

Aviation development and the airship threat

Overview

Aim

To share the bigger picture story about aviation and airships in the First World War

To work with the time line to explore the British response to air attack

To find out about the First World War from the individual story of William Leefe Robinson.

Curriculum links

Key Stage 2 History

Pupils should continue to develop a chronologically secure knowledge and understanding of British, local and world history, establishing clear narratives within and across the periods they study. They should note connections, contrasts and trends over time and develop the appropriate use of historical terms. They should regularly address and sometimes devise historically valid questions about change, cause, similarity and difference, and significance. They should construct informed responses that involve thoughtful selection and organisation of relevant historical information. They should understand how our knowledge of the past is constructed from a range of sources.

Key Stage 2 English

Reading comprehension

- checking that the text makes sense to them, discussing their understanding, and explaining the meaning of words in context
- asking questions to improve their understanding of a text
- drawing inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence
- identifying main ideas drawn from more than 1 paragraph and summarising these
- retrieve and record information from non-fiction

Writing composition

- plan their writing by:
 - discussing writing similar to that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar
 - discussing and recording ideas
- draft and write by:
 - composing and rehearsing sentences orally (including dialogue), progressively building a varied and rich vocabulary and an increasing range of sentence structures [English appendix 2](#)
 - organising paragraphs around a theme
 - in narratives, creating settings, characters and plot
 - in non-narrative material, using simple organisational devices [for example, headings and sub-headings]
- evaluate and edit by:



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- assessing the effectiveness of their own and others' writing and suggesting improvements
- proposing changes to grammar and vocabulary to improve consistency, including the accurate use of pronouns in sentences
- proofread for spelling and punctuation errors
- read their own writing aloud to a group or the whole class, using appropriate intonation and controlling the tone and volume so that the meaning is clear
- explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary
- provide reasoned justifications for their views

Arts Award

Discover A and B

Explore A and B

Supporting resources

Photograph bank

Zeppelin!, Gunbus, Sopwith Camel, Rumpler C VII, William Leefe Robinson

Activity Mats

Timeline, Airship!, William Leefe Robinson display, Arts Award

Aviation development and the airship threat

Bastion in the Air

Exhibition at The Collection Museum, Lincoln

The Collection Museum in Lincoln hosts the 'bigger picture' story; the national story looking at the threat to Britain posed by aircraft and airships. This exhibition, in the temporary exhibition room at the museum, features a timeline showing the chronology of the development of what became the Royal Air Force in response to air attack from Germany.

In 1914, Britain didn't have an air force at all, but by 1918 it had the largest air force in the world.

In the exhibition, there is a model of a 1916 Zeppelin, 5.2 metres long created by Cliff Clover. This hangs from the ceiling and is lit by searchlights.

German airships dropped bombs on Lincolnshire largely as a result of poor navigation. They used Hull and the Wash as the gateway to the industrial East Midlands. Initially, air defences could not touch them. Normal ammunition was unable to break through both the skin of the balloon and the many bags inside which contained hydrogen. Breaking the skin required a combination of incendiary devices and explosive ammunition. Once the skin was penetrated through to the hydrogen, they were highly combustible.

William Leefe Robinson was the first pilot to shoot down an enemy airship. He became a hero and celebrity overnight. He was awarded the Victoria Cross. The exhibition holds both William's Victoria Cross and his Memorial Plaque, commonly called a 'Dead Man's Penny'.

He was the pilot of aircraft similar to those built in Lincoln.

Key Stories

Aviation development and innovation

- Response to the airship threat
- Lincolnshire's contribution to aircraft production. The surprising story here is that Lincolnshire was a major contributor to the First World War through aircraft production, not just tank production
- It was mainly women who made, and in some cases designed the aircraft.

The threat from the air

Museums from Berlin and Dresden are supplying objects never before seen in UK for the exhibition at the Collection Museum. Objects on loan include the German equivalent of the Memorial Plaque and metal insignia worn by Zeppelin crew members. Every member of a German airship crew had a metal insignia showing their position within the crew. The Memorial Plaques appear next to the insignia.

National stories

- Propaganda from both sides of the war.

Aviation development, innovation and the airship threat

Timeline: Story of aerial combat

First use

1792

As long ago as 1792 to 1802, during the French Revolution, French soldiers used hot air balloons to observe the enemy on the ground.

1903

In the United States, Orville and Wilbur Wright made the first flight in a powered aircraft.

1908

American Samuel F Cody is known as the 'Father of British Aviation'.

Working in the UK, he built kites that could lift people off the ground. Cody made the first flight in a powered aircraft in the UK in 1908. The British Government could not imagine any use for Cody's aircraft and so stopped providing money to support his work in 1909. Cody continued working on his ideas at his own expense. Sadly, in August 1913, Cody died in a flying accident.

A slow start for Britain

1911

By 1911, France, Germany and Italy were investing in the development of aircraft. Count Ferdinand von Zeppelin was leading the development of giant airships in Germany. Other German companies also built airships, for example the Schütte-Lanz company. However, the influence of Count Zeppelin was so great that the word 'zeppelin' is often used in English to describe any German airship of this period.

Private French companies were developing aircraft and the Italians were the first to use aircraft as a weapon when they attacked Turkish forces in Libya in 1911.

1912

The British Government felt threatened by European development of aircraft so on 13th April 1912 it established the Royal Flying Corps (RFC). The Royal Flying Corps included: a wing each for the Army and Navy, a Central Flying School, a Reserve and the Royal Aircraft Factory at Farnborough.

Different opinions

1915

The Army and Navy had very different views of the Royal Flying Corps. The Army was slow to see the benefits of an air force. It could only imagine an observation role. It didn't believe that the RFC could provide more information on enemy activity any more quickly than cavalry on the ground.

The Navy did see the potential to use the RFC as a weapon, carrying out bombing raids on German ships. The two different approaches meant it was impossible to keep both the Army and Navy air forces in the same organisation so in July 1915 the air force divided into two wings, military (RFC and the Royal Naval Air Service (RNAS)).

1914

Unlike the British Armed forces, the German Army and Navy were quick to recognise that aircraft could be powerful weapons. The German armed forces had both aircraft and airships. Aircraft could not fly as far as airships. They had a much shorter range. The first German air attack was carried out by a seaplane dropping two bombs in the sea at Dover on 21st December 1914.

Threat from airships

1915

German airships could travel further than aircraft. They could hit targets in Britain. The first attack by an airship took place at night on 19th and 20th January 1915. The airships planned to hit the Humber and the Thames but bad weather meant they had to change course. They dropped their bombs on towns and villages along the east coast. They hit Great Yarmouth, Kings Lynn, and Norfolk villages.

The airship crews were celebrated as heroes in Germany. In Britain the press called them cowardly and murderous.

Airships were hard to see, flew at high altitude so were hard to hit by anti-aircraft guns. They were made up of a skin and individual gas bags. If they were hit, bullets simply caused a puncture.

British people were furious with both the British Government for not protecting them and Germany for the attacks. This resulted in riots and damage to German-owned businesses in Britain.

Airship attacks

1916

In January 1916, nine airships were launched in a major attack targeting Liverpool. Navigation was still poor. Airships rarely found their planned targets and so dropped bombs randomly across the country. This time, their bombs hit Derby, Loughborough and Scunthorpe.

In February 1916 responsibility for protecting parts of the UK vulnerable to attack went from RNAS to RFC. RNAS focused on shipping and anti-submarine patrols.

In March, airships planned to attack London but problems with engines meant that the launch was delayed so one Zeppelin crew decided to attack Grimsby instead. The bombs fell on a church in Cleethorpes where soldiers from 3rd (Reserve) Battalion Manchester Regiment were staying. 31 soldiers were killed or died from their injuries and 51 were wounded.

1916 saw the first attacks successful in bringing down four airships.

The first was brought down by Lt William Leefe Robinson on the night of 2nd/3rd September (the subject of the exhibition at The Collection).

Using explosive bullets, he was able to tear large holes in the airship's skin and the incendiary bullets then set fire to the hydrogen in the gas bags.

Lt William Leefe Robinson was awarded the Victoria Cross and became a hero overnight.

Technology meant the airships continued to develop and improve. The latest airships could reach a height of 6,000 metres. At this altitude, it was hard for crews to function and

navigation became much harder. There were fewer airship attacks from this point but the German army decided to focus on developing aircraft to drop bombs.

At this point Britain developed a formal air raid warning system to protect both military and civilian populations. By July, a network of RFC airfields, searchlights and anti-aircraft guns created a barrier across all of the airship routes into Britain.

Bomber aircraft

1917

The Germans armed forces developed large bomber aircraft. The Gotha IV was the first of the new bombers. They were used for the first time against British targets on the city so the bombers decided to attack Folkestone instead. The attack killed 93 people and injured 195.

More raids followed. On 13th June 1917, the bombers hit a school in east London killing 18 children. This caused outrage. The public demanded an effective defence against the bombers and called for revenge attacks on German cities.

As the air attacks increased, Prime Minister Lloyd George asked South African General Jan Smuts to look at how best to protect Britain from air attacks.

General Jan Smuts recommended the RFC and RNAS stop their rivalry and start working together. He also recommended strategic attacks be carried out on Germany.

The Germans continued with attacks by Gotha aircraft but started to suffer losses. In 1917, they began to fly night raids. An even larger bomber came into operation at the end of September 2017: the R.VI Gigant, terrifying for people who were already under threat of attack.

The British response

1918

Following General Smut's recommendations, the RAF was formed on 1st April 1918. The London Air Defence Area was also set up and proved successful. Of 41 aircraft that attacked London on 19th May 1918, seven were shot down.

In June 1918, the RAF created an Independent Bombing Force to attack German targets.

The last air raid on Britain took place on 5th August 1918. Five German Navy airships attacked but bad weather destroyed their plans. Zeppelin L70 was shot down and all of the crew were killed including Fregattenkapitan Peter Strasser, commander of the German airship fleet.

Statistics of German bombing raids during the First World War

During the First World War, there were 51 German airship raids on Britain. They dropped 196 tons of bombs. The bombs killed 557 people and wounded 1,358 more.

52 aircraft attacks dropped 74 tons of bombs, killing 857 people and wounding 2,508.

The aim of the raids was to weaken the spirit of the public but this did not work.



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The people of Hull reported rather than frightening them and breaking their spirit, the Zeppelins attacks had the opposite effect. Communities came together and became stronger, united against the threat.

The raids meant that the British Government had to divert 14 flying squadrons from the Western Front to protect people in Britain. This weakened British airpower in the War in France and Belgium. It did however lead to a national air defence system that would be very important to success during the Battle of Britain 22 years later.

William Leefe Robinson

William Leefe Robinson was born in India on 14 July 1895. He was the youngest of seven children. He went to primary school in India and to secondary school, St Bees School, a private boarding school in England, in 1909. He joined the Royal Military Academy Sandhurst on 14 August 1914. On 16 December 1914, he was **commissioned** as a **Second Lieutenant** in the Worcester Regiment.

William went to the Royal Flying Corps as an Observer in March 1915. While on a patrol in France in a BE2c in May 1915, he was wounded in his right arm and sent back to England.

He applied for pilot training and qualified in September 1915.

In February 1916, he was posted to No 39 (Home Defence) Squadron, Essex. His squadron flew BE2c aircraft as night fighters against German airships.

While on patrol during the night of 25/26th April 1916, William spotted an airship, flying at about 3,000 metres. In his BE2c, he could only reach a height of 2,400 metres. He opened fire. The airship released some **ballast** (weight) and so was able to climb quickly out of sight and out of range.

In the next few months pilots tried to track down airships. Each pilot was given a 'lane' to patrol, based on the most likely routes airships would take to London. On the night of 2/3rd September 1916, William was on patrol when he spotted an airship in the distance. He chased after it but it disappeared into clouds. He then spotted another airship and chased after that.

This was airship SL11, commanded by Hauptmann (Captain) Wilhelm Schramm. William flew the length of SL11 twice, firing all of his ammunition into it. The airship burst into flames and fell to the ground. There were no survivors. Thousands of people witnessed the event from the ground.

The British public had been under attack from the airships since January 1915. They thought they were impossible to stop. William became a hero overnight. For his 'most conspicuous bravery', William was awarded the Victoria Cross within 48 hours of shooting down the Zeppelin. This is the fastest award of a Victoria Cross ever made.

William became very famous. He was very uncomfortable with this fame and asked for a posting away from the spotlight of Home Defence.

He was promoted to Captain and sent to No. 48 Squadron. This squadron was training with the new Bristol F2A fighter, ready to move to France.

In March 1917, 48 Squadron moved to Bertangles, France. On 5 April, the Squadron launched its first operational mission. Just after they crossed enemy lines, the F2As were attacked by Albatros aircraft from von Richthofen's *Jagdstaffel 11* (*fighter squadron 11*).

The pilots in William's squadron were just getting to know how to fly in their new aircraft. This made them very easy targets for the experienced German pilots. Four of the six aircraft were shot down, including William's. William and his observer, Lieutenant E D Warburton were sent to prison camps in Germany.



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William tried to escape many times. He was part of a four-man team who tried to tunnel out of the first camp he was in. This didn't work. William and another person did manage to escape in broad daylight on 18 September 1917. They spent four days travelling towards Switzerland. They were within four kilometres of the border and safety when they were caught. For trying to escape, William was put in solitary confinement for one month in Zorndorf fortress.

On 2 May 1918, William was transferred to a camp at Clausthal. He tried to escape on the way by attempting to jump from the train but was stopped. The camp at Clausthal was run by Hauptmann Heinrich Niemeyer, one of twin brothers known to treat prisoners very harshly.

In July 1918, William was transferred to a different camp at Holzminden. This camp was run by Hauptmann Karl Niemeyer, Heinrich's twin brother. He made life as difficult as possible for William, because of his reputation as a 'Zeppelin killer' and repeat escaper. Almost immediately after his arrival, William escaped with another British officer. He was quickly recaptured. Niemeyer targeted William brutally throughout the rest of his time in prison.

While in prison William didn't get enough to eat, so became weak. He was already ill when the war ended in November 1918. He came back to England in December 1918 and became a bed patient in the home of a colleague near London.

Already very weak, William caught the 'Spanish flu' virus that was rampaging throughout Europe. On 31 December 1918, Captain William Leefe Robinson VC died as a result of heart failure, brought on by the flu. His fiancée and a sister were at his bedside. William was 23.

Aviation development and the airship threat

Classroom activities

Session 1 Timeline (activity mat provided)

Start by asking what pupils they know about Lincolnshire and the First World War. They may know about war memorials and tank building. It is unlikely they will know Lincolnshire was a major contributor to the First World War through aircraft production. Explain that pupils will look at the important role played by Lincolnshire in the history of aviation in the First World War. At the start of the War, Britain did not have an air force. By the end of the war the British air force was the largest in the world. Ask why they think this might have happened?

Discuss the timeline. It can be used in many ways. Cut the time line up and give different time sections to groups of four or five children. There are headings which flag up different themes. Ask pupils to read the information (or team read) and then prepare to share their part of the story with the rest of the class.

They should summarise the key points in their part of the story, with a clear introduction, a description of what happened and then a summary of any lessons that might be learned.

Ask each group to present their summaries in chronological order.

This should provide an overview of the history.

When pupils have an understanding of the chronology and issues involved give them a selection of the following tasks to do:

- Summarise the key points of the history of aviation
- Summarise the key points in aerial combat
- Cut up the timeline facts and put them in order of the most important and least important
- Choose three key the turning points in how UK responded to threats from the air. If children have selected different points, discuss why they consider some to be more significant than others
- Highlight anything in the timeline that surprises them
- Highlight key vocabulary and create a dictionary of definitions for each theme
- Cut ten sentences from the text and order them according to: most to least important; most to least interesting; most to least 'known'.

Ask pupils to report back.

(These activities will work with most of the background information provided in this resource).

Ask pupils to reflect on and the report back on:

- What interests them
- An aspect of the story they would like to investigate further
- Ideas on how might they do this.

Aviation development and the airship threat

Session 2 Airship! (activity mat provided)

Refer back to the timeline. Ask pupils to focus only on the information that refers to the Zeppelin threat.

- Can pupils summarise the history of the Zeppelin threat?
- What did a Zeppelin look like?
- What is the difference between an airship and an aircraft?
- What made them so frightening?
- What were the main problems with airships?

Hand out the photographs of aircraft to show the different types of airship and aircraft. Each image contains information and activity ideas.

Creative writing

Create a shape poem about a Zeppelin.

Pupils can write down adjectives in word banks to help form a shape poem.

Think about the Zeppelin in three ways and create three word banks. The first word bank is about the Zeppelin's physical appearance: what it looked like, what it was made from and what it sounded like.

Word bank 1

The Zeppelin

What did the Zeppelin look like?

What was it made from?

What did it sound like?

Word banks 2 and 3

The second and third word banks are about more personal responses. Invite pupils to put themselves in the shoes of people at the time and use sentences I see..., I hear..., I smell, ... I feel....

Word bank 2

The view from a Zeppelin

What did it feel like to fly in a Zeppelin?

What was it like to be on a mission to attack cities in a Zeppelin?

What was it like to be attacked?

Word bank 3

The view of a Zeppelin

What was it like to see a Zeppelin, an airship, in the sky for the first time? (remembering that aviation was new).

What was it like to see the Zeppelin used as a weapon?



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The shape poems can be made in the form of an airship, a crew member or someone on the ground.

Alternatively use the word banks to create a poem with three stanzas.

The first will start with

Zepplin!

The second

In the air I... (see, feel, hear)

The third

On the ground, we... (see, we feel, we hear).

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Session 3 (Airship! activity mat provided)

Pupils will be journalists making a short report on what they have found out about aerial combat in the First World War. They will:

- Create a news item on an aspect (or angle) of the story they find interesting based on any four years between 1908 and 1918.

Refer back to the timeline, which are the key dates?

What happened on these dates?

How might their news report be different from someone reporting at the time?

How will they share their story? (blog, video, radio, television news item, documentary, Facebook or Twitter feed).

Ask pupils to consider how might the War have been different if these types of media had been available at the time?



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Are you in this?



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Step into your place



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Educational resources for schools

At the exhibition there are propaganda posters from both Britain and Germany.

The Imperial War Museum's website has many examples of British propaganda posters that can be used in preparation for a visit or to study this topic further.

There is an interesting short video about propaganda on the Imperial War Museum's website

<http://www.iwm.org.uk/learning/resources/first-world-war-recruitment-posters>

The language level may be too high for children but it provides some excellent background to propaganda for teachers.

Using examples from the exhibition or online ask:

Can the pupils tell which poster was created by which country?

How can they tell?

What are the messages?

What is the point of these messages?

Create a poster to encourage other pupils to positive action in school. It could be something very simple like not dropping litter or it could be looking for volunteers for a buddy scheme.

Aviation development and the airship threat

Session 4 William Leefe Robinson (activity mat provided)

William Leefe Robinson was the first pilot to shoot down a German airship over Britain. He became a hero and celebrity overnight. He was awarded the Victoria Cross. The exhibition at The Collection Museum tells William's story and holds both William's Victoria Cross and his Memorial Plaque.

Explain that pupils are going to create a display in school about William Leefe Robinson. To do this they will have to use their research skills, design skills and marketing skills. Use the activity mat to help them research William's story.

Research skills

Ask the children to plan their research project. What do they need to do to create a display about the life of William Leefe Robinson? (establish what they know, work out what they need to find out and how, think about how to present their stories/findings, design and create their display, invite visitors to view their display)

Check what they know already.

What questions will help them to find out more?

Share William's story.

William's story is provided, adapted from a recent touring exhibition created by Aviation Heritage Lincolnshire.

Ask pupils to pick out key points in his story. Ask them to write William's story as an outline.

Next ask them to write down any questions they still have.

Where might they find out more?

Are there any other resources available that might help them to tell William's story?

Introduce the idea of reliable and unreliable sources of information.

Reliable sources:

- Local archive
- Library
- Statements from witnesses
- Universities
- Trusted websites (ending in: .ac.uk or gov.uk or org.uk)

Unreliable sources

- Information that can't be checked
- Biased information or opinion
- Unreliable websites.

The team at Aviation Heritage Lincolnshire gathered items that belonged to William. They have his Victoria Cross and his death penny.

What might pupils use to tell William's story?

Presenting William's story

How will pupils present their display? (information boards, video, music, drama, dance, video, PowerPoint, drama, expert talks?)

They will need to think about what information they would like to share and how this will appear. They need to think about design. Ask them to draft out some ideas.



Marketing

How will they invite people to visit the display?

Marketing is very important. People wishing to attract visitors have to think about lots of things:

- The people they will invite
- How to reach these people with invitations
- What sort of invitations to send
- The place where the display will be
- Whether they will charge a fee or not.

Put together a plan for the display.

Discuss it making sure everyone has the opportunity to make their voices heard.

Allocate tasks.

Review the plan.

Create the display.

Afterwards assess how the display went. Is there anything they would differently in hindsight?

Compare and contrast

There is an exhibition about William Leefe Robinson at The Collection.

Compare the display in school with the exhibition at the Collection.

- How are the two different or similar?
- How have pupils chosen to tell William's story?
- How has Aviation Heritage Lincolnshire chosen to tell William's story?
- Have both chosen the same facts?
- Did pupils learn anything new from the exhibition at the Collection?
- Would the team at Aviation Heritage Lincolnshire learn anything new from the pupils' display?