



The AMA History Project Presents: Biography of FRANK KAGELE

Born February 2, 1936



Written by JM (04/2011); Transcribed by JS (04/2011)

The following information was written and submitted to the AMA History Project (at the time called the AMA History Program) by Jay Mendoza.

Frank Kagele and Gordon Larson met at Babcock Models in Newport Beach California where they both worked in 1960. Together they conspired to build a proportional multi-channel radio. Their design worked, but the servos were too crude to sustain a motor powered flight. They contacted Howard Bonner to have him make them some special versions of his Duramite servo with a feedback resistor built-in. Bonner, along with Al Doig, visited with Kagele and Larson to see a demonstration of their proportional radio system. They purchased the rights to the design and arranged for them to continue developing it at a secret location in the evenings.

After a short period, he flew the prototype radio successfully in his *Smog Hog* at Orange County fairgrounds in Costa Mesa, California. The plane crashed, hitting a telephone wire on approach, but the radio performed flawlessly. He then took the radio design drawings to Bob Eliot, who designed the Transmite circuit, to look over the encoder/decoder scheme devised by Kagele and Larson, and tried to come up with his own version.

Kagele and Larson continued developing the radio system design and by late 1963, they had what was soon to become known as the Bonner Digimite 8. It was a benchmark radio system and a milestone in Radio Control.

A 4-channel version followed, called the Digimite 4. By 1964, Bonner had produced 60 pre-production systems that were given to selected flyers around the country for evaluation and testing. Frank Kagele and Gordon Larson also received complete systems, as this was part of their deal with Howard Bonner.

Kagele and Larson both quit Babcock Models to work full time at Bonner's plant in Culver City, California. They went on to develop a smaller version of the Digimite called the 4RS and 6RS. The receiver was the first of its type to ever use integrated circuits and was the smallest on the market in 1966. The servos were made smaller by use of injection molding and a patented harmonic drive system, which eliminated most of the gears.

By 1969, Howard Bonner's health deteriorated and he sold the off his interests and stock in all the Bonner Digimite radios to Gordon Larson. Larson continued to make them under the name of Larson Electronics in Orange, California. At this time, Frank Kagele moved to another job not related to the hobby industry.

Frank Kagele and Gordon Larsen's outstanding achievements and contributions to the development of one of the first modern Digital Proportional radios deserve recognition.

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