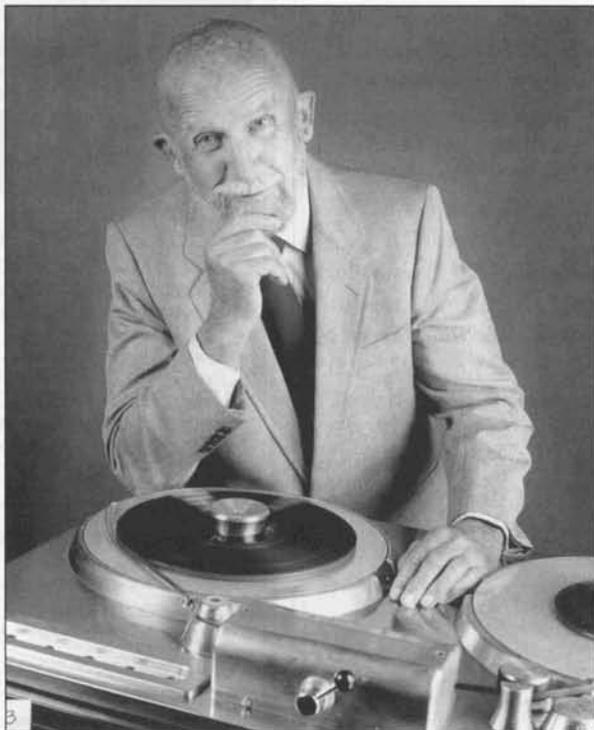


# In Memoriam



Jack Mullin with Ampex Model 200, which revolutionized the entertainment and information industries.

**J**ohn T. (Jack) Mullin, audio and video engineer, and honorary AES member, died of heart failure on Thursday, June 24, at his home in Camarillo, California, at the age of 85. Mullin introduced America to high-fidelity magnetic tape recording and helped create the postwar standards for the technology.

Born in 1913 in San Francisco, CA, Mullin graduated from Santa Clara University with a major in electrical engineering, a career choice that would propel him into the role of important catalyst in the development of postwar entertainment technology. Stationed in England during World War II, Mullin worked on Allied radar and other electronics. In his lab at night, he sometimes listened to German radio, the only classical music on the air. The performances sounded live, with none of the telltale noise of the 16-inch transcription discs—33½ and 78 r/min records—that were the norm in American

broadcasting. Mullin reasoned the Germans had some kind of outstanding, new recording technology.

In Paris, starting in the late summer of 1944, Mullin's mission was to examine captured German electronic equipment and report to the Signal Corps and to Allied Intelligence. A year later, just after the war ended, Mullin visited a studio in Germany occupied by the Allies and was shown the source of those high-fidelity recorded nighttime broadcasts he had heard in England: the AEG Magnetophon K-4 studio tape machines with AC bias in the record circuit, the key to its great quality. Mullin filed extensive reports with Army and Allied engineers. He also obtained official permission to send home two of the German transports, head assemblies, and 50 reels of I. G. Farben (BASF and Agfa) Type L blank tape for his own postwar use. He later designed and built his own electronics in his San Francisco home.

Just after World War II, Mullin introduced Bing Crosby to tape recording, a move that boosted the performer's career. Working with Bing Crosby Enterprises, U.S. broadcasters, and manufacturers, including Ampex in Redwood City, Mullin was instrumental in helping launch high-quality audio magnetic tape recording in America. He also built the first successful prototype of a video tape recorder (VTR), which led to the commercial VTR for television broadcasters, the forerunner of today's consumer VCR.

In 1946, Mullin redesigned and improved his two German Magnetophons with financial and mechanical engineering assistance from his partner, W. A. Palmer, a pioneer filmmaker. Mullin and Palmer created new methods for producing high-fidelity sound on 16-mm film using "wild" (unsynchronized) magnetic tape, a first in the U.S. The Mullin-Palmer Magnetophons were used to produce the first American commercial entertainment disc professionally mastered on tape, "Songs by Merv Griffin," released in 1946. The first public demonstration of hi-fi tape, on May 16, 1946 in San Francisco, stunned the audience of engineers, who could not believe they were not hearing live music.

As word spread during 1946, American film, recording, and radio executives began to consider adopting tape since the new medium was far superior to the methods of transcription disc and optical-film recording. The 16-inch discs sounded so bad that most programs were live, with recorded shows forbidden on most networks.

In 1946, fledgling ABC Radio Network, desperate for big-name talent, invited megastar Bing Crosby to record his show on the transcription discs. Crosby hated live radio—two shows a week, for each coast—and liked the more relaxed studio environment. But the "Philco Radio Time" on ABC sounded awful, and the ratings plummeted. Bing threatened to quit radio. Mullin was hired in the summer of 1947 to record and edit the

show on his two machines. The ratings immediately shot up, with listeners convinced Bing was performing live again. The now-hit show remained tape-delayed, setting a precedent in broadcast production that remains the norm to this day. Mullin's tape machines liberated performers and producers. Thanks to the seeming miracle of scissors-and-tape editing, the engineer was able to cut out the bloopers that had terrified a generation of live radio performers. The entertainer and his producers were amazed by this sleight of hand.

Mullin's two prototype machines proved the feasibility of the new tape technology to Ampex Corporation, a small northern California company that audaciously decided to become the first American manufacturer of the radically new German invention. Ampex went on to design and build America's first professional high-fidelity audio tape recorder, the Model 200, which was used in Hollywood, Chicago, and New York on all the radio networks in the spring of 1948 for producing and time-delaying shows. They used the newly developed 3M Scotch #111 tape that replaced Mullin's dwindling supply of German Type L tape.

That same year, other American manufacturers began building commercial audio tape machines for both professional and consumer use. Mullin's pioneering work became the basis for many recording industry standards, including the famous NAB equalization curve still in use for analog studio recording.

Mullin pioneered the use of magnetic tape in data and instrumentation recording. His 1949 data tape installation of a modified Ampex Model 300 audio recorder at the Point Mugu Naval Air Station and at Edwards Air Force Base, both in southern California, revolutionized data gathering for both military and civilian applications. Since then, aerospace and other industries, as well as the military and government, have depended heavily on tape to record instrumentation data for operations, research, and development.

photos courtesy of Eve Mullin Collier



Mullin in an ABC radio network control room with the only two "portable" Ampex Model 200 tape machines ever built (in oak cases on the left). On the right, early portable Model 300 (black case). The Model 200s replaced Mullin's two, well-worn modified AES Magnetophones that put Bing Crosby on tape in 1947.

Bing Crosby sold his electronics lab to 3M in 1956, which led to the creation of the Camarillo-based 3M Mincom electronics division, a maker of military and civilian data recorders and later professional and consumer audio machines. Mullin was Mincom's chief engineer until his retirement in 1975, when he began a second career of voluntary teaching, writing, and lecturing, in addition to helping Recording for the Blind and Dyslexic. He voiced over 2000 hours of books on tape that now reside in their national library in Princeton, NJ, and are still nationally distributed to the sight-impaired.

Mullin was a long-time member of the AES, which honored him with its Silver Medal in 1994, the Emile Berliner Award, and a citation in 1975. He was an elected member of the 3M Carlton Society. His love of classical music and support of public radio led to his work as a volunteer engineer and on-air talent at KCPB-FM in Thousand Oaks, CA, and at KZYX-FM in Philo, CA. His voice was well known to local public radio audiences, who heard him play his favorite classical music and offer his views on the art of music and the history of recording.

Among his many friends and col-

leagues, Jack will be remembered most for his openness, kindness, and generosity. Those qualities allowed him to share his "secret" of high-fidelity tape to everyone who would listen. He was a gentlemen in the truest sense of the word. Jack was always willing to take time to talk to anyone about what he knew. His immense talent for electrical design and his thorough knowledge of electronics theory benefitted colleagues, students, friends, and convention audiences.

His collection of antique radios, microphones, record players, tape recorders, and documentation was shown at the AES Convention in Los Angeles in 1988. A video of Mullin reminiscing about his life and the history of our industry produced at that convention shows his collection. This video, "An Afternoon with Jack Mullin" is available from AES Headquarters in New York. Ten years ago Mullin turned over the collection to the Pavek Museum of Broadcasting in St. Louis Park, Minnesota, near St. Paul, some of which is always on display.

Mullin is survived by two sons, John of Los Osos, CA, and Peter of Huntington Beach, CA, and a daughter, Eve Collier of Camarillo, CA.

Peter Hammar  
San Carlos, CA