



The

Broadcasters' Desktop Resource

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... edited by Barry Mishkind – the Eclectic Engineer

George Frese

A prolific broadcast consulting engineer and inventor, George Frese passed away on November 23, 2018. He was 97 years old.



George Melvin Frese

June 5, 1921 - November 23, 2018

George was born June 5, 1921 in Spokane, Washington to Fred and Sadie (Penner) Frese. His father was a police officer in Spokane. After he graduated from high school, he went to Washington State University at Pullman, graduating with a Bachelor of Science degree in Electrical Engineering.

While growing up, George got hooked listening to a crystal radio that his mother had. Listening to KDKA, his interest grew as he discovered he could stations from all over the country. This led him to devote his life to learning as much as he could about broadcasting, from building crystal sets as early as age four to designing some of the most advanced audio processing and transmission systems that still stands to this day.

While still in middle school he learned how to make records, even putting himself though college by making records of various people singing or playing instruments – later doing the recordings needed by the college radio station. His interest in radio led him to get his amateur license. An active Ham, he active all of his life, his “Extra” license was AA7H.

THE AIRPLANE DETECTOR

By the time he was in junior high school, George was able to build shortwave receivers and, using the VHF transmitters he built, developed an early radar system with which he could locate and track the speed and direction of airplanes.

He called it “The Airplane Detector.” Although he freely offered his invention to the US and UK governments, after a visit from the FBI the technology quickly disappeared into military testing secrecy.

While in college, George met his first wife Mollie. He then entered the Army, and was sent to Officers’

Candidate School. His military service took him to Europe and work on communications systems, which was the source of his 1946 book *Lost History and a Bizarre Mystery*.

BROADCASTING

After his Army stint, George worked for KPQ as a radio engineer. Then he ventured out on his own, becoming a sought after engineering consultant for radio and television stations around the country. In 1961, George married Rosemary (Crimmins), which lasted over 56 years.

Perhaps George is best known in broadcast for his audio processing invention: the [Frese Audio Pilot](#), was acknowledged as among the best audio processors of the time, noted for clean, high modulation which made stations stand out on the dial – as much as 200% with asymmetry! Among the stations using the Audio Pilot were KMPC in Los Angeles, KMBY Monterey CA, KWIP Dallas OR, and KQV in Pittsburgh. According to Eric Norberg, the effect of the Audio Pilot included a literal doubling of the antenna current.

Competitors in the same market simply were unable to match it. Eventually, the FCC added a rule, limiting modulation to 125%

PARAN ANTENNA

In the 1980's, George developed several solutions for antenna issues.

At KWIP in Dallas, Oregon, George adapted a folded unipole, using a top-hat, in order to meet the FCC's minimum field strength. Norberg states that, after they proved to the FCC that it was truly non-directional, it was the first folded dipole with a top hat ever licensed.

Another one-of-a-kind antenna from the brilliant George Frese: in order to build a site for KAPS to achieve night time operation in Aberdeen, Washington where the towers were limited to 110 feet due to local laws, he adapted a shortwave tower system he developed, a Parapanel. It became what he called a "Paran" antenna, with four 110-foot grounded, star-fed towers in a box shape. It still is working to this day – and with virtually no skywave at all!

As he was a humble man, it is interesting to note that George never bothered to patent his inventions.

A GOOD FAMILY MAN

George truly cared about his family and friends. He worried about them and he prayed for them. Once he once gave Rosemary 100 numbered greeting cards, placed around the house as an apology.

George is survived by his son Glen Frese (Sue), daughters Joan Frese Lazarus (Jonathan), Suzette Frese Harkin (John), Lorene Frese Woody (Mike), step-son Richard Jacobsen, step-daughters Laurel Jacobsen Fife (Jim) and Linda Jacobsen Stuart and his first grandchild Tami Jacobsen Gurnard (Joe), who he raised as his own. He also is survived by numerous grandchildren, great grandchildren and treasured friends.

George was preceded in death by his father Frederick, his mother Sadie, his sister Shirley Frese Woods, and his beloved wife Rosemary.

IN HIS OWN WORDS

Thanks to his grandson, it is possible to hear a lot more about George's interesting life in his own words. A three-hour compilation is [on YouTube](#).

We are thankful for the kind assistance of Eric Norberg and Phillip Davies in preparing this obituary.

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