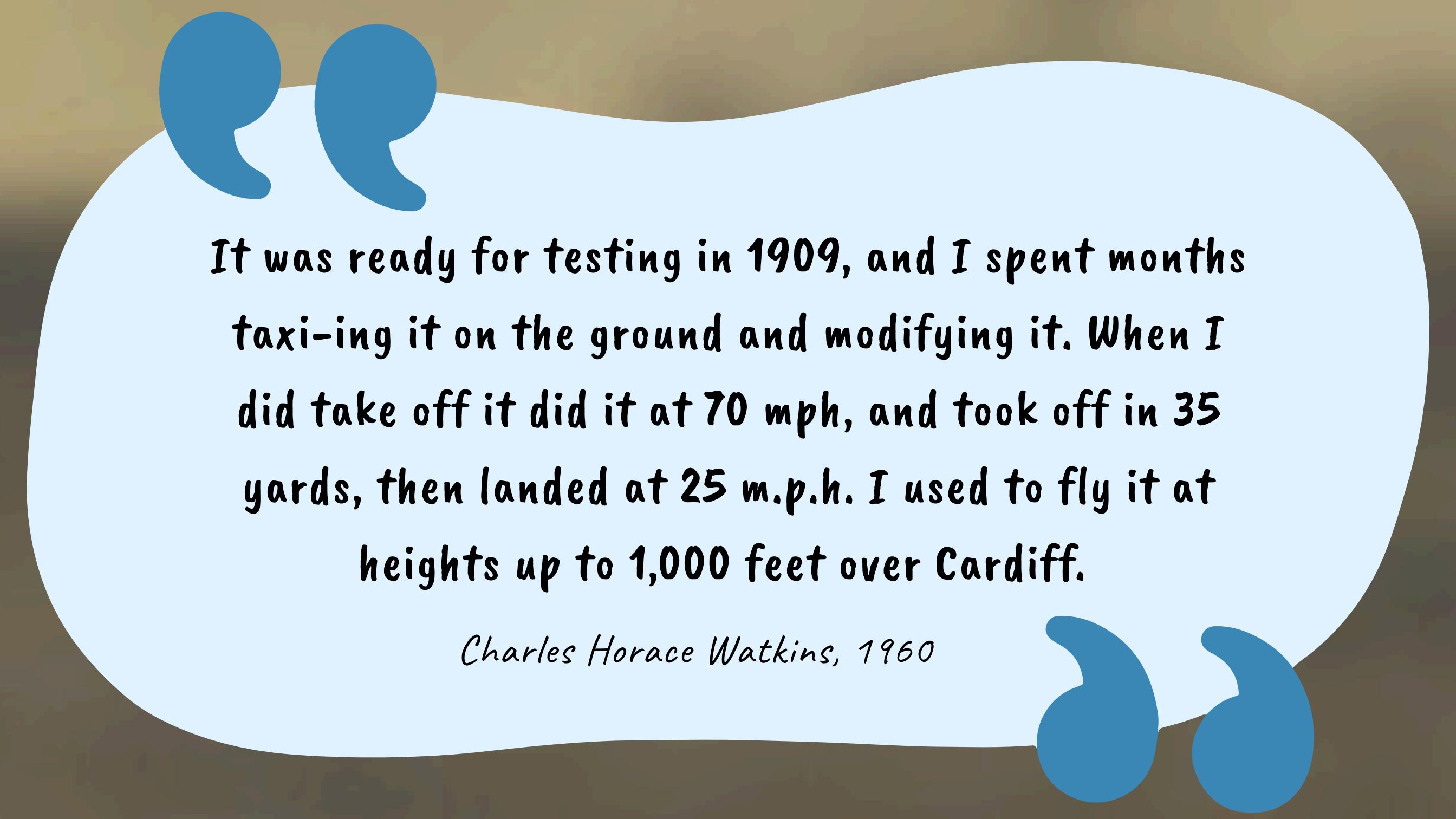


The story of the first flight of the 'Robin Goch' is not as easy to discover as its creation. One thing we do know is Charles did not know how to fly. He told people years later that he taught himself and wasn't worried about getting up but was worried about getting back down!

Charles said many years later...

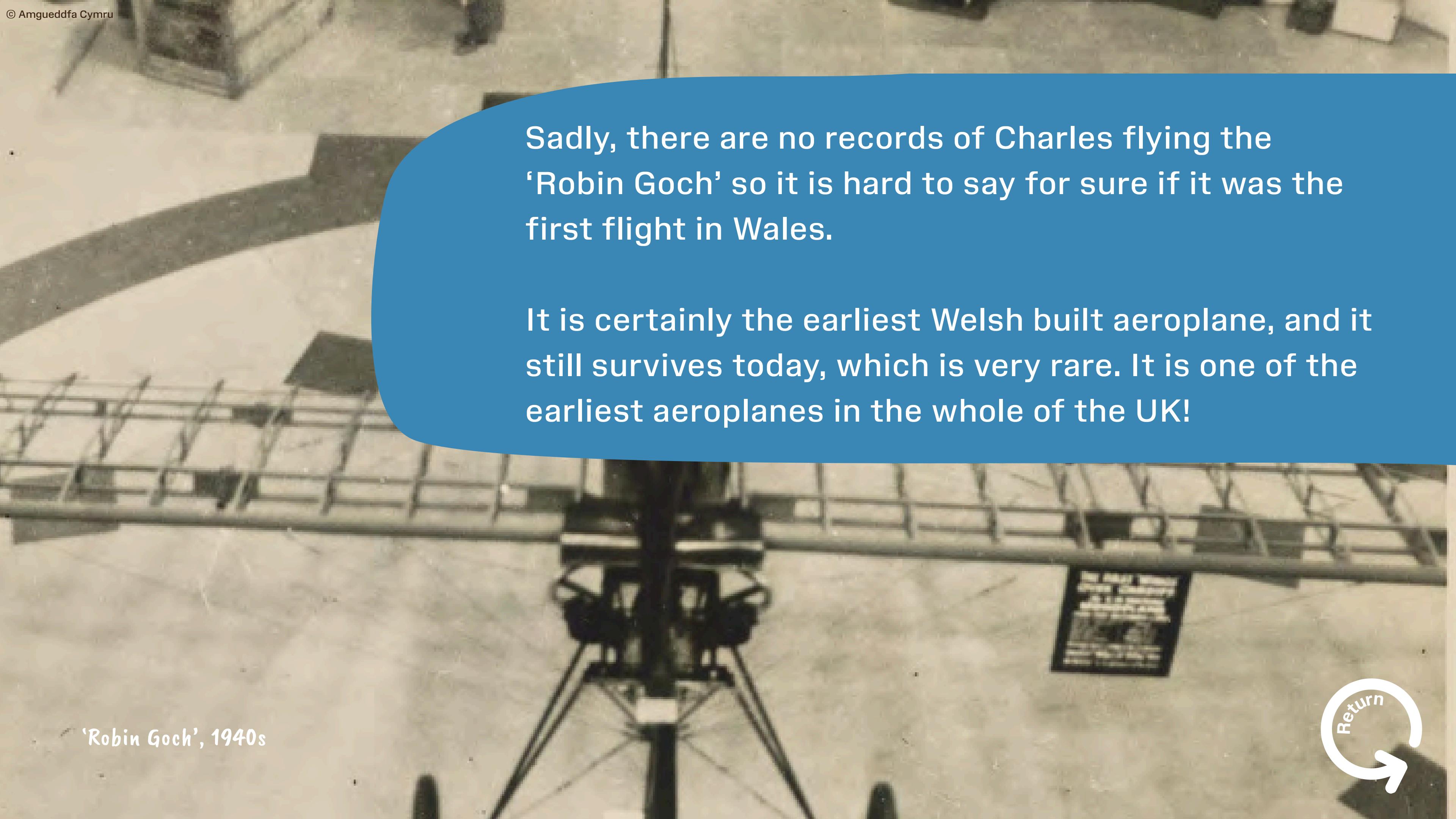
'Robin Goch', 1910s





It was ready for testing in 1909, and I spent months taxi-ing it on the ground and modifying it. When I did take off it did it at 70 mph, and took off in 35 yards, then landed at 25 m.p.h. I used to fly it at heights up to 1,000 feet over Cardiff.

Charles Horace Watkins, 1960



Sadly, there are no records of Charles flying the 'Robin Goch' so it is hard to say for sure if it was the first flight in Wales.

It is certainly the earliest Welsh built aeroplane, and it still survives today, which is very rare. It is one of the earliest aeroplanes in the whole of the UK!

'Robin Goch', 1940s



LEGACY



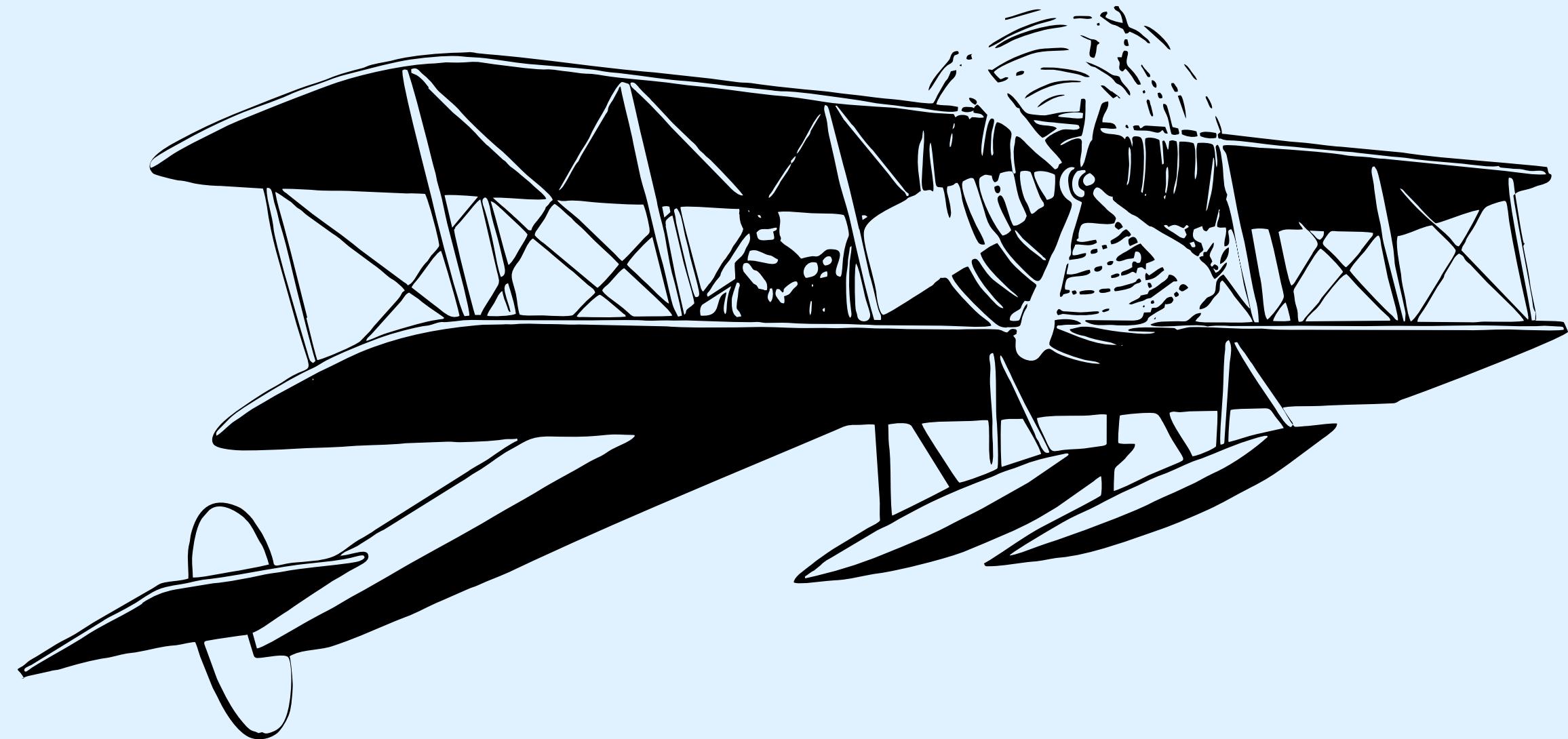
Aeroplanes would be used to drop bombs and take photos during WWI.



De Havilland bomber at Abercraive, 1918



After WWI, in 1919,
John Alcock and Arthur
Whitten Brown flew
across the Atlantic
Ocean without
stopping.

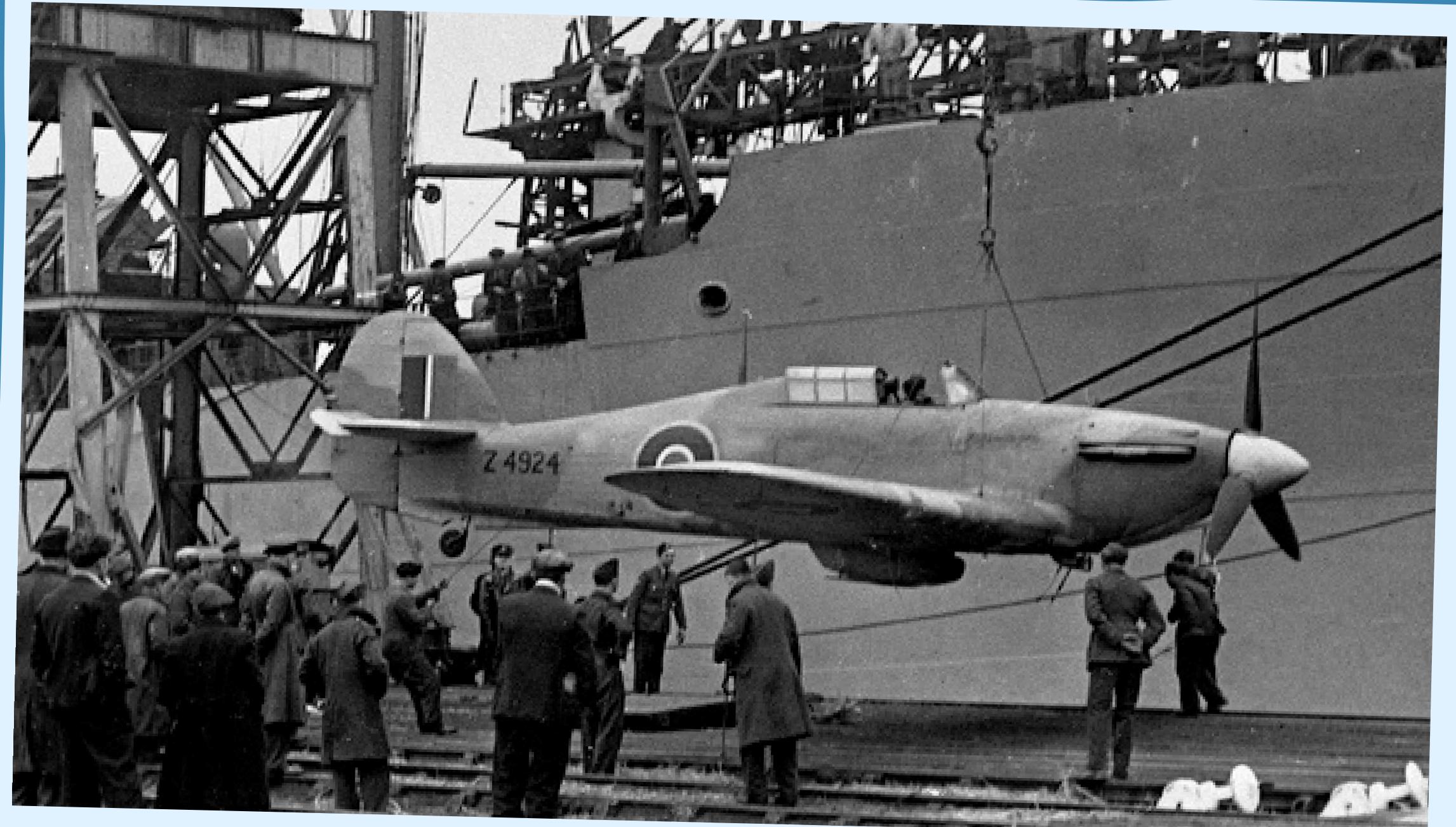




Amelia Earhart, 1936

In 1928, Amelia Earhart arrived at Burry Port, Carmarthenshire, becoming the first female to cross the Atlantic Ocean.

New types of aeroplane were created for WWII.



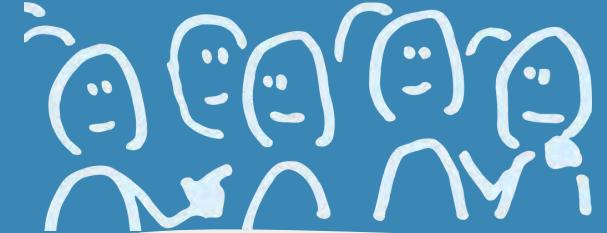
Hoisting spitfire onto prow of ship, 1942

By 1931, Wales had airports. Splott aerodrome flew passenger to Weston-super-mare and even Paris.



Aerial view of Rhoose airport, 1962

LEGACY



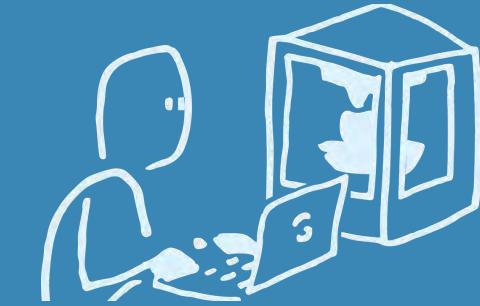
The development of aeroplanes, airports and air travel continues to this day. It has affected the jobs we do, how things are transported around the world, how warfare is conducted, where we can travel for work and leisure, it has changed how we live.

None of this would have happened without inventors like Charles Horace Watkins, who with their passion and imagination dreamed of travelling through the sky.

Charles Horace Watkins, 1960s



COLLECTIONS ONLINE



We have many more objects connected with Charles and 'Robin Goch'. Select some of the objects on this page to explore them. Try searching for more too.



Charles Horace
Watkins



Pilot's Hat

Newspaper cutting



'Robin Goch' at
National Museum
Cardiff



360° VIDEO



The 'Robin Goch' now hangs in the air at the National Waterfront Museum. The cable work holding the 'Robin Goch' up must be checked every five years. It is taken down, checked and cleaned.

Explore a 360° video of 'Robin Goch' being cleaned here.



[Watch video on YouTube](#)

Error 153

Video player configuration error



Click on the video to move around and explore.

Now, we don't suggest you set out to make a full scale plane! Making different types of paper planes will help give you an understanding of what shapes work best.

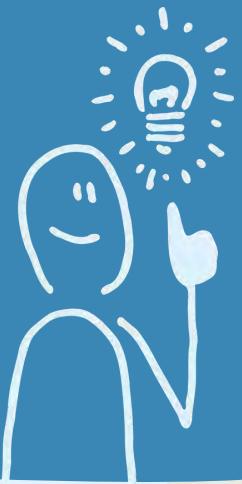
For this you'll need:

- A few sheets of plain, A4 paper
- Colouring pencils or pens to decorate

This short video will show you how to make five different airplane shape



MAKE A PLANE!



[Watch video on YouTube](#)

Error 153

Video player configuration error



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Discover more at...
museum.wales/learn



In person workshops
about Charles Horace
Watkins are available at
the National Waterfront
Museum. Click on the
image to discover more.