In Memoriam

Richard C. Heyser
1931–1987

On 1987 March 14, Richard C. Heyser died after a short but valiant battle against cancer. His vast contribution to the industry at large and the AES in particular is described in his biography. But the personal loss to those who were fortunate enough to know him is better told in the following comments from some of his many friends and colleagues in and out of the audio world:

A TRANSFORM

Isaac Newton said, "I do not know what I may appear to the world; but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."

One of God's great gifts to man are the boys who play on the seashore and are able to uncover rare gems of truth. Dick Heyser was one such who with boyish enthusiasm touched all of us in the audio industry.

Driven by the magic of "Aha!," Dick would share the latest gem with us. Immeasurably patient with our frequently puzzled responses, he would expose facet after facet of the jewel till we would catch a glimmer of the jewel's fire.

Such is the nature of truly creative genius. Truth is beauty and we will miss you, Dick. Yes, I will miss you.

GERALD R. STANLEY
Crown International

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Thinking back over the years of our friendship the impression that first surfaces in the memory is of his generous spirit and almost boyish enthusiasm for all things. He was always bringing conversation to some unexpected focus whether on personal affairs or scientific matters.

He was a lively committee member and frequently enlivened otherwise dull meetings with his asides and penetrating questions. His interests ranged over so many fields. A genuine polymath—there is scarcely

any subject on which he could not offer informed comment and his viewpoint was usually refreshingly different. During a private dinner in Las Vegas in 1984 we discussed unusual books, and I left the table with a sizable list of obligatory purchases which included *Mrs. Byrne's Dictionary of Unusual Words*.

Dick loved anecdotal humor with which he could incise any discussion and, like W. S. Gilbert, he was often amused by our topsy-turvy world. A favorite story was his own condensed version of The Shareholders' Meeting in which he recalled Zasu Pitts's definitive performance. But it was in the field of audio that he chose to make his most significant contribution to the understanding of the complex factors which determine the quality of sound reproduction. Like all great minds he saw the problems as inherently simple, requiring only a rare imagination and elaborate instrumentation for their solution. His work covered a period of at least 30 years and he still had much to give when he was so tragically cut down. Some of his theories were still maturing at the time of his death. We shall never know the full extent of his loss and where his insight might ultimately have led us.

RAYMOND E. COOKE
KEF Electronics Ltd.

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It has been an outstanding privilege to have known Dick Heyser. I met Dick for the first time about 10 years ago and was immediately turned into an enthusiastic admirer of him and his fantastic ideas. During several electroacoustic seminars in the late 1970s with Dick as a very inspiring guest speaker, the idea to build a TDS system around an analyzer matured. After that our relationship with Dick developed continually, and his ideas were further discussed during a number of visits to Brüel & Kjaer in Denmark. Like all original thinking, TDS had its skeptics, but Dick's enormous patience in explaining the theory over and over again till it was understood is legend. We have long since started an irreversible process based on Dick's work. It is sad, though, that he will not be able to see all the results of his ideas, which will materialize in substantial ways in the coming years.

We have lost a very dear friend and colleague.

PER V. BRÜEL
Brüel & Kjaer

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The amazing thing about Dick Heyser was that his interest spanned the range of technology, from the most practical of electronics and acoustics to the most fundamental philosophy of how we make observations of physical phenomena. His Principle of Alternatives, his view of how nature is describable in an infinity of equally valid alternative frames of reference, led him to rethink contemporary analysis. The required mathematics that his principle dictated was the underpinning of his TDS theory and impacts contemporary physical thought in general. His great love of acoustics allowed him to use his theory to derive measurable quantities which verified his concepts. The validity of the concepts are being attested to at the most practical level by the growing number of users of commercial products based on TDS.

On a personal note, Dick was a Renaissance man in my eyes. He was a boy genius until the day he died. He questioned everything, had to understand everything, and knew so much about everything. He delighted all who surrounded him with his ingenuousness, his ingenuity, his kindness, and his modesty.

Illustrative of the man is the story he told me, two weeks before he died, of one of his earliest memories. He recalled being an infant in a pram which had a little window in the hood and looking out through that window at a car passing on the street. The car had spoke wheels. He remembered wondering about which direction the spokes were turning in as the wheel rotated.

Richard Heyser questioned eveything and answered many of the questions that we mere mortals didn't have the sense to ask in the first place.

MANNY TWARD, *Colleague at Jet Propulsion Laboratory*

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Richard Heyser was a participant in the audio community. I say this in the universal sense, for he worked in that extended realm. Those of us in the Los Angeles Section were extra lucky: Dick lived and worked here. He was a colleague among us—always ready to give of his counsel and, when asked, to give of his time as well.

How can I describe what Dick Heyser meant to the L.A. Section? He served on our Executive Committee, and thus helped to formulate our section's goals and activities. He was dedicated to the sharing of knowledge. Frequently he would take an active part in the presentation of meetings and workshops or serve as an advisor to other presenters. He was a highly valued resource person.

But more than that, Dick was a good friend. He was always eager to help, whether it be to explain a vexing technical problem or simply to move equipment for a meeting. He never sought the limelight—in fact, he studiously avoided it. (Much is our regret that he never consented to be the guest of honor at our "An Afternoon with . . ." series, although he was present for nearly every one we held. Whenever asked, he always said that he just wasn't an important historical figure.)

And he kept us honest. Dick would never let anyone

try to slip something by. If involved in the planning of a session, he always made sure that the subject at hand would be covered in a logical and thorough manner. At a meeting, if what was being said didn't quite make sense, Dick would be there, questioning the speaker to draw out the truth. But he never acted in a denigrating manner; to Dick, the substance of the topic was what was important.

What was Dick's importance to the L.A. Section? Just his being there. We will miss him.

RON STREICHER, *Chairman*
AES Los Angeles Section

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Dick Heyser's death was tragic and untimely. The *Journal* has lost one of its most important and prolific authors, and a reviewer whose opinion was highly respected. The society has lost a concerned and creative president-elect, and an active official whose advice will be missed.

Dick was most generous in giving us his thoughts for publication. He was a pioneer in the technology. Many of his ideas, first thought too advanced and too theoretical, translated later into some very practical applications. A case in point is his early work on time-delay spectrometry which was first published in 1967 in the *Journal*. It took several years before it was applied in practice and became of wide and valuable use. Today it is considered a standard method.

Dick loved audio engineering. His job at the Jet Propulsion Laboratory was not directly involved in the field of audio engineering, so he spent his vacations attending the AES conventions, and he built an extensive acoustics laboratory in his home. His work in different technologies gave him the opportunity to transfer the knowledge of other fields to audio engineering. He did this with great success. His creative mind produced many novel concepts, and at the time of his death he was working on the first draft of a paper exposing some new mathematical concepts for audio. Still, he was modest as to his pioneering contribution. This is best expressed by quoting from the preface of the draft of his last paper which he continued to work on until the end. His own words are the best memorial to a great person.

"Perhaps more than any other discipline, audio engineering involves not only purely objective characterization but also subjective interpretations. It is the listening experience, that personal and most private sensation, which is the intended result of our labors in audio engineering. No technical measurement, however glorified with mathematics, can escape that fact."

ROBERT O. FEHR
Editor

BIOGRAPHY

Richard Heyser, president-elect of the Audio Engineering Society, was an active member of the AES for almost three decades. He served as a governor of the society for 1983 to 1984 and was prominent in numerous society activities. At various times he held all of the elected positions of the Los Angeles Section.

Heyser was born in 1931 in Chicago, Illinois. He attended the University of Arizona, where he received a B.S.E.E. degree in 1953. Awarded a Charles LeGeyt Fortescue Fellowship for advanced studies, he earned an M.S.E.E. degree from the California Institute of Technology in 1954. He spent the next two years doing postgraduate work at the California Institute of Technology. In 1956 he joined the Jet Propulsion Laboratory of the California Institute of Technology in Pasadena, California, where he became a member of the technical staff. His work involved communication and instrumentation design for all major space programs at JPL, beginning with the conceptual design of America's first satellite, Explorer I. Recently he had been involved in the application of coherent spread spectrum techniques to improving underwater sound research and medical ultrasound imaging.

In addition to his work at JPL, Mr. Heyser maintained a personal laboratory where he conducted research on audio and acoustic measurement techniques. This effort resulted in a number of papers published in the Journal of the Audio Engineering Society *and elsewhere. He was awarded nine patents in the field of audio and communication techniques, including time-delay spectrometry. Heyser was a reviewer for the* Journal *and a member of the Publications Policy Committee of the AES. He also was active in the society's standards work, serving as chairman of the Audio Polarity Committee. As a senior editor of* Audio *magazine he was responsible for the loudspeaker reviews of that publication for the past 12 years. He was a member of the IEEE, a fellow of the Audio Engineering Society, and the recipient of its Silver Medal Award in 1983. He was also a fellow of the Acoustical Society of America and a member of the Hollywood Sapphire Club. He is listed in* Who's Who in the West, Who's Who in Technology, *and* Distinguished Americans of the West and Southwest.

To honor and serve his memory, the Richard Heyser Scholarship Fund has been established. A committee is being formed to administer the fund, and contributions may be sent to the Audio Engineering Society. Checks should be made payable to the "Richard Heyser Scholarship Fund, AES."