



Arthur A. Collins

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1909–1987

By J. S. Kilbey

Arthur A. Collins, founder of Collins Radio and A. A. Collins, Inc. died in Dallas, Texas, on February 25, 1987, after suffering a stroke. He was seventy-seven.

Collins was born in Kingfisher, Oklahoma, on September 9, 1909. His father, a large-scale farm operator, soon moved the family to Cedar Rapids, Iowa. His interest in radio began at an early age, and by the time he was nine he had built his first crystal receiver, using the traditional Quaker Oats box as a coil form.

At the age of fourteen, Collins had passed the test as an amateur radio operator and was licensed as 9CXX. The hobby was encouraged by his father, and Collins built a complete transmitter and receiver. Working the amateur 20-meter band, he contacted other "hams" around the world.

In 1925 the McMillan expedition sailed on a scientific mission to Greenland. One of the explorers was U.S. Navy Commander Richard E. Byrd. The expedition had planned to make daily contact with a U.S. naval station in Washington, but because of atmospheric conditions the station was unable to receive the messages consistently. Collins was able to establish regular contact with the expedition. Each night after the broadcast, young Collins took the messages downtown and relayed by telegraph the expedition report for the day. Collins attracted national attention for this feat.

By the end of 1931 he had set up a shop to manufacture radio transmitters. Collins designed the circuits; fabricated chassis; mounted and wired the components; and tested, packed, and shipped each unit. The equipment was well engineered and well built, and gave years of trouble-free service. The Collins Radio Company was incorporated in 1933.

In 1930 Richard E. Byrd, now a rear admiral, sailed for the Antarctic on his first expedition to the South Pole. Byrd remembered Collins from the 1925 expedition and insisted on Collins radio telegraph equipment. Communications were successfully established, so for the 1933 expedition Byrd decided to use Collins equipment for voice radio communications. This effort was supported by CBS, which sold the time to General Electric. A successful commercial broadcast was made in 1934, and later regular weekly broadcasts were established. This equipment used ideas that were later widely adopted in the radio field. These included multiple pretuned frequency bays, which allowed the operator to make quick frequency changes, and Class B modulation, which permitted large audio power from relatively small tubes.

These innovations were the first of many for Collins. The need for quick frequency changes, particularly for aircraft radio, led to the development of the autotune, an electromechanical system that permitted selection of ten pretuned frequencies at the touch of a dial.

By 1940 Collins Radio had grown steadily and employed 150 people, building fixed-base communications equipment, mobile radios for the police, and aircraft radios. Collins was selected by the navy as a supplier of airborne equipment for the war effort, and designed the AN\ART-13. Because it used the auto-tune feature, it could be remotely located in the aircraft and eliminated the need for a radio operator. More than ninety thousand of these sets were supplied by Collins during the war to all of the U.S. armed forces and to the British. Other types of communication and direction-finding equipment were also supplied. Because Collins equipment was unique, Collins also assisted others in its manufacture. By the end of the war, Collins employment reached 3,332.

Although the end of the war caused a rapid cutback and several years of losses for Collins, the company continued as a major supplier of military communications equipment. It also rapidly reentered commercial markets. A licensed pilot, Collins returned to Cedar Rapids after a visit to Beech Aircraft with an idea for a new product. A quick survey of the possibilities indicated that a commercial airborne radio could be built with components that the company had on hand. Ten minutes later the project was assigned, carrying "A.A.C." (Arthur A. Collins) priority in the shop. Rough sketches were used in lieu of drawings, and chassis construction used paper templates with the layout drawn on the paper. Parts were arranged on the chassis and holes drilled as required.

Ten days after its inception, the model and remote control box were completed and tested. The 17E-2 was ready for installation in a twin-engine or large single-engine airplane. During the next week, inquiries about the transmitter by those who saw the model indicated the need for the 17E-2. The first production run was for two hundred units. This early effort led Collins Radio to a dominant position in the commercial avionics marketplace.

This hands-on effort was a typical Art Collins engineering approach. Later, for larger projects, he would have a large room cleared of all telephones. Desks for the marketing staff, design engineers, manufacturing engineers, purchasing people, and Collins would be installed. All would work together until the project was complete. Today this technique would be called concurrent engineering. It was a standard practice at Collins Radio more than twenty years ago.

The rapid demobilization after the Vietnam War caused severe economic pressures for Collins Radio, and in 1973 Collins decided to merge his company with Rockwell International. Collins stayed with the new company for several months, then left to start a small new venture, A. A. Collins, Inc.

This company permitted Collins to explore some of his ideas on digital switching of communications networks. Collins felt that the space division approach used by the Bell System could be improved by changing to a time division approach, which could be implemented readily with modern electronic technol

ogy. He built a small group of skilled engineers to rethink the problem. Collins's death precluded exploitation of his ideas, although eight patents resulted from the work. The last of these was issued after his death.

Collins was one of the early high-tech entrepreneurs. He possessed a broad vision and keen technical insight combined with the stubborn persistence needed to develop major new markets. He was a true engineer, directly involved in the research and development activities of his companies throughout his life. He led Collins Radio to a preeminent position in modern communications technology. Arthur Collins was elected a member of the National Academy of Engineering in 1968. Although reticent, he was warm, friendly, and always interested in new ideas. He will be missed.

