

# The creation of the spitfire history essay



**ASSIGN  
BUSTER**

In 1931 the Royal Air Ministry issues a specification for a new modern fighter plane, which was to be both agile in combat as well as fast, included in the specification was the requirement of a top speed of 251mph. R. J. Mitchell, chief designer at Supermarine Aviation at the time, replied to this specification with his first initial prototype 'The type 224' was a huge disappointment. After the initial reaction to this plane was received Mitchell and his design team then began to design a radical new plane, 'The type 300' this plane was also rejected. However the design team of Mitchell continued to develop the plane and added new features into the plane such as; ( The Supermarine S6B 1931 )

'An enclosed cockpit, oxygen breathing apparatus. Smaller and thinner wings and the newly developed more powerful rolls Royce PV-XII V-12 engine' (1, Wikipedia, November 3rd ). This developed design was accepted by the Air Ministry.

'On the 1st of December the Ministry issued £10, 000 for the construction of the first Spitfire and the next specification was written based on Mitchells design on January 3rd 1935. On March 5th 1936 the first prototype spitfire took its maiden voyage' (2, Wikipedia, November 3rd).

After the first test flights went well, the spitfire was then issued for manufacture. One of the biggest icons of aviation was to be placed in massed production;

'Further official trials were held in May 1936, and in June the Royal Air Force placed a production order for 310, by which time the new fighter had been dubbed the " Spitfire".' (3. Taylor, Patrick 2010)

After this initial order the Spitfires the pilots then began to there training on how to fly them, from here the Spitfire also became the plane which was loved by its pilots.

## **The Creator and Design team**

R. J Mitchell was a chief designer at Supermarine Aviation before undertaking the challenge of the Air Ministry specification. Although R. J Mitchell was influence during the prototyping of the plane and was highlighted as the creator of the spitfire he died from illness in 1937 and the project taken on by Supermarine's new Chief Designer, Joseph Smith. Mitchell never got to see the achievement that his creation would achieve. After Mitchell's untimely death Smith and the design team continued to develop the Spitfire during the Second world war and unlike other planes of this period such as the hurricane.

'Mitchell's design was so sound that the Spitfire was continually improved through the second world war whereas its contemporary, the hawker hurricane quickly became obsolete. Over 22, 000 Spitfires and derivatives were built.' (4, Wikipedia November 4th)

Mitchells design was also so robust that the spitfire was redesigned and adjusted to suit many different situations. Out of all these variations the most famous was the Seafire, This plane was adjusted to fly off airplane carriers.

'Early marks of Seafire had relatively few modifications to the standard Spitfire airframe; however cumulative front line experience meant that most

of the later versions of the Seafire had strengthened airframes, folding wings, arrestor hooks and other modifications' (5, Wikipedia, November 4th )

## **The Supermarine Spitfire**

The Supermarine spitfire is a single seating fighter aircraft that was used mainly in the British RAF. 'The Spitfire was designed as a short-range high-performance interceptor aircraft' (6, Wikipedia November 4th) in conjunction with the Hawker Hurricane they were the basis of Britons air defence against any attacks. However the Supermarine Spitfire was also used for other tasks in the RAF, these would range from interceptor, photo-reconnaissance, fighter-bomber, carrier-based fighter, and trainer. ( 7, Wikipedia, November 4th) The versatility of the spitfires design allowed this to be done.

The main event from where the Spitfire began to build its reputation as one of the greatest planes invented was during the battle of Briton off the cliffs of Dover. In the summer and autumn of 1940. (The Supermarine Spitfire in flight ) The German air force aimed attacks at factories, airfields, shipping centres such as Portsmouth were also targeted. The spitfire was one of the main reasons why the British Air forces won the Battle of Britain which highlighted it as a design icon in the future years. After the Battle Of Britain the Spitfire became the backbone of the RAF. And also saw action worldwide due to how successful and well they flew.

'As the war further progressed different versions of the spitfire were adapted for different missions and conditions. Up to 24 different variations of the spitfire were produced and 20, 351 were produced in the 10 year period in which they were manufactured from 1938 to 1948,' (8, Wikipedia, November

7th). The spitfire is the only plane that was built, before, during and after the second world war (9, EzineArticles, November 7th). All the spitfires were built to a certain specification and these could be adjusted and altered depending on the situation that the planes may face.

The spitfire helped to save a huge number of lives in the period in which it served, regardless of which mission it undertook. R. J. Mitchell and his team had designed and developed one of the solutions that helped to win the second world war for Great Britain and the allying countries.

### **The origin of the Spitfire and its production:**

The Supermarine's were assembled in the west midlands in Castle Bromwich , this factory was equipped with the most specialist equipment available so that all Supermarine's that were rolled out of this factory were flyable.

'It is estimated that this factory cost the government a total of £2, 000, 000 however by the beginning of 1939 it was believed the factory may of cost double this. By the time production had finished at Castle Bromwich a total of 12, 129 spitfires had been made'.(10, Wikipedia, November 24th).

However, the making of these planes was not the simple process in which the British government had hoped. As part of a plan to remove Britain of all its prized war resources German Luftwaffe ( The Germans version of the fighter plane during the war) attempted a vast number of air raids in hope of destroying the factories in the Southampton area. 'The two main factories here Woolston and Ichten provided the bulk of the airplane parts for the Castle Bromwich factory. On September 26th both factories were

<https://assignbuster.com/the-creation-of-the-spitfire-history-essay/>

successfully bombed and wrecked with the loss of 92 lives, and many of the experienced work force injured.' (11, Wikipedia, November 24th )

Knowing the inevitable would happen and the factories would be destroyed 6 days prior to the factories being bombed the British government dispersed and relocated many of the jigs and machinery used. The jigs and machinery were relocated to different parts of Southampton. These different parts and workshops became well known for being able to produced individual parts for the spitfire. The four most well known towns with satellite access were:

Southampton and Eastleigh

Airport Salisbury with High Post and Chattis Hill aerodromes

Trowbridge with Keevil aerodrome

Reading with Henley and Aldermaston aerodromes

(12, Wikipedia 24th November)

Without these factories the Spitfires production would not of been to the scale which it achieved. With careful guidance and supervision from the British government, who also funded the factories, the production of parts and the planes themselves were able to also avoid the attacks of the German air force.

### **What made the spitfire a design icon:**

The spitfires design is noted as the main factor to making it a globally known design icon, one of the most known points of this was the Elliptical wing design. The elliptical wing design was aimed to solve two problems that

<https://assignbuster.com/the-creation-of-the-spitfire-history-essay/>

arose during the designing of the spitfire in 1934, these problems revolved around the need for the wings to be thin, to help with manoeuvrability, as well as ensuring that it doesn't cause too much drag when the airplane is in flight. This provided a stern challenge for Mitchell and his design team with the added knowledge that the wings must be able to carry any extra ammunition and equipment. 'A feature of the wing which contributed greatly to its success was an innovative spar boom design, made up of five square tubes which fitted into each other.'(13, Wikipedia November 24th). This design allowed for incredible balance and strength in the wings. With the basis of the wings created the design team continued to test and modify during the war. They experimented with different angles of which the wings would be set at, and different tips which would be placed on the edge of the wings.

'A thin cross section on the wings allowed for a faster speed than all of the other contemporary planes at the time'(14, Wikipedia November 24th) . The RAF saw speed as the best form of defence against the attacking German Luftwaffe.

Another of the spitfires features was how easily it could be developed adjusted and changed for different missions or conditions that the RAF may need the plane for. In its lifespan 24 different variations of models based upon the Spitfire Supermarine were created due to the design being so successful in terms of flying ability. One of the main reason the spitfire gained fame was how well they flew, the pilots of the second world war adored the spitfire for this reason.

(Supermarine Spitfire in flight)

## **The influence of the creation of the Spitfire Supermarine**

The main influence behind the creation of the Spitfire was the main planes in the German air force, the Messerschmitt Bf 109E and the Luftwaffe. The British government and the RAF saw these planes as a huge threat to Britain and a threat which the Hurricane (The British fighter plane before the spitfire) could not handle on its own.

After issuing a specification on a new fighter plane , the British Government gave the engineers and designers of Britain the chance to provide a solution. Which R. J. Mitchell took up and created the spitfire it was a huge leap for British aviation design. The Supermarine type 224 was the first plane and design that Mitchell submitted to the British government. Although this design failed and disappointed it was the basis of the Supermarine Spitfire. After many 'Cleaned up designs' and alterations the improved Supermarine Spitfire was accepted by the British governments and was then placed under test flying after an initial trial order was established.

There was no previous plane that the spitfire based its design upon, it was designed by Mitchell and his team from the beginning until the first successful test flight and the further developments during the war, Although Mitchell was not to see his creation fly as he died during the testing process in 1937.

## **What influence the Spitfire had on design.**

From the Spitfires initial design it helped to influence aviation in a whole new way. Many different variations of the Spitfire were created by the RAF for

<https://assignbuster.com/the-creation-of-the-spitfire-history-essay/>



different missions and conditions. After the war had come to an end the spitfires were still placed into production as RAF's across the world used spitfires as there signature planes until they were placed out of service. The Spitfire also placed belief that British design was able of achieving great things and after the war the world of design took an upwards spiral due to belief in the designers of Britain.

The influence of the Spitfire in terms of aviation was also notable, aviation designers paid more attention to the balance and handling of the plane, one notable factor was most aviation designers copied the spitfires wing pattern to increase both speed and stability. The influence of the spitfire was huge as it became a national and worldwide icon it helped aviation to reach new levels and develop further and faster than ever before. Due to the spitfire planes designers could place planes onto air craft carriers which could be designed to withstand long haul flights and carry the needed fuel. The 'Seafire' was an example to this.

Conclusion: