

QUADRA<sup>®</sup>SONIC SOUND\*

**"I have heard the future  
and it works."**

—William Anderson, STEREO REVIEW



***Vanguard is Proud to Announce  
a Revolutionary New Four Channel  
System of Stereophonic Recording***

The sonic improvement of Vanguard's SURROUND STEREO\* over conventional stereo is more striking than the comparison between stereo and its older mono counterpart.

\*Trademark registered

## — What is SURROUND STEREO? —

Until now, no stereo recording could capture the 3-Dimensional ambience of a given concert hall. The word "stereo" in the state of the art unfortunately has become synonymous with 3-Dimensional sound; that sorry to say it is not. Conventional two channel stereo represents a method of recording and playback where only frontal (side to side) sound re-creation is possible. On the other hand, where 3-Dimensional sound is being considered, the depth (front to back sound projection) has equal weight with the side to side sound projection, and it is the total of these two qualities which represents the natural radiation of sound in the concert hall as experienced when listening live.

Since approximately 20-60% of sound as heard in a concert hall is reflected rather than direct, it can easily be seen why exact capturing or reflected sound in its correct proportion is essential for the re-creation of the live listening experience. These sound reflections are the characteristics which differentiate one concert hall from another and when recorded and played back using advanced techniques, can re-create (in a standard listening room) the original concert hall environment in 3 (sonic) dimensions.

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This technique consists of the simultaneous four track playback of four independently recorded signals through four separate amplifier and speaker systems in the home. The playback speakers are placed as follows: two in front of the listener to the left and right as in normal stereo, and two at the left and right in the rear of the listening environment. In the case of classical music, the front two speakers reproduce the normal stereo arc from left to right as in the conventional system. The rear speakers reproduce the ambient sound and reverberation characteristics of the hall in which the music was recorded.

The technique in principle is accomplished by recording the front two channels as is conventional in normal stereo. Simultaneously, two additional channels are recorded by

means of strategically placed microphones directed toward the rear and sides of the auditorium. These two channels are then reproduced by the rear loudspeakers.

The advantages of this system are manifold:

1. For the first time, the actual acoustical properties of the specific auditorium are able to be reproduced. Thus, one can hear clearly, for example, the difference between the acoustical characteristic of Carnegie Hall as opposed to the Mormon Tabernacle.

2. Individual lines of the most complex orchestration are reproducible with clarity, detail and immediacy not before possible.

3. The listener is literally involved or surrounded by music as he would be sitting in the center of a great auditorium.

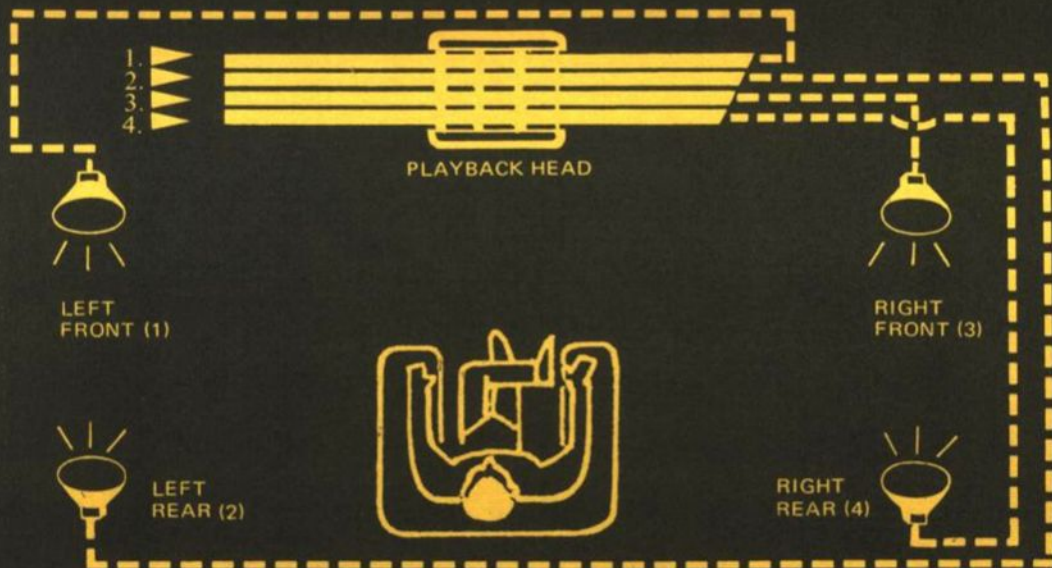
4. The typical beaming of high frequencies characteristic of loudspeakers is virtually eliminated; providing a much more agreeable and natural sound.

5. Additionally, the listener may move about the room freely without disturbing or detracting from the stereo effect.

The use of the medium, of course, is not restricted to classical orchestral procedures. In the case of a large work such as the Berlioz Requiem, which Vanguard has just recorded with Maurice Abravanel in the Mormon Tabernacle, results are even more startling. Berlioz, for example, in addition to the normal orchestral and choral forces, wrote for four brass choirs located east, west, north and south. These choirs have now been located on the four tracks of the new Vanguard SURROUND STEREO and are heard for the first time in a recording as intended by the composer.

The SURROUND STEREO technique is also not in any way limited to serious music, despite the great benefits which accrue to symphonic and vocal compositions. Its uses in all phases of popular music are equally impressive.





## SURROUND STEREO QUESTIONS & ANSWERS

1) — Qualitatively speaking, how much better is QUADRASONIC SURROUND STEREO than the standard stereo of today?

— Some months back when Vanguard first demonstrated SURROUND STEREO for several of the most highly respected experts in the music and audio fields, we received almost unanimous agreement that SURROUND STEREO represents a definite advance over the conventional 2 channel stereo of today. Here are just a few excerpts from the many rave reviews SURROUND STEREO has received:

"The result is not only a more faithful reproduction of the music, but a startlingly close approach to the entire sonic environment of the concert hall." — NEWSWEEK

"... The sound 'feel' was impressive, clearly superior to the very good 'ordinary' stereo. The four channel 'stunts' were good, too — multiple brass choirs in the Berlioz Requiem, at last spaced out at the four points of the compass as intended ... All good, all very significant."

—Edward Tatnall Canby, AUDIO

"This is a recording technique in which stereophony achieves literal, instead of simulated, three-dimensionality ... All this was duly and truly astonishing ... reproducing the ambient sound and reverberation characteristics of the building with amazing realism ... 'Surround Stereo' is really something."

—Bernard Jacobson, CHICAGO DAILY NEWS

"I have heard the future and it works ... The sonic impression is, I might add, spectacular in its realism: the 'half sound' is palpably there ... and for an old concertgoer like this one, the experience is gratifying."

—William Anderson, STEREO REVIEW

2) Q — What brands of tape decks presently on the market are specifically designed to back SURROUND STEREO tapes?

A — Companies such as Teak, Wollensak, Telex, and Crown are now marketing open reel 7½ i.p.s. decks (with inline head configurations) delivered ready to play SURROUND STEREO tapes.

3) Q — How can I modify my present stereo system to play back SURROUND STEREO tapes?

A — Your present stereo deck can be converted to accept a special four channel inline head now being manufactured by both Nortronics and Michigan Magnetics. Secondly, an additional stereo controlled amplifier (with tape head inputs), and pair of speakers are needed to complete the chain of components required to play back SURROUND STEREO in your living room. Diagram on the left illustrates the correct channel hookup for reel-to-reel playback of SURROUND STEREO.

4) Q — Will the two additional speakers required for SURROUND STEREO have to be of the same brand and model as the two already in my present system?

A — Theoretically, a set of four matched speakers is ideal for the reproduction of SURROUND STEREO. However, we have had superb results obtained with smaller sized good quality speakers used for the rear channels.

We also find that four high grade "compact" speaker systems (such as AR-4X or KLH-22) yield a level of top-notch performance normally not obtainable with the same given speakers in a standard two channel music system.

5) Q — Is balancing a home music system to play four channel SURROUND STEREO more difficult than balancing a conventional two channel system?

A — Balancing a home music system to play SURROUND STEREO is actually as easy as balancing a normal stereo. Vanguard has devised a very simple foolproof balancing method which will be included with every SURROUND STEREO tape sold. Essentially, however, if a mono voice signal is balanced through each of the four speakers to give equal volume from each channel, that is all that is necessary.



6) **Q** — Can the markedly improved sonic results obtainable with SURROUND STEREO be realized in any size listening room?

**A** — We have set up SURROUND STEREO playback systems in a number of different sized listening rooms and in all cases the results were extremely gratifying. An inherent advantage of SURROUND STEREO is that it is less affected by the acoustical properties of the listening room than conventional stereo.

7) **Q** — Are SURROUND STEREO tapes compatible — i.e., can I play these tapes on my standard reel-to-reel tape machine and still be able to hear full two channel stereo through my present system?

**A** — SURROUND STEREO tapes when played on a regular quarter track tape deck will yield the same high quality sound as the finest reel-to-reel tapes sold today. This holds true in the case of most classical recordings. However, because SURROUND STEREO captures a number of music nuances not obtainable with standard stereo, there are certain classical selections (such as the Berlioz Requiem) and a great number of popular albums which can only be fully appreciated through four channels.

8) **Q** — In terms of compatibility, what is the actual track layout in the reel-to-reel and cassette format?

**A** — In the case of the SURROUND STEREO reel-to-reel configuration, tracks 1 and 3 contain the primary frontal information needed for full conventional playback of standard classical recordings, which is identical in configuration to regular stereo tapes now being offered. The SURROUND STEREO cassettes, when they are introduced, will conform to the same compatible track layout that has been established by the industry, i. e. tracks 1 & 2 will contain the essential frontal information.

9) **Q** — What will be the price of SURROUND STEREO tapes?

**A** — A SURROUND STEREO tape of full lp length will cost \$14.95. SURROUND STEREO tapes are duplicated on the highest quality low noise tape and are playable at 7½ ips. As soon as 3¾ ips playback machines become more readily available, Vanguard will release at a reasonable reduction in price, SURROUND STEREO tapes of comparable quality to our 7½ ips selections.

10) **Q** — Can SURROUND STEREO be broadcast over FM?

**A** — Several FM stereo broadcast stations throughout the country are joining forces in a series of cooperative four channel simultaneous broadcasts. New York's first historic broadcast of Vanguard's SURROUND STEREO was done late in October through the joint efforts of WNYC and WKCR. Recently, a new multiplex system for transmitting four channel stereo has been developed by William Halstead in conjunction with Martin Industries. Pending FCC approval, this new multiplex medium will be experimentally broadcast (in which Vanguard will be a principle participant), through the facilities of New York's municipal station, WNYC-FM.

11) **Q** — When will SURROUND STEREO be available in cassette or lp record form?

**A** — Vanguard now possess the capability of producing SURROUND STEREO cassettes. As soon as four channel cassettes playback units appear on the market Vanguard will release a line of SURROUND STEREO cassettes. A new experimental lp record now being developed has the potential of capturing 4 independent channels in one groove; if and when this new system is successfully developed, Vanguard will make available SURROUND STEREO in disc form.

12) **Q** — What is the future of SURROUND STEREO?

**A** — SURROUND STEREO is the next logical step forward in man's continuing search for truth in home music reproduction. There is no question that at some point SURROUND STEREO will render obsolete conventional stereo. How long this will take is up to you!

**FIRST RELEASES NOW AVAILABLE ON OPEN REEL 7½ IPS ¼" TAPE  
(CASSETTES IN PREPARATION.)**

- |         |  |
|---------|--|
| VSS-2/3 | Berlioz Requiem — Utah Symphony Orchestra/Maurice Abravanel, cond.               |
| VSS-4/5 | Mahler Symphony No. 3 — Utah Symphony Orchestra/Maurice Abravanel, cond.         |
| VSS-6/7 | Mahler Symphony No. 9 — Utah Symphony Orchestra/Maurice Abravanel, cond.         |
| VSS-8   | David's Album — Joan Baez  |
| VSS-9   | Illuminations — Buffy Sainte-Marie   |
| VSS-10  | The Amazing Electronic Sound of Jean Jacques Perrey                              |
| VSS-11  | Handel's Jephtha (Highlights) — English Chamber Orchestra/Johannes Somary, Cond. |
| VSS-14  | Greatest Hits — Country Joe and the Fish   |
| VSS-1   | Surround Stereo Sampler — containing excerpts from above                         |