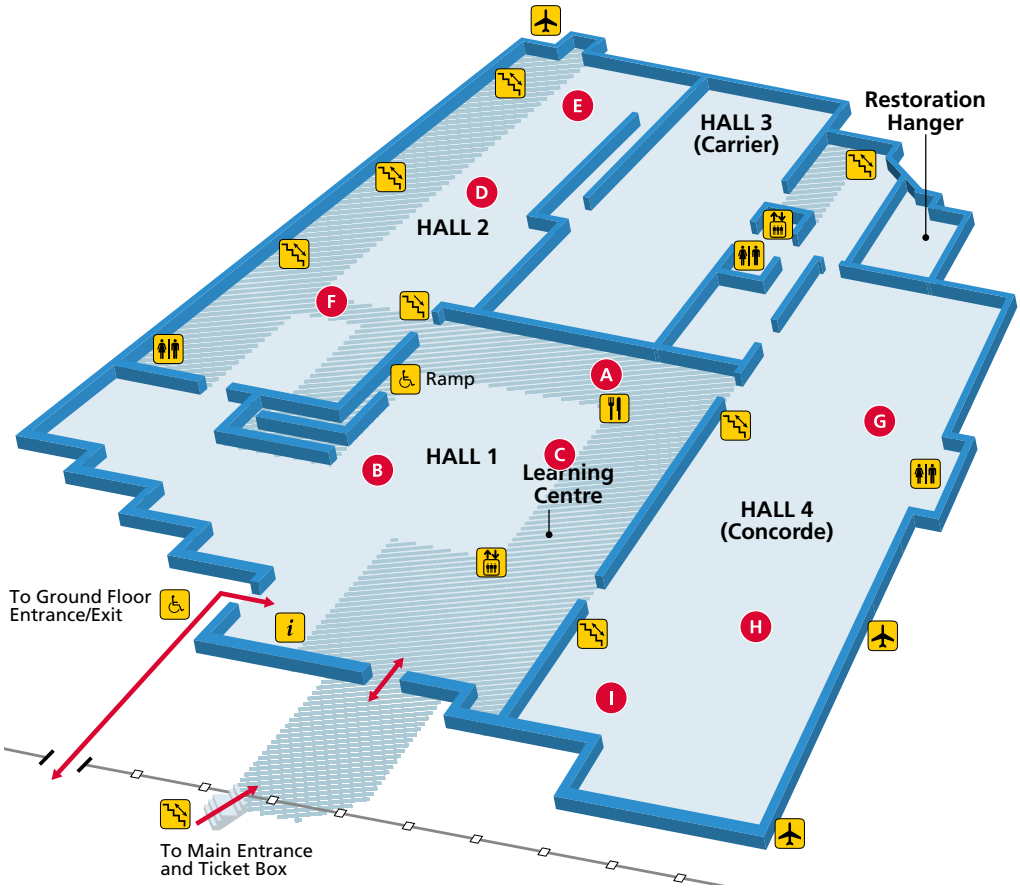
ROYAL NAVY
FLEET AIR ARM
MUSEUM

THE NATIONAL MUSEUM ROYAL NAVY

HOW TO BUILD AN AIRCRAFT

Ever since the Wright brothers built their 'Flyer' in 1903, the materials used in aircraft building have been constantly evolving. This trail will take you on a journey around the museum exploring the development of aircraft, from early pioneering biplanes to modern supersonic jets.

- Disabled Access
- Warnefords Tea Room & Vending Machines
- Aircraft Viewing Point
- Stairway
- Toilets/ Baby Changing with Disabled Access
- Lift
- Information Office/ First Aid Point
- First Floor Exhibits
- Discover Points



MUSEUM RULES

- Please only eat and drink in designated museum spaces.
- Please do not run
- Please stay in your small groups as you go around the museum
- If you are using the Learning Centre as a lunch space, the door code is **C4590Z**

HINTS & TIPS

- As you go around the museum, you will see our amazing volunteers. Make sure you ask them lots of questions!
- Try using the 'See, Think, Wonder' Model as you go around the museum. What do you **SEE**? What do you **THINK** is going on? What does it make you **WONDER**?

HALL 1

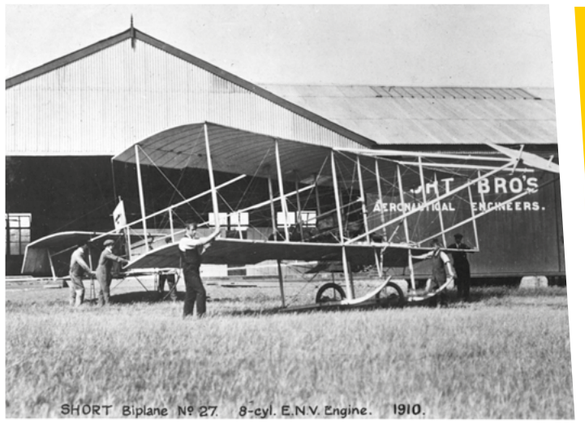
Just a few years after the World's first ever aeroplane flight, the Royal Naval Air Service was formed and naval aviation began. Discover the remarkable story of the developments of the first Royal Navy aircraft, from ships in the air through to aeroplanes on the water.

A PIONEERS OF FLIGHT GALLERY

See: For hundreds of years the Royal Navy have known that climbing up high above the sea means you can see more, and further. This helps in exploration, protecting yourself from the enemy, and navigating the seas.

Think: See Further. In this gallery, can you find the different ways that the Royal Navy put 'eyes in the sky'?

Wonder: How do these aircraft fly and get up in the air?



B SHORT S.27

See: In 1911, only 8 years after the Wright brothers first flight, the Royal Navy trained its first pilots. The aeroplanes were very basic and were not able to travel very fast or very far.

Think Materials: What different materials can you see used in these early aircraft?

Wonder: Why do you think that these aircraft aren't all made from metal like more modern ones?

C EARLY PILOTS UNIFORM

See: Some of the earliest leather protective gear was made up the road in Yeovil. The leather glove industry was so important in Yeovil that the football club are known as "The Glovers"!

Think: Materials. This Flying suit is over 100 years old. What material is it made from and why?

Wonder: How safe would you feel flying an aircraft and wearing a leather flying suit? You probably have more protection riding a bike!

HALL 2

In the years that followed the birth of the Royal Naval Air Service a number of areas changed, including the name to the Fleet Air Arm! Discover how aircraft changed through to the Second World War and the start of the Jet age– from number of propellers, to shape of wings, to the materials of the aircraft.

D CORSAIR

See: Developments in aircraft design and technology meant Second World War aeroplanes could fly higher, faster and further. They could now better fly over sees and countries to get to their destination.

Think: Paint. Over the last few years, the paint on this aircraft has been peeled back to reveal its original Royal Navy pattern. What different reasons can you think of to paint or repaint an aircraft?

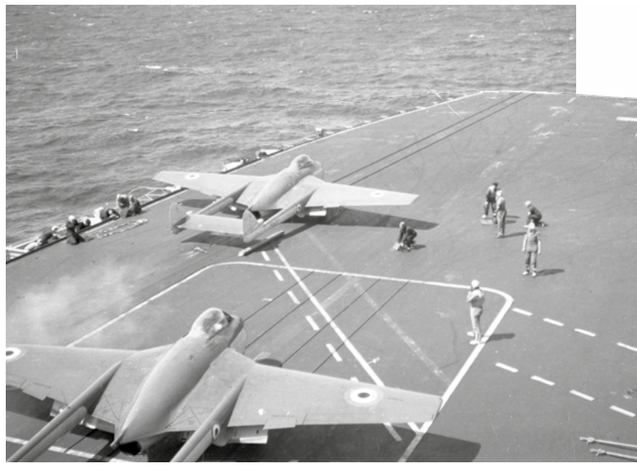
Wonder: Using the right type and amount of paint on an aircraft is important– one coat of paint on this aircraft weighs approximately 70KGs! Why might the right type of paint also be important, particularly if it gets wet or rained on?

E VAMPIRE

See: The Vampire was one of the first jet aircraft to be built for the Royal Navy. It may look like it is made entirely from metal, but it is also made from lightweight Plywood and waterproofed (doped) Fabric.

Think: Materials. The frame of its main body (fuselage) is made from Plywood. Why do you think that the entire aircraft couldn't be made from wood, as opposed to metal?

Wonder: What materials can out think of that would, or wouldn't, be good to make an aircraft from? Why?



WINGS AND PROPELLERS

F

See: Wings can fold in several ways: Simple (Upwards-like a butterfly); Aftward (Backwards – like a bird); or Double – like the Seafire you will see on your visit around the museum.

Think: Propellers. Bigger, better engines were built to power propellers that push or pull these aircraft through the sky. What do you notice about the number, shape and size of the propeller blades?

Wonder: Royal Naval aircraft have been adapted to operate from ships at sea. Why do you think it might be useful for these aircraft to have folded wings when stored on a tight, small aircraft carrier?

HALL 4

Investigate the incredible technology and aircraft that have helped shape modern Royal Navy flying. From jet engines that enable aeroplanes to travel faster than the speed of sound or vertically 'jump' up and down, to helicopters whose versatility forms the core of today's Fleet Air Arm.

G CONCORDE

See: The jet engine meant aeroplanes could fly at supersonic speeds – that's faster than the speed of sound (343 m/s)! That makes these jet aircraft faster than most of the others around the museum.

Think: Speed & Distance. Concorde was first supersonic passenger jet. When it was flying, you could have breakfast in London, and Lunch in New York! What advantages/disadvantages are there in travelling so fast?

Wonder: How do you think it feels to travel at supersonic speeds?

H HARRIER

See: The Harrier is one of the few aeroplanes which can take straight upwards and doesn't always need a runway. It has several nozzles which push air down, and the aircraft up– sort of like a giant jet pack!

Think: Shape. What shape are the wings of the supersonic aircraft in this hall, compared to the others?

Wonder: How many other aircraft can you spot in the museum with the ability to take off directly upwards?

I SEA KING

See: The Fleet Air Arm today is a predominantly helicopter force. If you look at RNAS Yeovilton from one of our viewing galleries, you will be probably see mostly Wildcat or Merlin Helicopters.

Think: Materials. Look at the section of rotor blade. What do you think it is made from?

Wonder: What other materials can you see on this Sea King Helicopter– from the Tyres to the Windows?