

SECOND STAGE

THE SYMPHONIC SOUND STAGE, VOL.2

The image features two CD discs floating in a blue space. The top disc is smaller and positioned higher, while the bottom disc is larger and positioned lower. A planet is visible in the background, and several lines radiate from the center of the discs, creating a sense of depth and focus.

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SECOND STAGE

The Symphonic Sound Stage Vol. 2:

D/CD 3504

A Listener's Guide To The Art

And Science Of Recording The Orchestra

- 1 **STRAVINSKY: FIREWORKS** • Gerard Schwarz, conductor • Seattle Symphony (D/CD 3054) [4:05]
- 2 **RACHMANINOFF: SYMPHONY NO. 2, Scherzo** • James DePreist, conductor • The Oregon Symphony (D/CD 3071) [8:35]
- 3 **WAGNER: LOHENGRIN, Prelude to Act III** • Gerard Schwarz, conductor • Seattle Symphony (D/CD 3053) [3:27]
- 4 **HAYDN: SYMPHONY NO. 100, "Military," Finale (Presto)** • Gerard Schwarz, conductor • Scottish Chamber Orchestra (D/CD 3064) [4:50]
- 5 **RIMSKY-KORSAKOV: RUSSIAN EASTER OVERTURE (excerpt)** • Gerard Schwarz, conductor / Seattle Symphony (D/CD 3054) [7:02]
- 6 **SHOSTAKOVICH: SYMPHONY NO. 11, "1905," "January 9th" (excerpt)** • James DePreist, conductor • Helsinki Philharmonic (D/CD 3080) [5:28]
- 7 **R. STRAUSS: JOSEPHSLEGENDE (excerpt)** • Gerard Schwarz, conductor • Seattle Symphony (D/CD 3082) [5:57]
- 8 **BARTOK: THE MIRACULOUS MANDARIN (excerpt)** • Gerard Schwarz, conductor • Seattle Symphony (D/CD 3083) [3:27]
- 9 **HAYDN: PIANO CONCERTO NO. 5 IN G MAJOR, Adagio (excerpt)** • Carol Rosenberger, piano • Gerard Schwarz, conductor • Scottish Chamber Orchestra (D/CD 3064) [5:00]
- 10 **VILLA-LOBOS: FANTASIA FOR CELLO AND ORCHESTRA, Largo** • Janos Starker, cello • Eleazar de Carvalho, conductor • Orquestra Sinfônica da Paraíba (D/CD 1017) [7:26]
- 11 **KODALY: HARY JANOS SUITE, "The Viennese Musical Clock"** • Gerard Schwarz, conductor • Seattle Symphony (D/CD 3083) [2:05]
- 12 **TCHAIKOVSKY: HAMLET (excerpt)** • James DePreist, conductor • The Oregon Symphony (D/CD 3081) [5:06]
- 13 **PISTON: SYMPHONY NO. 2, Moderato (excerpt)** • Gerard Schwarz, conductor • Seattle Symphony (D/CD 3074) [4:54]
- 14 **HANSON: SYMPHONY NO. 2, "Romantic," Finale (Allegro con brio)** • Gerard Schwarz, conductor • Seattle Symphony (D/CD 3073) [7:17]

TOTAL PLAYING TIME: 76:00

Delos' approach to symphonic recording has developed out of the need to be flexible and consistent in dealing with a range of acoustical settings and a wide variety of musical styles.

By way of recapitulation from the notes of Volume I of *The Symphonic Sound Stage*:

1. The home stereo listening experience differs markedly from that of the concert hall. Simple documentation of the orchestra via a single stereo pair of microphones rarely works well.
2. A rational microphone array must be developed which captures spatial detail as well as hall ambience. Both structure and texture in the recording are important.
3. There are few halls which are ideal for recording as they stand. Some degree of treatment is generally necessary, and normally takes the form of orchestra shell reconfiguration and providing for added sound reflection (less absorption) in the house itself.
4. Basic agreement among conductor, producer, and recording engineer regarding sonic objectives is absolutely essential. Even within the same acoustical setting, these aims and their implementation will vary by composer and period.

In this second volume of *The Symphonic Sound Stage*, Delos continues the survey of its current activities. All of the recordings presented here reflect the company's basic approach to microphone placement, which can be described as follows:

1. Four microphones across the front. A pair of Sanken CU-41 unidirectional microphones in a quasi-ORTF-spaced array are placed in the middle, about four feet behind the conductor and nine to eleven feet high. The primary pair preserves the all-important spatial details of the ensemble, both left-right and fore-aft. Flanking this pair are two Sennheiser MKH-20 omnidirectional microphones, whose spacing from the center pair may be six to eight feet. The

purpose of this secondary pair is to add width to the body of string sound and to provide time-related cues from the hall itself. The relative balance of the center and flanking pairs is an important variable for the recording engineer. The microphone models we have mentioned have been chosen for the exemplary pattern control at high frequencies and for their extremely low inherent noise levels.

2. Separate pickup of hall reverberation, if necessary. When the orchestra is seated in a shell, the amount of reverberation picked up by the frontal microphones may not be enough for proper balance of direct and reverberant sound. In those cases a secondary stereo pair is located well in the hall's reverberant field, but never more than about thirty feet away from the orchestra. The output from this pair of microphones is carefully mixed into the stereo ensemble for proper musical balance.

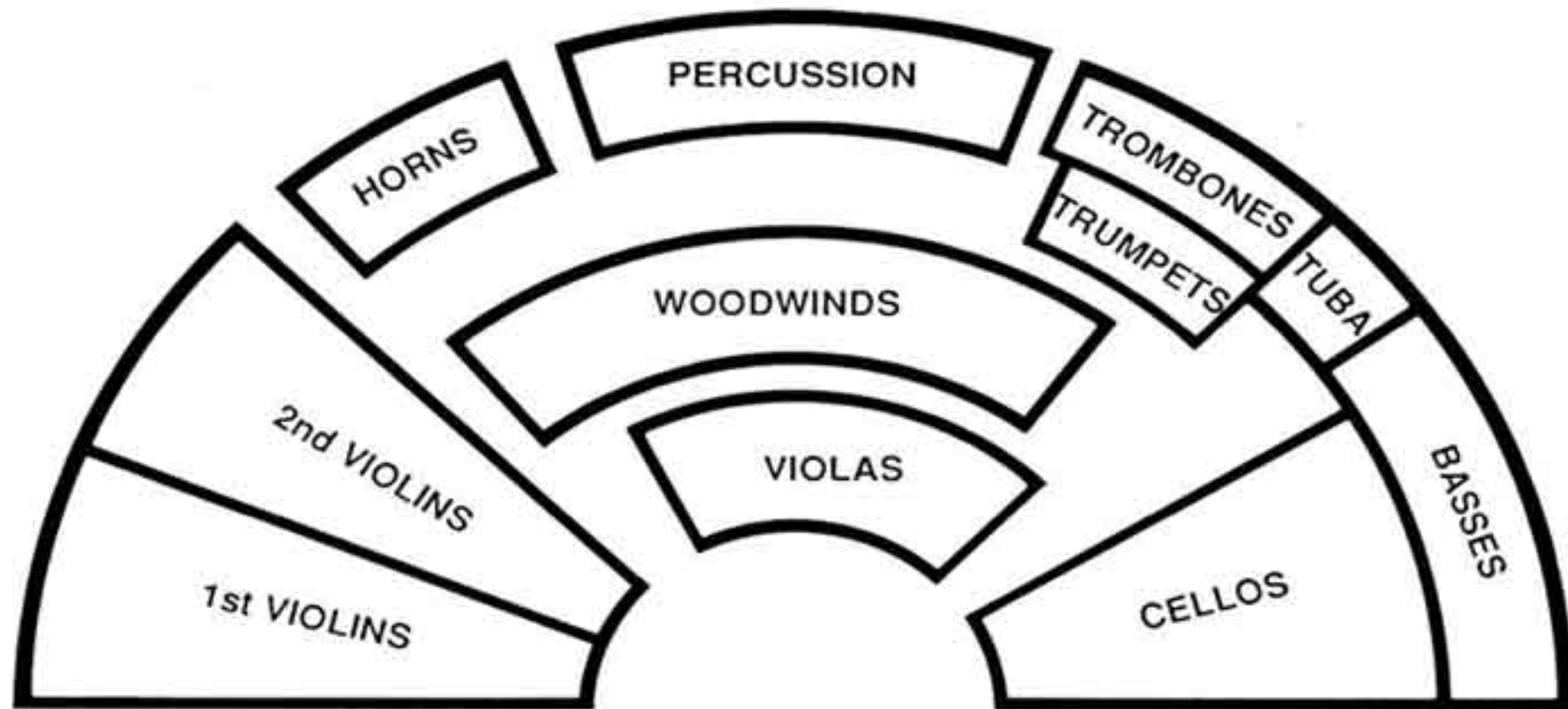
3. Separate pickup of the woodwinds. Depending on stage depth, and of course on the nature of the orchestral writing, a secondary pair of microphones may be placed high above the winds. The purpose here is to give them slightly more presence without unduly highlighting them.

4. Accent microphones as needed. Since the basses are normally at the sides and back of the orchestra, a single microphone on the first stand of basses will provide better sectional balance with the cellos, violas, and violins. Some naturally soft instruments, such as harp and celesta, should never be forced for the sake of musical balance. An accent microphone in their vicinity will help correct things. Generally, the presence of accent microphones is barely audible in the overall stereo mix.

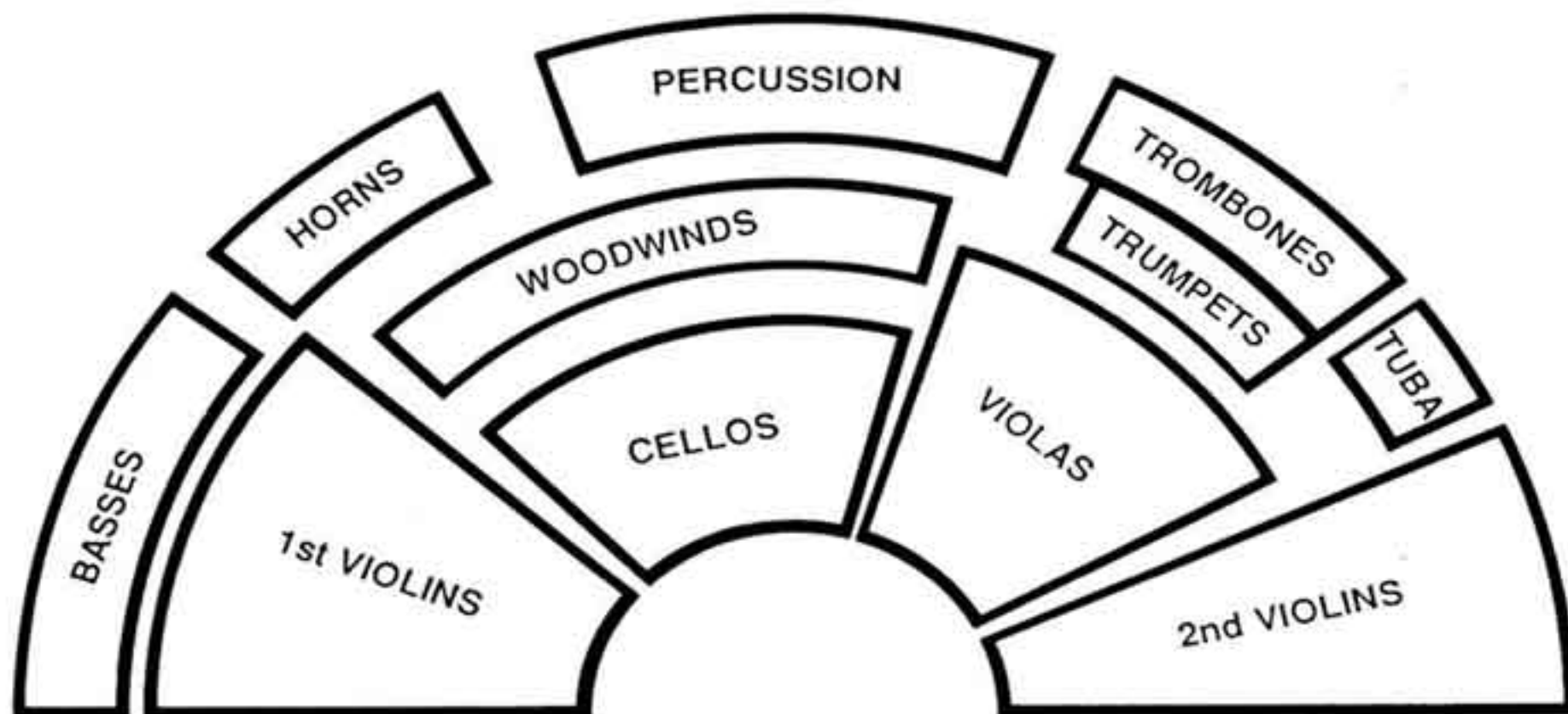
5. Pickup of soloists. Depending on requirements, a soloist may be picked up either with a single microphone or with a stereo pair. Care must be taken to ensure that the soloist appears in just proportion with the orchestra, neither too far back nor too far forward.

As we did in *The Symphonic Soundstage, Vol. 1*, we would now like to walk you through some rather spectacular examples of what the orchestral sound stage means

to Delos. Each of the selections described below presented its own set of challenges in both musical and engineering terms. We will tell you why we made the decisions we did.



This is the symphonic seating plan most frequently used by present day symphony orchestras. This generic plan is modified by Delos for the musical and sonic requirements of each recorded performance. Seating for instruments not shown, such as the harp, also varies with these requirements.



This alternate symphonic seating plan, frequently used by Delos to achieve independence of musical lines between first and second violins, is also modified for the musical and sonic requirements of each recorded performance. Seating for instruments not shown, such as the harp, also varies with these requirements. This seating is favored by conductor Gerard Schwarz, and can be heard in all of his Delos recordings.

Stravinsky: *Fireworks*. Seattle Symphony, Gerard Schwarz, conductor. This complex score calls for utmost clarity in both performance and recording so that inner voices can be clearly discerned. Somewhat less than usual hall reverberation pickup was used so that textures would remain clear. An accent microphone was used with basses, and a single accent microphone helped limn out the harp and celesta.

Rachmaninoff: Scherzo from *Symphony No. 2*. The Oregon Symphony, James DePreist, conductor. In many reverberant halls, the texture of Rachmaninoff's music can emerge as thick and indistinct. The intimacy of the Arlene Schnitzer Concert Hall in Portland projects this music so that all details are present, while at the same time preserving cohesion. For many recording engineers there is a temptation to move in too close with the microphones. This may give the desired clarity, but it is often at the risk of stridency in the strings. There is none of that here; the music's lush romanticism is faithfully rendered.

Wagner: Prelude to Act III of *Lohengrin*. Seattle Symphony, Gerard Schwarz, conductor. For works of the Romantic era the rich reverberation of the Seattle Opera House is ideal. No accent microphones were necessary, and the entire pickup is by way of the four across the front and the pair of hall reverberation microphones. The main microphones were about eleven feet high, and balances were set so that the perspective to the listener is about what would be heard in an operatic environment.

Haydn: Finale from *Symphony No. 100, "Military."* Scottish Chamber Orchestra, Gerard Schwarz, conductor. Music of the Classical period is best performed in relatively small, live halls which have lots of "bloom," or rebound back almost immediately on the listener. Such is Queen's Hall in Edinburgh, the home of the Scottish Chamber Orchestra. Queen's Hall was formerly a church, and the simple expedient of removing pew cushions from the back seating stalls and balconies livened the room considerably. The orchestra was seated on the main floor, well into the room, so no reverberation microphones were needed. A single accent microphone was used for the orchestra's two basses to balance the string ensemble. Overall, the balance between direct and reverberant pickup is ideal.

Rimsky-Korsakov: Excerpt from *Russian Easter Overture*. Seattle Symphony, Gerard Schwarz, conductor. The recording setup is basically the same as for the Wagner example, with the addition of an accent microphone on the harp. Breadth of

sound is important, and the hall microphones were generously added to the mix.

Shostakovich: Excerpt from *Symphony No. 11, "The Year 1905."*

Helsinki Philharmonic Orchestra, James DePreist, conductor. The concert hall in Hyvinkää, north of Helsinki, is quite live for its seating capacity of about 1000. There is no stage; main floor seating was removed, and the orchestra was placed virtually in the middle of the room. The basic four microphones were supplemented only with an additional pair above the woodwinds. The sound has precise imaging, with special emphasis on front-back relationships. Listen to the positioning of the trumpet call at the close of the woodwind chorale (at 1:06). Then note the precise lateral localization of the string entrances as the sections enter sequentially, beginning with unison cellos and basses on the right and moving on to the first violins on the left.

Strauss: Excerpt from *Josephslegende*. Seattle Symphony, Gerard Schwarz, conductor. Here, the main challenge in recording is to clarify Strauss' complex scoring without losing the grand sweep of the music. We settled for a "middle perspective" in the Opera House since that met the musical requirements. Ten microphones were used, but the major load was carried by the four across the front. Maestro Schwarz's preferred string seating (from left to right: first violins, cellos, violas, second violins, with basses in back of the first violins), as heard in tracks 1, 3, 4, 5, 9, 11, and 13, is somewhat modified here due to Strauss' division of the violins. They play in three groups, rather than the usual two, throughout *Josephslegende*. The entire violin section was seated in an arc around the podium (firsts left, seconds center, thirds right); behind them, forming another left-to-right arc, basses, cellos, and violas.

Bartok: Excerpt from *The Miraculous Mandarin*. Seattle Symphony, Gerard Schwarz, conductor. If the preceding selection represents a middle perspective in the Seattle Opera House, then the Bartok represents a close one. The main challenge was to preserve good string and wind balance in the presence of very active percussion and brass writing. The common pitfall here is moving in too close to the violins, thus getting an overly bright string sound. Careful positioning of the frontal microphones so that they were slightly off the normal radiating axis of the violins made it possible to move in closer to those instruments without the accustomed stridency.

Haydn: Excerpt from *Piano Concerto No. 5, Adagio*. Carol Rosenberger, piano; Scottish Chamber Orchestra, Gerard Schwarz, conductor. The basic setup is the same as in the earlier Haydn selection, with the addition of a stereo pair of

microphones for piano pickup. The intent was to integrate the piano (with cover removed) into the orchestral texture, rather than spotlight it as a solo instrument.

Villa-Lobos: Largo from *Fantasia for Cello and Orchestra*. Janos Starker, cello; Paraiba Symphony Orchestra, Eleazar de Carvalho, conductor. Starker's soaring cello benefits from a single accent microphone against an orchestral pickup which emphasizes rich orchestral textures. Hall microphones were used for added ambience, and an accent microphone on the first stand of basses balanced the strings appropriately.

Kodaly: *Hary Janos Suite, "The Viennese Musical Clock."* Seattle Symphony, Gerard Schwarz, conductor. This excerpt features winds, brass, and percussion. The intent was to place the orchestral resources in a perspective marginally less present than in the Bartok *Mandarin*. The hall microphones were accordingly raised a bit. Otherwise, the basic setup is the same as in the Bartok excerpt.

Tchaikovsky: Excerpt from *Hamlet*. Oregon Symphony Orchestra, James DePreist, conductor. For the heroic scale of Tchaikovsky's Shakesperean overtures (and the *1812 Overture*, which rounds out this particular disc), the intimacy of the Schnitzer Concert Hall was felt to be a little constricting. We therefore treated the entire seating area with polyethylene plastic sheeting, an old recording trick frequently used by the British Decca recording teams. The plastic is only four-thousandths of an inch thick, and is virtually transparent to sounds impinging at normal incidence. However, acoustical energy from the stage strikes the plastic at low grazing angles of incidence and is effectively reflected. The result is added liveness at mid and high frequencies, which will be immediately apparent.

Piston: Excerpt from *Symphony No. 2*. Seattle Symphony, Gerard Schwarz, conductor. This final portion of the first movement illustrates Piston's highly colorful scoring. A mid perspective was chosen to make sure that *tuttis* were well blended, and that passages calling on individual orchestral sections (e.g., the brass chorale at the very end) would spotlight those players with just enough "air" around them.

Hanson: Finale from *Symphony No. 2, "Romantic."* Seattle Symphony, Gerard Schwarz, conductor. The basic approach is, again, mid perspective in the Seattle Opera House. Listen for the glorious horn calls, heard at stereo left, against string pizzicatos in the foreground (at 2:48). As the work builds, the bandwidth and clarity of digital recording are put to a test which the analog stereo LP could never pass. All in all, a fitting climax to this new *Sound Stage* disc.

These notes have underscored the differences and subtleties in recording techniques which grow out of musical requirements. No change is too small to be noticed, and it may come as a surprise to the reader to realize that, in these excerpts, the maximum variation in the positions of the basic four microphones in the Seattle Opera House was no more than eighteen inches in fore-aft or up-down directions. Relative balances between microphones are of equal or greater importance.

Delos and Technology

Delos has been at the vanguard of digital recording since its inception, and the company was the first ever to purchase one of the legendary Soundstream digital recorders. Delos engineering teams are constantly evaluating consoles, digital recorders, and microphones in an ongoing effort to improve the quality of the company's product. The company also works closely in evaluation programs with manufacturers of Compact Discs and audio playback hardware. Delos is passionately devoted to its artists, and the company's chief aim is to further their musical work through better technology.

John Eargle, Director of Recording

"The name **John Eargle** is familiar to anyone involved in professional audio," wrote George Peterson in a recent interview for *Mix Magazine*. During the past 25 years Mr. Eargle's distinguished career has included work with RCA and Mercury records, a 1974-75 term as president of the Audio Engineering Society, teaching positions on the faculties of the Aspen and Eastman Schools of Music, and extensive work as a consultant for leading audio manufacturers such as JBL. Mr. Eargle is an organist and a pianist.

Mr. Eargle's vast contributions to the field of audio engineering also comprise three



books on sound recording which are "bibles" of the industry. The first edition of *Sound Recording* appeared in 1976 and was followed by a second edition in 1980 which *Audio* deemed "one of the definitive college-level texts in the field." In 1982 John Eargle wrote *The Microphone Handbook*, and most recently he has completed his *Handbook of Recording Engineering* which he considers a logical outgrowth of his earlier work. "Mr. Eargle's chapter on stereo imaging should be required reading for all who can't see beyond the multi-track recorder," wrote *Audio*. In addition to his three books, John Eargle has written over 100 technical articles and papers.

Mr. Eargle has worked with Delos International since 1979. He has engineered many of the company's orchestral, vocal, piano, organ, and jazz recordings, including Joe Williams' acclaimed *Nothin' But The Blues* which won a Grammy in 1985.

Currently Director of Recording for Delos International, Inc., John Eargle oversees every technical aspect of the company's classical and jazz projects and pursues the creation of a symphonic sound stage which has become a Delos hallmark.

Recording Engineer for tracks 1–9 and 11–13: *John Eargle* / track 10: *Laura J. Wirthlin*
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DELOS INTERNATIONAL

*setting new standards
in audiophile-quality recordings*

Delos was named for the Greek Island where, according to Greek Mythology, the Sun God Apollo, the God of Music, was born. According to legend, Apollo set out from Delos every morning, lyre in hand, bringing light and music to the world.

In 1973, Delos' founder Amelia S. Haygood had a vision — a recording company which could bring a special kind of music-making to the world, borne on the wings of the finest and clearest of recorded sound.

To this day, the Delos founder and her dedicated production team hold fast to that vision as they set new standards in audiophile-quality recordings. The Delos collection illuminates the special message of today's American artist, with strong roots in European culture, yet with a distinctly American spirit — freshness of imagination, vitality of performance and originality in programming. Working closely with a group of talented classical artists, the Delos team is tireless in its pursuit of excellence, insuring the consistency of musical and sonic leadership for which Delos is known.

"Thank God for small companies like Delos with its pursuit of excellence"
William Livingstone, *Stereo Review*

**"Models of the art — wide dynamics, subterranean bass, and great
orchestral definition, depth, and ambience."**
Bert Whyte, *Audio*

"Sets new standards...long a leader in audiophile-quality recordings"
Gerald Gold, *The New York Times*

**"All of this attention to detail pays off with clean sound and a phenomenal sound
stage."**
Andrew Taylor, *Digital Audio*



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