



HEDY LAMARR

For anybody who uses a games console, computer or phone, life without Wi-Fi would be unthinkable. We have Hedy Lamarr, a Hollywood star of the 1940s and 50s, to thank for them.

In the mid-20th century, Hedy Lamarr was one of the most famous people on Earth. Her acting talent, charisma and good looks made her one of the brightest stars in Hollywood. Lamarr's appearance in *Samson and Delilah* was one of the reasons it became the biggest film of 1950. Acting, however, was only a part of her brilliance. Lamarr was also an inventor. Her love of technology led her to design something that has shaped our world today.

Lamarr was born Hedwig Kiesler, to Jewish parents, in 1914 in Austria's capital, Vienna. She was still a teenager when her acting career took off in Europe, but by 1937 she was ready to leave her home country. The Nazi party, led by Adolf Hitler, had taken power in Germany, and Europe became unsafe for Jewish people. Not only that, but her husband at the time was a controlling bully. Fed up, she disguised herself as a maid and fled to Paris, and from there to the US, where stardom awaited.

From 1939 to 1945, the Second World War raged. Like many, Lamarr wanted to contribute to the war effort. She knew that the US navy faced trouble and that its torpedoes, used to sink German ships and submarines, had problems. The Germans were easily able to block the radio signals that directed the torpedoes, and send them off course.

Lamarr's idea was to create a system that meant that, instead of controlling the torpedoes on a single frequency (which could easily be blocked), the US navy would use constantly shifting radio frequencies. That way, the Germans would never be able to lock onto the torpedoes – and the US would be able to hit its targets.

Alongside a composer called George Antheil, whose experimental music used a method of keeping instruments in sync, just like the technology they set out to design, Lamarr made a breakthrough. Unfortunately at the time, the US navy didn't appreciate the value of Lamarr's ingenious idea, but by 1962 the navy had made use of it – and, of course, it worked beautifully.

Genius ideas



A still from *Bombshell*, a film about Lamarr's life.

Every day, we use the technology that Hedy Lamarr helped develop. Her special, coded technique for shifting radio frequencies has become crucial for its application in technologies such as Bluetooth and Wi-Fi. Satellite navigation systems and mobile phones both rely on her invention. Lamarr also redesigned aeroplane wings to increase the speed at which an aircraft could fly. Howard Hughes, a millionaire businessman, engineer and keen pilot, turned to her when he wanted to make his planes faster.

Noting that the wings on Hughes's planes were "too square", Lamarr redesigned them based on ideas she took from the natural world – birds' wings and fish fins. "You're a genius!" Hughes told her.

Lamarr didn't see the recognition she was due for her invention until much later in her life, when she received various awards for her work, including, in 1997 – when she was in her 80s –

the Bulbue Gness Spirit of Achievement Award, regarded as the inventor's equivalent of an Oscar.

Her career as an actor, meanwhile, earned her a star on Hollywood's Walk of Fame. Today, Lamarr's invention has become an essential part of modern technology – and she's finally getting the credit she has always deserved.

ON THE MONEY

In 2009, a study found that the total value of all the things that use Lamarr's invention was around £124 billion. It will be much more than that today.

FAMOUS FACE
Lamarr's great beauty was the inspiration for Disney's Snow White and DC Comics' Catwoman. However, she resented being famous for her good looks, saying, "My face has been my misfortune."

