

SIGNAL-TO-NOISE

Audio Pioneers Leave Artistic Legacy

by Frank Beacham

NEW YORK This is a story about quality. About doing things right. About not cutting corners. It is a story of how human ingenuity in a recording studio 35 years ago led to the sonic preservation of a musical gold mine that is certain to thrill listeners for generations to come.

The story begins in 1958 when impresario Harry Belock and producer/engineer Bert Whyte teamed to create a series of symphonic recordings in stereo.

This was no ordinary team. Belock's commitment to the music went far beyond the bottom line, and Whyte's uncompromising engineering skills were much needed at a time of transition in LP record production.

In the late '50s, stereo recordings were a new breed, and the

industry was only beginning to react to the technical demands of this new medium. Monaural albums were traditionally mastered on quarter-inch tape at 15 inches and most labels at the time were recording stereo on the same quarter-inch media.

Using film

Belock and Whyte wanted better recordings for their new enterprise. To achieve it they chose to record on 35 mm magnetic film rather than tape. There were major advantages to this.

The substantial width of the film accommodated three channels, each of which was as wide as the standard quarter-inch recording tape. Running at 24 film frames per second, this format yielded stereo recordings in which the usual background noise was virtually inaudible. And, because the 35 mm mag used sprocket holes,

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like cinematic film, there was an unprecedented smoothness of motion.

The 35 mm base material, on which the magnetic oxide was coated, was five times thicker than that of conventional tape, permitting the recording of extremely high sound intensities without the danger of layer-to-layer print through.

Belock and Whyte had Westrex Corp., maker of 35 mm film recorders, build special equipment to their specifications. Much of the normal circuitry was removed to reduce noise in the signal path. Recording heads and amplifiers were specially designed to improve wide-band frequency response.

The same customization extended to the microphones. To record each of the three channels, Belock and Whyte used a Neumann U-47 microphone modified by Frank Church. According to Neumann's Jeff Alexander, the "Church 47" combined the Neumann U-47 capsule and head grill with a customized case and electronics.

Customized Neumann's

"Church built his own electronics. He used a different tube than Neumann. It had a pot inside so you could optimize the filament voltage to get the quietest operation," Alexander said. "I've heard things like the mic was smoother, more textural...but it gets into very subjective realms."

The minimalist recordings made by Belock and Whyte on this unique three-mic, three-channel system from 1958 to 1961 became known as the Everest Ultra Analog collection. The recordings were said to be superior to other analog LP releases of the time.

However, mastering on magnetic film was expensive, leading future owners of the Everest catalog to work strictly from quarter-inch tape copies of the original masters. So many quarter-inch generations were made over the years that a record industry executive said that some later budget releases of the Everest recordings "sounded like they were made under water."

Fast forward to 1993. On "a total whim," Seymour Solomon, president of Omega Records Group and founder of the Vanguard Classics label, decided to investigate the availability of the Everest library. He located the original 35 mm mag film masters in a California warehouse.

Some of the metal film cans had become wet and had rusted. Others had oxidized over time and were virtually welded shut. "The cans stink like hell when they are opened," Solomon said. "You could barely handle them. Some of the people got ill from the noxious fumes that came out of these boxes that hadn't been opened in over 30 years."

Recordings intact

Yet, Solomon and his associates were not prepared for the sonic treasures in those film cans. "All of us were shocked at what came out of those boxes," he said. "The tapes had not been touched. Most played as if they were virgin tapes made the day before."

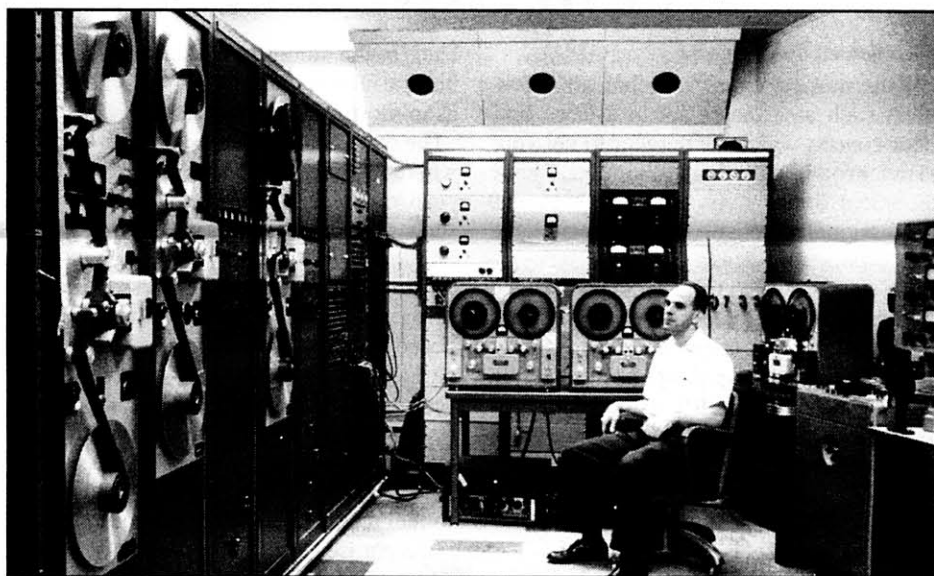
To properly re-release the Everest collection, Vanguard's engineers interviewed Bert Whyte—and, after his death last spring, his widow Ruth Whyte—and any remaining musicians or technicians involved in the project they could locate.

Then Vanguard Classic's Frank Burton, supervisor of the transfer process, secured a Westrex 35 mm film recorder and a recording with the correct Everest equalization curve. The recorder was modified for proper playback of the original 35 mm masters.

With the help of David Smith, director of recording operations at Sony Classical, it was decided the 35 mm masters would be transferred through a custom-designed, 20-bit high resolution analog-to-digital converter to magneto-optical discs using the new Sony PCM-9000 master recorder. The disc masters—each holding 80 minutes of programming in the 20-bit format—then were transferred to a hard disk system for editing.

Sony SBM

The final step was transfer of the material through the Sony SBM K-1203 Super Bit Mapping (SBM) processor, which is claimed to transfer 20-bit resolution to the standard 16-bit CD, to produce the master used to manufacture the actual compact discs. No noise



Everest used film recorders to capture stereo recordings of classical music.

reduction, limiting or compression was used in any phase of the process.

In order to preserve the music collection for archival purposes, Solomon and Smith decided to record the new masters in the 20-bit linear recording mode in anticipation of future delivery systems that might offer additional sonic resolution.

Although 20-bit signals have 16 times more resolution than 16-bit signals, Sony claims that SBM takes advantage of some psychoacoustic principles to make it possible to use 20-bit masters in the production of 16-bit CDs—which sacrifice little of the original master's sound quality. To hear the effect of SBM, the listener must have a high-end audio reproduction system, according to Sony.

One of the ironies of this project is that it has taken more than 30 years for Belock and Whyte's work to be fully appreciated. Even they could not hear the full fruits of their efforts outside the studio because the reproduction systems of the late 1950s could not reproduce the full impact of the original recordings.

However, by taking an uncompromising path toward artistic and sonic quality and considering more than just the bottom line on a ledger sheet, they produced what some critics now are calling among the best stereo symphonic records ever made.

"If there's one thing Everest's experience has taught us, it is that quality levels once considered esoteric or overkill will some day have consumer appeal and relevance," Solomon said. "It's not just mastering for the present market but leaving a vital artistic legacy for future generations."

The entire catalog of the Everest Collection consists of about 90 titles. The first 20 titles were to be on sale in retail stores by the end of October. For further information, contact Vanguard Classics at 212-769-3060.

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