

SEARCH

Scientists Who Serve God



FOR HALF A CENTURY, HE'S FIGURED OUT HOW



As a boy growing up in Oregon, F. Alton Everest was delighted when his homemade cigarbox microphone made a fly's footsteps sound like a stampeding elephant. He grew up to become a licensed acoustical engineer, his work touching the lives of people around the world.

Alton (the "F" is for Frederick) earned a B.S. in electrical engineering at Oregon State University. At a Baptist church in Corvallis he met his sweetheart, Elva. After she graduated from OSU they married and moved to California so he could obtain an E.E. degree at Stanford. In 1936 the young engineer plunged into a brand new field: television. An experimental broadcasting station in Los Angeles, W6XAO (later L.A.'s channel 9), hired him to design a receiver which amateur radio "hams" could build from his plans—since there were no commercial TV sets to pick up the station's signals.

Listening for submarines—and shrimp

Oregon State brought Everest back to its faculty to begin what would have been a distinguished academic career, but the U.S. government soon needed his experimental skills. In 1941, a few months before Pearl Harbor, he returned to California to do fundamental research in underwater sound at the Navy Radio & Sound Laboratory (now the Naval Ocean Systems Center) at Point Loma, San Diego. As a civilian scientist under a U. of California contract, he supervised the "Listening Section" of the lab.

Everest's section had two ships, one sporting a powerful underwater "loudspeaker," the other for dangling hydrophones into the sea. His group studied sonic propagation in the sea and was one of the first to record the now-familiar sounds made by porpoises and whales. A puzzling chorus of snapping sounds was identified by a biologist of the Scripps Institute of Oceanography as coming from colonies of million of tiny shrimp. Learning to distinguish such sounds from those of submarines and ships made a big difference in World War II. One U.S. submarine sneaked into Tokyo harbor under cover of high-noise areas of snapping shrimp. Eventually Sound Navigation & Ranging (SONAR) was perfected as the underwater counterpart of RADAR.

Busy getting a bee's eye view

In 1945 Alton Everest settled down to a twenty-five year stint at the Moody Institute of Science (first in West L.A., then in Whittier, CA). Once again "in at the beginning" of something important, he assisted Irwin Moon in founding MIS and became its scientific director. Moon was an energetic evangelist who used dramatic scientific demonstrations to illustrate his gospel messages. After carting tons of equipment around to appear on military bases during WWII, he was eager to put his "Sermons from Science" on film. Using mostly scrounged and war-surplus equipment, "the biggest little studio in the world" operated under the oversight of Chicago's Moody Bible Institute.

God of Creation was the first of twenty MIS films, seen by millions around the world. Moody science films have won more than fifty national and international awards. Many problems in putting the wonders of nature on film were solved by MIS workers led by Everest, who published those solutions in technical journals. They built working models of a human ear and a honeybee's compound eye. They designed a new type of camera lens to photograph bees up close without "frying" them under hot studio lights. On location Everest set off flares on a beach to film a grunion run at midnight and recorded the mating call of an elephant seal weighing over a ton.

In 1970 Alton Everest "retired" from MIS with many fascinating tales to tell. Typically, it was another beginning for this ingenious problem-solver.

Scientific Investigation

GOOD STUDIO DESIGN: A SOUND INVESTMENT

EXPERT AUDIO ADVICE

Much of Everest's audio engineering knowledge is available to "unsophisticated audiophiles" in a series of inexpensive handbooks published by TAB Books (Blue Ridge Summit, PA 17214), a major publisher of "how to" books.

TAB titles by Everest include No. 781, Handbook of Multichannel Recording (1975); No. 966, Complete Handbook of Public Address Sound Systems (1978); and No. 2606, Successful Sound Systems Operation (1985). The following are 2nd editions: No. 1696, Acoustic Techniques for Home & Studio (1984); No. 2966, How to Build a Small Budget Recording Studio from Scratch (1988); No. 3096, Master Handbook of Acoustics (1988).

(Speaking of audio, do you know where the German automobile, the Audi, got its name? August Horch, who founded the company in 1909, used the Latin translation of *horch*, which in English means "Listen!")

When F. Alton Everest retired from Moody Institute of Science, he briefly resumed the teaching career interrupted almost thirty years before. With their three children grown, the Everests were free to go overseas. They moved to Hong Kong, where Alton taught broadcasting and film-making in the Communications Department and Elva taught in the English Dept. of Hong Kong Baptist College. They hosted a whole new "family" of Asian students.

Returning to their California home in 1973, the Everests needed a source of income. At sixty-three, Alton carved out a new career for himself as a consulting engineer. He had already helped with the acoustical design of several recording studios and, while setting up foreign distribution of Moody science films, had seen many inadequate missionary recording studios.



Teaching in Hong Kong (1972)

Translating good science into good sound

Everest wanted to help Christian ministries improve their facilities for recording sound but he knew that their funds were often limited. How could he help them and at the same time support himself? First, he wrote a series of books, beginning with *Acoustic Techniques for Home and Studio* (TAB Books, 1973). In those books he showed how to use scientific principles of studio design even with inexpensive materials.

Then, turning a room of his home into a sound studio, he produced test tapes to mail overseas with instructions for playing the tape in a studio while recording the room's response under specified conditions. The response tape was sent back to Whittier, where Everest used complicated test equipment to analyze its quality. From those results and a description of the present installation, he could give detailed advice on exactly how to improve the studio's acoustic performance, all by mail.

Many factors affect the fidelity of recorded and reproduced sound. The size and shape of a small room can set up "standing waves" that enhance some frequencies and attenuate others. Construction materials vary greatly in sound-absorbing and sound-reflecting characteristics. (So-called acoustical tile "soaks up the tweet but leaves the boom.") Extraneous sounds hardly noticed otherwise can ruin a recording. (The whirring of a fan coming through ductwork and the hum of fluorescent lighting are notorious background noises.)

To the uttermost parts of the earth

By 1988 Alton Everest had completed something like 150 consulting projects in Asia, Africa, Latin America, Europe, and North America, with substantial discounts to mission groups. His skills have been applied from Seminario Teologico Bautista Mejicana to Radio Sawtu Linjiila in Ngaoundere, Cameroun. He has designed major facilities for Pacific Broadcasting Association in Japan, for Far East Broadcasting Co., and for Back to the Bible Broadcast. He has worked for individual churches and for commercial enterprises with names like Sound Advice and Salty Dog Studios.

And this particular salty dog (now seventy-eight) has been learning new tricks all along. A job in Bolivia taught him the excellent sound-insulating qualities of two-foot-thick adobe walls. In Liberia, where a missionary studio couldn't afford fiberglass, ginned cotton is a major export crop. Sure enough, it makes a good low-cost sound absorber.

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Would you repeat that, please?

From a biblical point of view, does something special about *hearing* the gospel make oral communication of greater spiritual significance than, say, written communication?

The Bible comes to us as the written Word of God, yet is full of admonitions to *hear* God's voice, to *listen* to what God has to say through his prophets, apostles, and his Son. Divine communication goes both ways: the Lord *hears* the prayers of his people. Add to this all the references to "psalms and hymns and spiritual songs, singing and making melody to the Lord" (Eph 5:19).

Emphasis on auditory communication stretches throughout the Bible: from God's direct conversation in the Garden of Eden (Gen 2 & 3) to the warning to anyone "who hears the words of the prophecy of this book" not to change them (Rev 22:18-19). The great *Shema* ("Hear, O Israel") is associated with the giving of the Mosaic law (Deut 6:4-9). And Jesus frequently repeated the phrase, "He who has ears to hear, let him hear" (Matt 11:15).



Reading the Bible together

A fluke of technological history?

Quaint phrases for listening, like "give an ear" or "incline your ears," remind us that the Bible was written long ago. Parts of it may have had an even longer oral history. At one time all information was probably transmitted orally. Australian aborigines still chant creation stories kept alive for perhaps 30,000 years in a culture with no written language.

Writing came along as a way of *recording* information. Thousands of years later, the invention of printing made it cheap to "spread the word." We're so used to reading letters, newspapers, and books that we forget how communication has changed. Today's youngsters think of black-&-white television as an antique, but the human voice was first transmitted via radio in 1900 and the first commercial radio broadcast came only in 1920. Think of the progression from dictaphone-like cylinders to "78s" to hi-fi LP recordings to today's CDs. Maybe the best means of communicating depends only on the available technology.

Or something more?

On the other hand, all children (even in modern, hi-tech societies) learn to speak before they learn to read. Editors recognize that "spoken English" differs from "written English." Scientists are now exploring how our brain patterns are shaped in early childhood by spoken language. Speech (and music) may "touch our souls" simply because intelligible sound has played a key role in making us human in the first place.

Barbara McClintock, who won a 1983 Nobel prize for her discoveries in genetics, urges fellow scientists to "listen to the material" and "let the experiment tell you what to do." Perhaps those are more than "figures of speech." Walter Thorson, a physical chemist and philosopher of science, thinks that "seeing" and "grasping" may be more egocentric modes of perceiving: "The scientific tradition really depends on an inward *listening* attitude, the notion that we will hear music, not noise, if we listen, and that it really comes from outside us."

To Thorson, science is based on trust in our ability to comprehend order in nature by allowing it "to speak to us of itself." He concludes: "For the knowledge of creation, as for the knowledge of God, it can be said: 'Faith comes by hearing—and hearing by the Word of God' (Rom 10:17)."

Theological Reflection

IS HEARING CRITICAL FOR FAITH?

LEARNING TO LISTEN

F. Alton Everest has produced two training courses on cassette tape, accompanied by fully illustrated manuals. Auditory Perception (eight units) demonstrates basic aspects of the hearing system, for discerning listeners and those who make music or record it. Critical Listening (ten units) exposes the listener both to clean, pure sounds and to distorted ones, to teach how to distinguish them. Like Everest's books, each course presents a mass of technical information in understandable form.

These courses were so innovative that book publishers were not interested. Privately published, they are available from Mix Bookshelf ("The Recording Industry Resource Center," 6400 Hollis St., Emeryville, CA 94608).

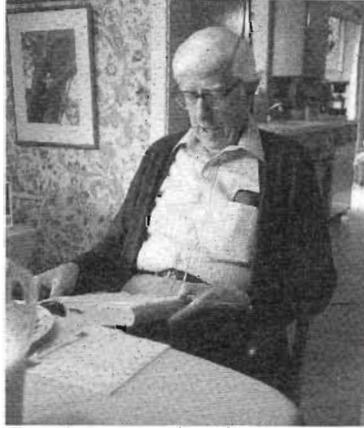
Moody Institute of Science is still going strong, by the way, now producing videocassettes as well as films. Their latest film, Journey of Life, winner of the CINE Golden Eagle award, was shown in a Scientific Film Festival held in Beijing, China, in 1987. In addition to explicitly Christian materials, MIS has put some of the same dramatic footage into films, videocassettes, and filmstrips suitable for public school use. (Address for either catalog: MIS, P.O. Box 5040, Whittier, CA 90607.)

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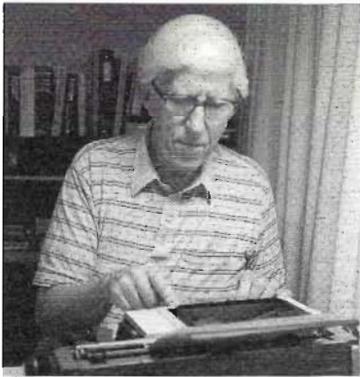
Alton Everest has been concerned about fidelity (“faithfulness”) in sound reproduction. He has put his technical skills to work all over the world so the message of Jesus Christ can be transmitted clearly and understandably.

More than that, he and Elva have wanted their whole lives to be characterized by faithfulness. They have worked as a team, regarding Alton’s profession as their primary focus of Christian service. He has assisted in producing outstanding films, written useful books, upgraded the quality of Christian broadcasting, and taught young Asians how to reach their generation more effectively.

But Alton Everest leaves another important legacy. In 1941 he helped found the American Scientific Affiliation, an organization of evangelical Christians working in all branches of science and technology. Everest was ASA’s first president, editor of its 1948 volume, *Modern Science and Christian Faith*, and first editor of its Newsletter. Thousands of ASA members have dedicated themselves to bringing science and Christian faith together in a way that respects both.



Devotions at meals, a family custom



Because Alton Everest has integrated science and biblical faith so well, Wheaton College granted him an honorary D.Sc. degree in 1959. His life shows how the Lord uses individual talents when they are dedicated to Christ. Admitting that he can’t understand “lazy Christians,” he quotes Ecclesiastes 9:10: “Whatever your hand finds to do, do it with your might.” A favorite New Testament chapter is Romans 12, about “laying our lives on the line.”

What about our human limitations? Ironically, Everest has suffered a severe loss of hearing in recent years. What’s he doing about that? Researching the whole subject, of course—so he can write articles to help others understand our marvelous God-given auditory system.

Lord, help us all to be “high-fidelity” Christians. Amen.

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Thoughtful Worship

A LIFE OF HIGH FIDELITY

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