

Hedy Lamarr

By Stella Crouch

Hedy Lamarr was an Austrian-American actress and inventor who pioneered the technology that would one day form the basis for today's WiFi, GPS, and Bluetooth communication systems. However like many women before and after her she is not credited or remembered for all that she did especially as an inventor, a field that rarely allowed women in the door. Chances are if you have heard of her you think of her as an actress and a sex symbol and icon in the 1930s and 1940s, and while that is a salient part of her life and something that needs to be recognized her an analysed so does her passion for and contributions to inventing.

Lamarr was originally Hedwig Eva Kiesler, born in Vienna, Austria on November 9th, 1914 into a wealthy Jewish family. She was an only child who would later be described as displaying an "unusual amount of curiosity for a girl". Her mother, Gertrud known as Trude to those close to her, was a concert pianist born in Budapest in 1894 to a Hungarian-Jewish family. Her father, Emil, was a bank director at the Creditanstalt-Bankverein, a company that still exists today. Emil was born into a Galician-Jewish family in Lemberg (now Lviv, Ukraine) in 1880. Emil would later take Hedy on long walks where he would explain to her how different machines such as printing presses, engines, street cars and telephones worked. These conversations guided Lamarr's thinking and at only 5 years of age, she could be found taking apart and reassembling her music box to understand how the machine operated. At the same time Lamarr's mother introduced her to the arts, placing her in ballet and piano classes from a young age as well as taking her to art galleries in their area.

Lamarr continued to grow her curiosity and understanding of technology despite having no formal education in any field related to technology or inventing. Even though she received an "elite" private education STEM was covered very little for girls during this time, a gap in education that we have still not filled with girls being less likely to receive comprehensive STEM education and when they are, they are less likely to be encouraged to pursue it by their teachers and community than boys.

After the Anschluss, she helped get her mother, Gertrud, out of Austria and to the United States. Gertrud Kiesler later became an American citizen. (Despite her conversion to Catholicism, Gertrud Kiesler put "Hebrew" as her race on her petition for naturalization, a term that had been frequently used in Europe.) One of Hedy's paternal aunts, Frimet Pines, died at Theresienstadt, a hybrid concentration camp and ghetto, during the Holocaust. The fate of many other of her family members is unknown however they most likely died in ghettos and concentration camps under Nazi Germany.

At age 12 she was listed in a beauty contest in Vienna in which she won. Lamarr's brilliant mind was ignored, and her beauty took center stage when she was "discovered" by director Max Reinhardt at the age of 16. She studied acting with Reinhardt in Berlin and was in her first small film role by 1930. She would later see her time in Berlin during the interwar period before Hitler's appointment as Supreme Chancellor as a major awakening to social disparities and bigotry as well as progressive new movements and philosophies.

Hedy Lamarr gained widespread recognition at 18 for her 1933 role in *Ecstasy*. She was still working under her maiden name being credited as Hedy Kiesler. The film is about a young woman who marries a wealthy but much older man. After abandoning her brief passionless marriage, she meets a young virile engineer who becomes her lover. *Ecstasy* was filmed in three language versions, German, Czech, and French. It is believed to have been the first non-pornographic film to portray sex and a woman orgasming, although never showing more than the actors faces during the scene. The film also has brief sequences of full frontal nudity and nude swimming scenes although after the film's release it was reported that she had been “duped” by the director and producer not telling her of the scenes until right before the scenes were shot. While the film did push many boundaries it was not immune to sexism and it is important to note that Lamarr might not have consented to parts or any of the nude and sex scenes.

Although Lamarr was dismayed and now disillusioned about taking other roles, *Ecstasy* gained world recognition after winning an award in Rome. Throughout Europe, the film was regarded as an artistic work. However, in the United States, it was completely banned, citing its “overly sexual nature”. The film was made the target of negative publicity, especially among women's organizations that saw a woman being sexual in any way as going against women's rights. The film was also banned in Nazi Germany, justified by Kiesler's Jewish heritage. It was not until 1935, after significant cuts were made by the Nazis, that the film was shown under turmoil in a few German cinemas, with the warning: "This film offends the youth."

Lamarr played a series of roles in plays after the making of *Ecstasy*. The most notable of these plays was *Sissy*. Fans would send flowers to her dressing room and would try incessantly to get into her dressing room. Austrian munitions dealer, Fritz Mandl, became one of Lamarr's fans during her role in *Sissy*. She sent all of her male fans away, including an insistent Friedrich Mandl. Lamarr and Mandl married in 1933 but it was short-lived. Mandl was an arms merchant and munitions manufacturer who was reputedly the third-richest man in Austria. Her parents did not approve because of his links and business dealings with nazi's and fasists. Lamarr once said, “I knew very soon that I could never be an actress while I was his wife ... He was the absolute monarch in his marriage ... I was like a doll. I was like a thing, some object of art which had to be guarded—and imprisoned—having no mind, no life of its own.” During their short relationship Mandl reportedly spent over \$300,000 buying up and destroying copies of the film in an attempt to get rid of every copy which did not work as it survives today. She was incredibly unhappy, as she was forced to play host and smile on demand amongst Mandl's friends and business partners, many of whom were apart of the Nazi party. She escaped from Mandl in 1937 by fleeing to London and took with her the knowledge gained from dinner-table conversation over wartime weaponry.

After arriving in London in 1937, she met Louis B. Mayer, head of MGM, who was scouting for talent in Europe. She initially turned down the offer he made her for \$125 a week. She instead booked herself onto the same New York-bound liner as he. During the trip, she impressed him enough to secure a \$500 a week contract. Mayer persuaded her to change her name from Hedwig Kiesler to distance herself from "the *Ecstasy* lady" reputation associated with it. She chose the surname "Lamarr" in homage to the beautiful silent film star, Barbara La Marr,

on the suggestion of Mayer's wife, Margaret Shenberg. Lamarr was often told during this period and beyond by people in the film industry that she should hide her “tinkering” as it would make her seem less attractive.

In Hollywood, Lamarr was introduced to a variety of prominent people, such as businessman and pilot Howard Hughes. Lamarr dated Hughes but was most notably interested with his desire for innovation. Her scientific mind had been bottled-up by Hollywood but Hughes helped to fuel the innovator in Lamarr, giving her a small set of equipment to use in her trailer on set in between takes. Hughes took her to his airplane factories, showed her how the planes were built, and introduced her to the scientists behind the process. Lamarr was inspired to innovate as Hughes wanted to create faster planes that could be sold to the US military for the “next war”.

After going to these factories she bought a book of fish and a book of birds and looked at the fastest of each animal. She combined the fins of the fastest fish and the wings of the fastest bird to sketch a new wing design for Hughes’ planes to which he was very impressed. She once said, “Improving things comes naturally to me.” She went on to create an upgraded stoplight and a tablet that dissolved in water to make a soda similar to Coca-Cola.

In 1940 Lamarr met George Antheil at a dinner party. Known for his writing and film scores he shared the same love for inventing and science as Lamarr. She and Antheil talked about a variety of topics but of their greatest concerns was the looming war. Antheil recalled, “Hedy said that she did not feel very comfortable, sitting there in Hollywood and making lots of money when things were in such a state.” She was able to put her knowledge on axis powers, munitions and weapons to use. Lamarr learned that radio-controlled torpedoes, an emerging technology in naval war, could easily be jammed and set off course. The system she discovered involved the use of “frequency hopping” amongst radio waves, with both transmitter and receiver hopping to new frequencies together.

After its creation, Lamarr and Antheil sought a patent and military support for the invention. While awarded U.S. Patent No. 2,292,387 in August of 1942, the Navy decided against the implementation of the new system. The rejection led Lamarr to instead support the war efforts with her celebrity by selling war bonds. She continued to act after the war and became an American citizen in 1953.

Meanwhile, Lamarr’s patent expired before she ever saw a penny from it. While she continued to accumulate credits in films until 1958, her inventive genius was yet to be recognized by the public. It wasn’t until Lamarr’s old age that she received any awards for her invention, even then making little off of the small bit of recognition she did receive. Despite her extensive work in engineering and technology few associate her name with science or her inventions. She has more recently been called the “mother of wifi and bluetooth” as both would not exist today without her work. Like countless other women around the world she was not and continues to not be recognized for all that she contributed to the world, instead focusing heavily on her looks and the men around her. Until the day comes that women are given credit for their work, paid equally, do not experience increased rates of violence, are represented as full

dimensional people we must fight to keep women's stories alive, past and present including the brilliant, creative and innovative Hedy Lamarr.

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