

Hedy lamarr



**ASSIGN
BUSTER**

Now I wish to talk about barriers that women amateurs face in working in science and technology. Lamarr is a great example of how an amateur can both overcome and be stopped by barriers. Just a little background info, Hedy Lamarr was an Austrian -American actress who was also known to be the most beautiful woman in Hollywood in her time. You might think what does she have to do with what have been said before this. Well, she was the brains who basically started it all, the spread-spectrum technology which enabled Wi-Fi and cellular networks to be available to us today!

Lamarr knew about a real problem. It was during World War 2 when she thought, how can one safely control a torpedo with a radio signal? This was important, since torpedoes were not very accurate and the ability to remotely control them could be immensely valuable. The difficulty in using a radio signal to control a torpedo is essentially the problem of jamming. If you tried to control your torpedo by a signal, eventually the enemy will find out the frequency you are using.

Once this is known they could jam your control signal by putting out a strong noise signal on the given frequency. Lamarr had a solution. Her brilliant idea was to use frequency hopping—her invention. Lamarr also found a co-inventor, George Antheil, who was also an avant-garde composer, who laid out a system based on 88 frequencies, corresponding to the number of keys on a piano, using perforated paper rolls which would turn in sync with one another, transmitting and receiving ever-changing frequencies, preventing interception and jamming.

They then submitted the frequency hopping device to the national inventors council where they went on to file a patent application. Unfortunately, she

did not succeed to release this idea to help during the war. There were other priorities faced by the US military, along with the decreasing number of resources that were being used to make other equipments and atomic bombs. Also, she isnt your usual inventor. Who would believe a Hollywood actress could help invent something useful for the war? Furthermore, she was ahead of technology.

Spread-spectrum requires a fairly powerful digital computational ability. The technology that was available in 1940? s was very crude, and it is likely that it was essentially impossible to make her ideas work. BUT twenty years after its conceptualization, during the Cuban missile crisis, the first instance of large-scale military deployment of Lamarr and Antheil's frequency hopping technology was implemented-- not for the remote-controlled guidance of torpedoes, but to provide secure communications among the ships involved in the naval blockade.

Lamarr's brilliant idea is used today in wireless communication. Not exactly as she envisioned in her original patented work, but nevertheless in ways that are clearly traceable to her ideas. Lamarr eventually got the recognition she deserved but 3 years before her death. She and her co-inventor Antheil won the 1997 Electronic Frontier Foundation Pioneer Award. She also won the BULBIE that is called the " Oscar" of inventing. Hedy Lamarr had proved to being more than just a " pretty face". My resources: <http://rjlipton.wordpress.com/2010/07/25/hedy-lamarr-the-inventor/>