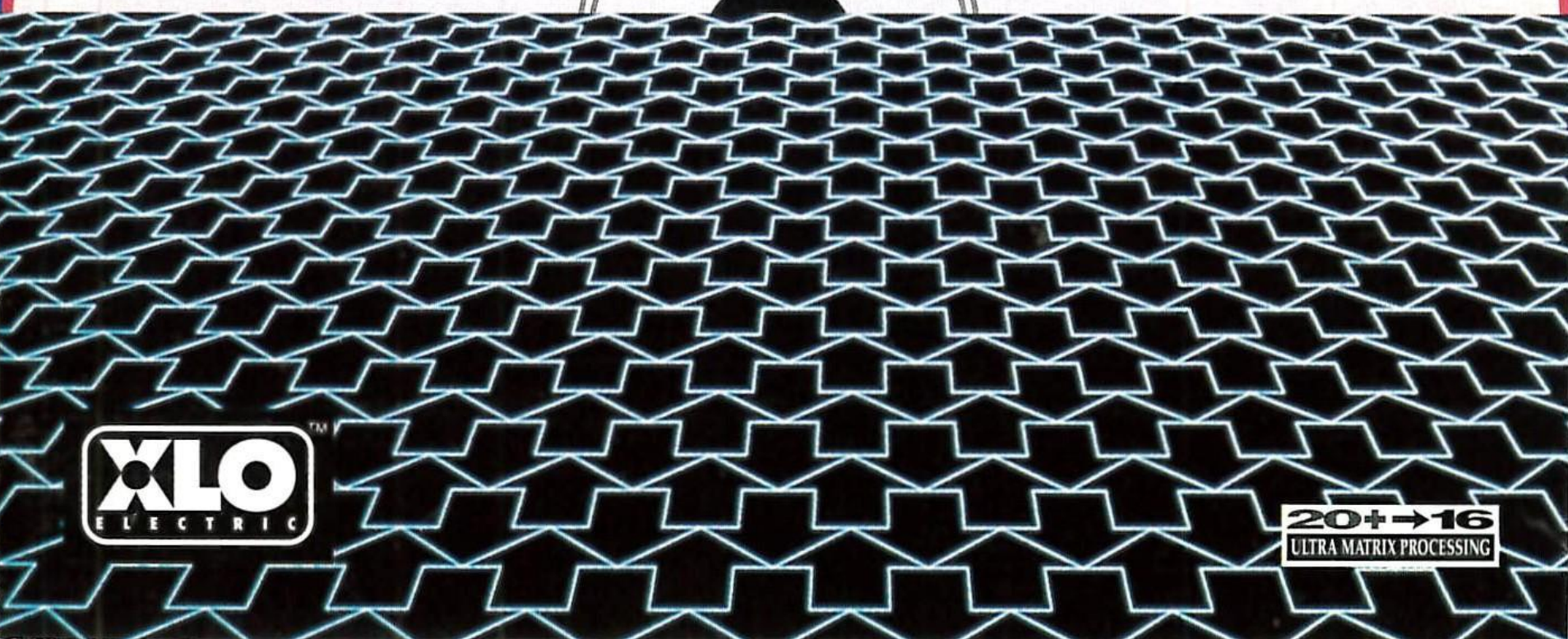
THE AUDIOPHILE REFERENCE SERIES™

The Sheffield/XLO Test & Burn-in CD



XLO™ ELECTRIC

20+→16 ULTRA MATRIX PROCESSING

SHEFFIELD/XLO TEST AND BURN-IN CD

Technical Notes by Roger Skoff

TRACK 1: Channel Identification and Channel Balance (0:34)

Channel Identification. For System setup. Allows you to verify that your System's Right and Left channels are positioned properly, and not reversed. Channel reversal, either from a single source or from all sources (CD, LP, tuner, etc.) can easily come about as the result of mistakenly plugging just ONE pair of cables into your System in reversed order (Left-channel plug into Right-channel jack, and vice versa). This sort of problem is most common in cases where new equipment is added to an existing System, old equipment is removed and replaced, or, as for A-B comparisons, equipment is temporarily plugged into the System and then removed. Always check for channel reversal if you have been making changes to your System.

Channel Balance. Particularly for recordings made using a "coincident" microphone technique (which eliminates phase differences at the microphone position), having your System's channels precisely in balance is crucial to correct imaging and spatial representation. This mono channel balance test provides phase-correct AMPLITUDE ONLY information to enable you to achieve near-perfect channel balance "by ear".

TRACK 2: Relative Phase Test (0:39)

AN "IN-PHASE/ OUT OF PHASE" RECORDING OF THIS TYPE IS THE VERY BEST TOOL YOU CAN USE TO MAKE SURE YOUR SPEAKERS ARE PROPERLY WIRED AND PROPERLY PLACED. IT CAN EVEN HELP YOU TO IMPROVE THE ACOUSTICS OF YOUR LISTENING ROOM!

A. *Properly Wired*

As applied to loudspeakers, the term "Relative Phase" refers to the movement of the speaker system's driver elements (usually cones, domes, panels or ribbons) in response to a signal of known polarity. If the elements of both the Left and Right loudspeakers move IN THE SAME DIRECTION [forward] for a given [positive] signal, and do so at the same time, the speakers are IN correct relative phase. If they move in OPPOSITE directions (one forward, one back), they are OUT OF correct relative phase.

The result of speakers being out of relative phase is that imaging specificity is lost and, because the Right and Left channel woofers at least partially cancel each other, bass energy and volume are greatly reduced. If this is NOT what you hear when you play the OUT OF PHASE section of this track; if, instead, you find that the OUT OF PHASE section images BETTER than the IN PHASE section, or that Roger Skoff's voice has more bass content OUT OF PHASE than it does IN PHASE, there's something wrong with your System, and the odds are that ONE of your loudspeakers is wired incorrectly.

To fix it, check your speaker cables at both their amplifier and loudspeaker ends. When you find the end that has its leads hooked-up POSITIVE to NEGATIVE and NEGATIVE to POSITIVE, instead of POSITIVE to POSITIVE and NEGATIVE to NEGATIVE, as they should be, just re-make those connections, and your problem will disappear.

B. *Properly Placed*

The cancellations that result from an "out-of-relative-phase" condition can help you "dial-in" the positioning of your loudspeakers easily and precisely.

WHEN PLAYING IDENTICAL OUT OF PHASE SIGNALS, PERFECTLY MATCHED LOUDSPEAKERS, PERFECTLY PLACED, IN A PERFECT LISTENING ROOM, WILL

PERFECTLY CANCEL ALL OF THE SONIC INFORMATION WHICH WOULD NORMALLY APPEAR TO COME DIRECTLY FROM THE SPEAKERS, OR FROM BEHIND OR BETWEEN THEM. THE ONLY SOUND THAT WILL BE HEARD WILL BE FROM UNCANCELLED ENERGY REACHING THE LISTENER INDIRECTLY AS WALL, CEILING, OR FLOOR REFLECTIONS, AND THIS WILL SEEM TO HAVE NO APPARENT SOURCE.

Although none of the above "Perfects" may actually be possible to achieve in the real world, it IS possible to come close, and by doing so, you will GREATLY improve your System's soundstaging, imaging and focus.

Start by positioning your speakers as well as you can "by ear" and by using the appropriate other tracks on this CD. Then, after making sure that the channels are balanced correctly, sit exactly in the "sweet spot" (usually dead center, between your speakers), and play the OUT OF PHASE section of this track. Listen carefully: Where does the voice sound like it's coming from? If it seems to have a definite source, move ONLY the speaker nearer to the apparent source a SMALL DISTANCE (less than an inch may be sufficient) farther away from you. What does that do to the sound when you play the track again? Keep repeating the process, moving your speakers ONE AT A TIME, IN SMALL INCREMENTS, forward, backward, and to the sides, until you have gotten as close as you can to the ideal no-image "sourceless" sound. Then change your listening position to slightly one side of the sweet spot, and start all over again. When you've gotten the greatest cancellation possible at the broadest possible range of listening positions, you're finished! Put on one of this CDs Sheffield Lab Audiophile Reference Series music tracks, and prepare to have your socks knocked off!

C. *Improving Listening Room Acoustics*

After you have canceled as much as possible of the direct sound from your speakers, a substantial part of the sound that remains will be the result of room reflections.

These reflections can be caused by any acoustically hard surface, including walls, uncarpeted floors, untreated ceilings, window glass, mirrors, pictures, and even some furniture, and can come from anywhere at all in the room — above, below, to the sides of, or even behind your listening position.

Although a certain amount of "liveness" is to be desired in a good listening room, coherent reflections reaching the listening position can only hurt imaging and diminish the quality of spatial representation. To eliminate them, the first step is to FIND them, and that's how this track can help.

Seated in your normal position, play the OUT OF PHASE portion of this track and listen carefully to locate the sources of reflected sound. These are the acoustical "problem spots" in your room, and once you've identified them, you can apply whatever acoustical treatments may be necessary. Remember, though, that every time you make an acoustical change, you MUST re-check the placement of your speakers for optimum cancellation.

TRACK 3: "Walkaround" (2:58)

This track was recorded in a "live" room, 32 feet long, by 18 feet wide, with a 13 foot ceiling. A closely matched pair of classic AKG C24 vacuum tube stereo microphones was used, in matrixed array, and, if your System can reproduce it, you will find that the spatial representation is simply phenomenal!

That's the point of this track – to see exactly how well your system can reproduce space.

Doug Sax walks around the room with a pair of claves (wooden "click sticks"), talking and clicking the claves. As he moves, he tells exactly where he is in relation to the

microphones. When he finally stops in the center of the room (about 6' from the microphones), he's joined by Roger Skoff (about 8' further back), and they both start talking at the same time!

Not only does this track give you a verifiable check of your System's ability to image and accurately reproduce a soundstage, unraveling the two voices and BEING ABLE TO UNDERSTAND WHAT B@TH ARE SAYING constitutes a supreme test of its resolution and clarity!

TRACK 4: "Clap Track" for Acoustical and Loudspeaker Evaluation (1:09)

When Recording Engineers or Acousticians enter a new studio or listening environment, the very first thing most will do is to move around the room clapping their hands. The purpose of this is to learn the room's "sound", and to get an idea of the kind, intensity and duration of its echoes. This is useful information, and constitutes much of the basis for any plan for either effectively using or acoustically treating the room.

A problem, though, with walking around a room clapping, is that as you walk around, the clapping – your "test signal" – walks around WITH you, giving inconstant "readings". Another problem is that NO TWO HANDCLAPS SOUND EXACTLY ALIKE, so differences heard at two different points in the same room MIGHT be the result of different acoustics, or they MIGHT be just the result of different-sounding handclaps, and without further testing, THERE'S NO WAY TO TELL.

This track solves both of these problems, and gives you one of the most useful tools available for quick evaluation of both your room acoustics and the directional characteristics of your loudspeakers. Multiple repetitions of the same ONE HANDCLAP are recorded to give you total constancy of both source and signal, so that, as you listen

from different points in your room, you can be CERTAIN that any differences you hear result from either inconsistencies in the acoustics of your listening room or frequency-related differences in the dispersion patterns of your loudspeakers.

TRACK 5: 315 Hz. System Setup and Balance Tone (1:00)

While setting channel balance or overall volume level "by ear" is sufficient for most purposes, there are times when the ability to set levels EXACTLY can be of value. One of these is when setting-up speakers or dialing-in room acoustics, using TRACK 2 of this recording. Another is when doing A-B comparisons of different components: Because whichever component is LOUDER is usually perceived as being BETTER, it's absolutely ESSENTIAL for accurate evaluation that the auditioning playback levels for both components be EXACTLY THE SAME.

Using this track and a simple digital multimeter (available at most electronics supply stores for around $30) will allow you to set levels very precisely — usually to within one millivolt!

To check channel balance, set the multimeter to read AC Volts, and adjust the SCALE to either 2 VOLTS or 20 VOLTS, whichever is available. On "autoranging" multimeters, this adjustment will be made automatically. Playing this track AT YOUR NORMAL LISTENING VOLUME, touch the multimeter's two test leads to the LEFT CHANNEL speaker output of your amplifier (RED to POSITIVE and BLACK to NEGATIVE [GROUND]) and notice the reading of the meter (0.915 Volts, for example). Now transfer the test leads to the RIGHT CHANNEL speaker outputs, play this track again, and adjust the balance control to bring the right channel output to the same reading as the left. Keep checking and re-setting BOTH channels until the readings for both are identical.

To match levels for component evaluation, the procedure is similar to the above: Measure the output of component "A" at the amplifier terminals, (just one channel will usually be sufficient), get a reading, then switch to component "B", and set your output level to the same figure as for "A".

TRACK 6: Demagnetizing sweep (0:55)

Recording Engineers have long been aware that a build-up of residual magnetism can affect the sound of a playback system, and since the earliest days of analog recording on tape, regular de-magnetization of tape heads – as often as prior to every use – has been standard studio procedure.

For tape recording, magnetic buildup is to be expected – tape is, after all, a magnetic medium, and tape heads rely on magnetism to operate. In recent years, however, it has also been learned that phono cartridges and even such apparently non-magnetic elements of a playback system as its copper internal wiring and circuit board traces, component mounting leads, crossover inductors, connectors, cables and loudspeaker voice coils can and do become magnetized and result in an audible degradation of system sound quality.

This magnetization comes about because wherever there is a flow of electric current, an electromagnetic field is formed around the conductor, which, if it is made of or contains magnetizable metals (iron, nickel and cobalt – the "iron triad"), will tend to leave the conductor with a residual magnetic "charge".

The leads of many capacitors and resistors are made of copper-plated steel; most connectors — even "gold-plated" ones — have a highly magnetic nickel underplate; and many transistors pass current through their steel outer cases. The possibilities

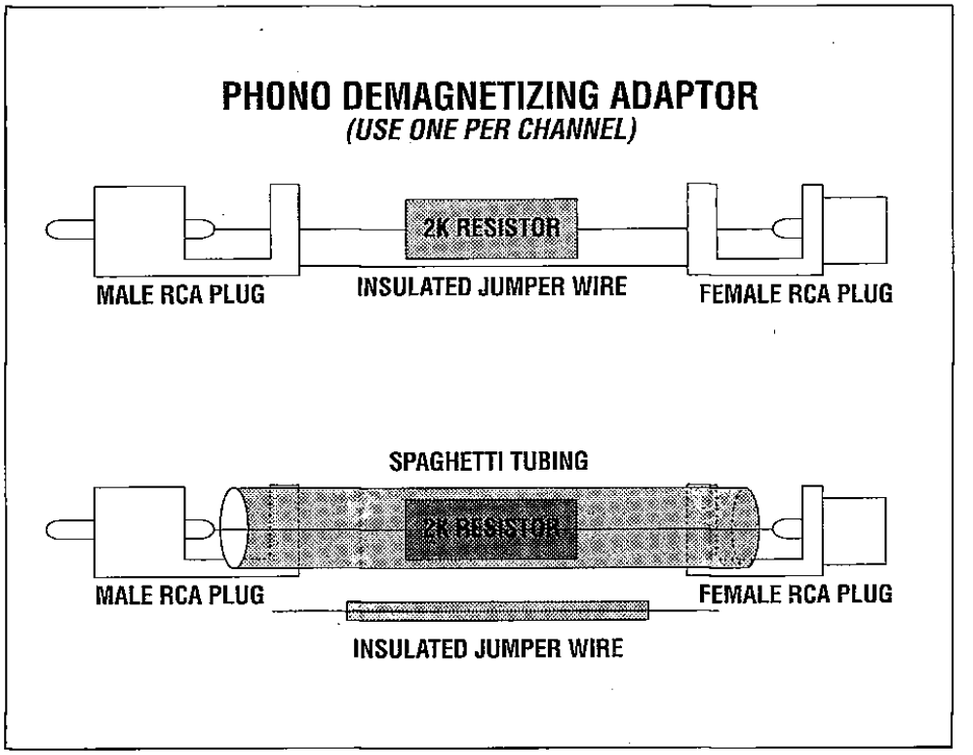
for residual magnetism here are obvious, but how can a pure copper wire, like those in a cable or the windings of a phono cartridge become magnetized?

The fact is that copper is NEVER 100% pure. It ALWAYS contains impurities, among the more common of which are the metals of the iron triad. These ferrous metals do not alloy with their copper matrix, but instead remain in relatively pure concentrations at the junctures between copper crystals, where, when current flow is present, they can easily become magnetized to interfere with the sound of your system

This track is a specially recorded 40 Hz to 19 kHz rising frequency sweep at constant amplitude. Playing it sends a signal through your entire audio system, from CD player to speakers, that will, after just one or two playings, randomize spurious residual magnetism and restore your system to peak performance. The **demagnetizing signal** is safe for you, your pets and your system **at NORMAL listening levels.** Remember that continuous very high frequency signals can damage tweeters if played too loudly, even if your ears do not perceive them as being excessively loud. The sweeps should sound clean and no audible buzzing should be heard. Buzzing from the speakers, while playing these sweeps, can indicate natural resonances or excessive volume. A good idea with most speakers, is to regularly check the tightness of all screws and fittings of the drivers and the enclosure. Demagnetizing your system at moderate levels will ensure that everything you play – even non-Sheffield recordings – will sound noticeably better for days to come.

IMPORTANT NOTE: To demagnetize phono cartridges, current limiting adaptors must be made. These will protect both the phono cartridge and the preamplifier from excessive current flow. To make this adaptor (one for each channel), solder a 2 kOhm resistor between the contacts of a male and a female RCA connector as shown in the diagram on next page. Insulate the resistor and its leads with "spaghetti tubing," then solder an insulated wire between the ground contacts of the two connectors. The

parts for these adaptors are available at any electronics supply house. Small 1/4 or 1/2 watt resistors are adequate, and tolerance is not critical. Plug these adaptors into the Main or Tape Output of your preamp, then plug your phono cables into these adaptors. Adjust the preamp volume to a normal listening level, ***AND PLAY ONLY THIS TRACK.*** This procedure will demagnetize both the cartridge and the phono cable at the same time. If you have a moving coil type cartridge with a transformer, ***DO NOT LEAVE THE TRANSFORMER IN LINE,*** as this could potentially damage the transformer and the cartridge. After demagnetizing, remove the adaptor and re-plug the turntable into the phono input. ***MAKE SURE YOU CAREFULLY TIME TRACK 6. Do not play beyond 0:55. At end of Track 6, stop disc before proceeding to Track 7.***



TRACK 7: Low Frequency Demagnetizing Fade (1:00)

WARNING: **DO NOT USE THIS TRACK FOR PHONO CARTRIDGE DEMAGNETIZATION. SEVERE CARTRIDGE DAMAGE MAY RESULT.**

Because their crossover networks block out all of the upper frequencies, the low frequency power amplifiers and bass speakers of bi- or tri-amplified Systems and the woofers of conventional loudspeaker systems will not gain the full benefit of the demagnetizing sweep in TRACK 6. This track (TRACK 7) contains a specially recorded

declining amplitude fixed frequency tone intended specifically to demagnetize low frequency components. Just play it a few times through your System at normal volume. It will help "clean up" bass performance, and can do no damage to the rest of your System.

TRACK 8: Burn-in Tones (12:00)

WARNING: NOT FOR PHONO CARTRIDGES.

EVERYTHING IN YOUR SYSTEM NEEDS TO BE "BURNED-IN". Amplifiers, preamps, tuners, CD players, and other electronic devices all sound better after several hours to several days of continuous playing than they do "fresh out of the box". Loudspeakers need electrical burn-in for the "passive" electronic components in their crossovers AND mechanical "break-in" for their drivers. Cables, both interconnects and speaker cables, need burn-in to "form" the dielectrics of their insulation and to bring them up to peak performance.

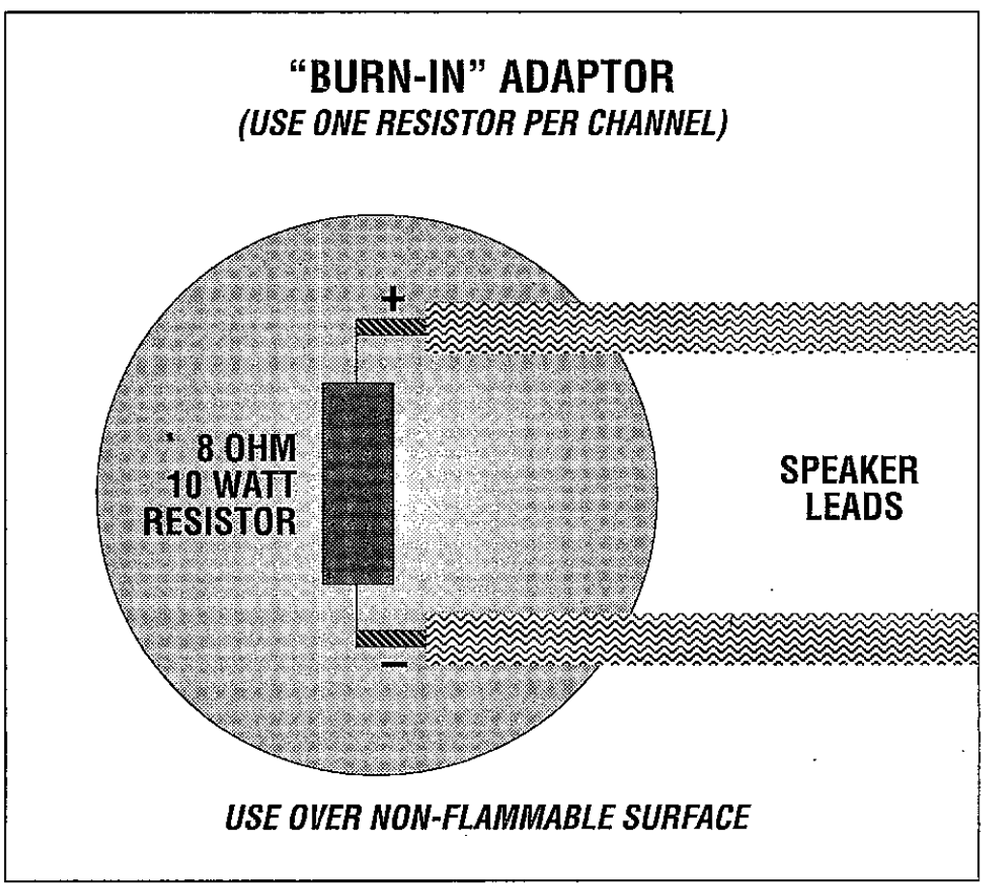
This track is carefully engineered to provide maximum burn-in effectiveness (both electronic and mechanical), for all of the components of your system, except phono cartridges, which, instead of electrical burn-in, require mechanical "break-in" consisting of several hours of use.

To use this track, set the TRACK REPEAT or LOOPING control of your CD player for continuous play, and allow the track to repeat for the component or cable manufacturer's recommended burn-in period. If your CD player has no track repeat or looping functions, set it on "regular" REPEAT for a longer period of time. REPEATING THIS ENTIRE CD CONTINUOUSLY FOR THE FULL BURN-IN PERIOD CAN DO NO HARM TO ANY COMPONENT. IT WILL JUST TAKE LONGER FOR COMPLETE BURN-IN.

Burn-in of most electronic devices can be accomplished with everything AFTER THEM in the playback chain turned off (e.g. if you wish to burn-in your CD player and the cable that runs from it to the preamp, but NOT the preamp, itself, your preamp can be turned off.) This will avoid having to listen to the burn-in signal while it works.

Preamps should be burned-in INDIVIDUALLY on EACH INPUT, for maximum benefit. Each of your preamp's line-level inputs should be burned-in separately. Because of the high additional level of gain, **THIS TRACK SHOULD NOT BE USED TO BURN-IN PHONO INPUTS.**

Power amplifiers must be ON, and playing at normal levels while burning-in, but to avoid listening to the burn-in tones, you may temporarily replace your loudspeakers with **8 Ohm ceramic power resistors of at least a 10 Watt rating**. These are available very cheaply at any electronics supply store. The best place to connect these resistors (one per channel) is at the loudspeaker ends of the speaker cables. Being very careful not to touch the two leads of the speaker cable together directly, disconnect the speakers, and run the resistors from the positive lead to the negative lead of each cable, so that the body of the resistor separates the two leads. No soldering or special connection is required – just wrap the bare lead from the resistor around the spade lug or other connector at the end of the speaker



lead tightly enough to make electrical contact. Placing the resistors this way will burn-in the speaker cable at the same time as the amplifier, and will avoid accidentally "shorting" the amplifier while trying to attach the resistors directly across the amplifier output terminals. **BE VERY CAREFUL WHERE YOU PLACE THESE RESISTORS.** Resistors convert electrical energy into heat. If fed too much power they will heat up to potentially dangerous levels. **USE CAUTION:** Make sure to place the resistor/wire on a non-flammable surface such as a glass plate or other such surface. An easy test for excess burn-in volume level is to touch the resistors after a few minutes of operation. If they are more than moderately warm to the touch, your level is too high, and you should decrease the volume.

Most loudspeakers require SUBSTANTIAL burn-in time (as much as 200 hours) before achieving full performance. THERE IS NO WAY THAT THIS CAN BE DONE SILENTLY, but burn-in noise levels can be reduced considerably by doing the following: Place the two loudspeaker systems face-to-face, as close together as possible (touching is good), with the leads to ONE speaker wired OUT OF PHASE (RED to BLACK/BLACK to RED). Throw a blanket or other sound deadening material over both speakers, and play this track CONTINUOUSLY **(AT SLIGHTLY LESS THAN "NORMAL LISTENING" LEVELS)** for the manufacturer's recommended burn-in period. The out-of-phase wiring will cause the sound from the two speakers to (more or less) cancel, and the blanket will help to smother much of the remaining sound.

SHEFFIELD LAB MUSIC TRACKS

Technical Notes by Doug Sax

TRACK 9: "Poor Boy," Michael Ruff [Speaking in Melodies; 10035-2] (7:03)

Engineered by the justly famous George Massenburg, this recording combines the technologies of GML's class A solid state electronics, line level mixer, and George's cache of selected tube microphones, with Sheffield's own tube microphones and pre-amps. The goal was to produce a natural textured recording with true audiophile clarity for Michael Ruff's unique music. I draw attention to the warmth of the trombone solo, the full range detail of Sheffield's microphones on the overhead of the drums, and the unforced presence of Michael singing into George's impeccable Neumann U 67 feeding into our tube pre-amp. As the song builds, listen to the headroom of the snare drum. All of the percussion are faithfully captured by full range ribbon microphones. This recording was made to our 1/2 inch Ampex ATR on Ampex 499 tape.

TRACK 10: Prokofiev, Excerpts from "Romeo and Juliet" (7:30)

This recording of the LA Philharmonic, conducted by the late Erich Leinsdorf, was our first symphonic venture, and was recorded at the MGM Sound Stage One. We used a single stereo microphone employed in the classic M-S technique. The coherency of the sound stage, stable placement of the soloists, and the superb sense of depth are the virtues of this recording technique. The balance of all the orchestral elements are precisely as the ear would naturally perceive them. This award-winning recording has proven to be one of the most popular in our catalog, and we are reissuing it in the Spring of 1994, remastered using our new **20+→16** process.

TRACK 11: Strauss, Sonata in E flat Major, Opus 18. (Finale: Andante-Allegro) Arnold Steinhardt, violin; Lincoln Mayorga, piano [10039-2] (8:23)

Our newest classical release (Feb. 1994) was also recorded at MGM, and uses our all-tube, transformerless microphone in the M-S technique. This recording presents the best example of the merits of M-S technique that I have ever produced. It is, quite simply, the Sheffield Lab recording that I would want to take with me to that proverbial desert island.

TRACK 12: "Just Ahead," Pat Coil [Just Ahead, 10034-2] (5:29)

This track is selected from our second Pat Coil album. Mastered by George Massenburg, Just Ahead features Sheffield's stereo microphone on Pat's piano, our tube microphones on the overhead drums, and a particularly punchy bass sound. The clarity, natural openness, and uncompressed dynamics that are hallmarks of the Sheffield Sound, are all abundantly displayed here.

TRACK 13: "Summertime," featuring Lincoln Mayorga, piano (3:51)

This impromptu jam during our historic Moscow Sessions was captured with the microphones still in position to record a full orchestra, not a three-piece ensemble. In addition to pianist Lincoln Mayorga, you are hearing Stan Ricker on bass (formerly of MFSL and engineering assistant on this project), and Arkadi Shilkloper on french horn, from the Moscow Philharmonic. Listen to how clearly the stage responds to the energy of the various instruments. Keith Johnson of Reference Recordings engineered our recordings of the Moscow Philharmonic, and the results of this unplanned jam remind me of live jazz recordings from my youth. An all-Gershwin celebration recording featuring Lincoln Mayorga with the Moscow Philharmonic will be released in the Summer of 1994, using our **new 20+→16 process.**

TRACK 14 "Poor Boy" Excerpt: Mono Version (3:47)

Here's a test that the "experts" have had all to themselves for at least the last 30 years: a monophonic recording! In mono, both channels carry exactly the same information, at exactly the same level, in exactly the same "phase", so spatial information, which relies on differences in phase and amplitude between the two channels is ENTIRELY LACKING. Playing a mono recording through a stereo System should result in all of the sound appearing to come from a single point, exactly midway between the two speakers. The general rule is, "The smaller the point the better." A big "blob" of sound, or instruments or voices "moving around" or appearing to come from different locations indicates that either the frequency response of the two speakers is not identical, the acoustics of the room locations of the two speakers are not identical, or there are anomalies in the speakers' dispersion patterns. An interesting effect of this (and a great quick test of the imaging ability of a pair of speakers) is that, in general, the smaller the point to which a pair of speakers will "image" in mono, the better they will image in stereo.

Since the advent of digital recording, critical ears have detected faults in the 16 bit sampling format being used to store the analog information. In particular, the frequency response is not sufficient for proper resolution of the highest overtones, and the low level resolution did not match the fine detail and ambience retention so characteristic of analog recording.

This recording features a breakthrough in CD sound quality. The music tracks use our new Ultra-Analog based 20 bit+ A/D converter fed into the Apogee UV 22 encoder. This process allows for up to 15db of low level signal that is below the 16 bit noise floor to be encoded on CD. The results, as you will agree from listening to the preceding tracks, are simply stunning. **Watch for future releases on 20+→16.**

About Doug Sax and Sheffield Lab

Doug Sax is one of the most highly sought after mastering engineers in the recording industry. As the principal architect of the legendary "Sheffield Sound," Doug's recordings and mastering techniques are prized by collectors around the world. His work in the analog domain, as evident in the recorded selections presented here, continue to set the audiophile reference standard.

Sheffield Lab was founded by Doug Sax and Lincoln Mayorga 25 years ago as an extension of their dream to hear music recorded and played back with the absolute highest sound quality possible. Their quest remains today to make recordings without compromise, that capture all the emotion and energy of live studio performances. Since pioneering the first modern direct disc in 1968, Sheffield Lab has continued to produce the finest source of musical and sonic fidelity available, both on 180 gram ultra-analog LPs and Compact Discs. All Sheffield products are manufactured from our live, two-track reference tapes, eliminating the multi-track tape recorder as a storage medium. This provides our products with a dramatic increase in natural dynamic range, frequency response, and transparency. Furthermore, all Sheffield Lab electronics are designed and refined by our own in-house technical staff, headed by Design and Development Engineer Steve Haselton. This provides us with unprecedented control over the entire recording chain, from our legendary all-tube cutting amplifiers of the 60s, to our current array of speakers and crossovers, and our all-tube amplifiers, preamplifiers, microphones, mic pre-amps, and mixing console.

We are proud that our award-winning "Natural Sound" has been chosen by many of the most respected names in high-end audio for custom projects to fully reveal the unique qualities of their hardware. These manufacturers rely on Sheffield to provide the musical source that is the first component of a true high-end system.

About Roger Skoff and XLO Electric Co., Inc.

XLO Electric is a young company that has very rapidly come to the forefront of its field. Since 1991, when the company was founded, XLO's products have gained enthusiastic acceptance by audiophiles around the world and been the subject of an ongoing series of rave reviews in the world audio press. XLO Electric Company has been nominated for DuPont's prestigious Plunkett Award for Technical Excellence and the Golden Note Award of the Academy for the Advance of High End Audio.

XLO Electric was started by Roger Skoff, who, like a number of other High-End luminaries (Conrad and Johnson, for example), is an economist by training. He was educated at UCLA; has been Director of Business Analysis for four divisions of International Industries, Inc., and has consulted to various companies, including a number listed on the Fortune 500.

Since the age of twelve Mr. Skoff has had an active and growing interest in sound and its transmission and reproduction. Besides a life-long commitment to the very finest in High Fidelity sound, he has, in addition to his regular professional career, worked as a recording engineer, a radio announcer, an audio equipment reviewer for Sounds Like... magazine, and as Editor of Sounds Like...News.

Mr. Skoff's active involvement in the design of high-performance audio cables began as a recreational math exercise in late 1986. This rapidly passed from a purely abstract theoretical study to the stage of concrete experimentation, and by 1988 the first of his cable designs; now known as XLO Electric TM Type 1, was completed.

Other designs followed, and by the time he started reviewing, most of the cables now comprising the XLO Electric Reference Series had been built and were incorporated into his Reference System for evaluating the performance of other High-End audio components. Because of the strict ethical requirements of reviewing, however, and

because Mr. Skoff had no intention whatsoever of offering his cables for sale, the cables were identified in his system only with a misleading "codename"; they were never written about; and their source was kept a strict secret, even to most other reviewers.

Some reviewers though, close friends of Mr. Skoff, not only knew the cables' source, but were even given some for use in their own reference systems. From this use, the word spread that a new "mystery cable" – of unknown origin, and not available at any price – was on the scene, and it quickly became the talk of audiophiles across the United States. When the truth finally leaked out, in November of 1990, at a meeting of the Audiophile Society in Westchester County, New York, Mr. Skoff received, within just a few weeks, nearly a hundred phone calls from enthusiastic audiophiles wanting to buy his cables.

The rest is history: In December, 1990, he took a leave-of-absence from the magazine, to prepare sample cables for trial introduction at the Winter Consumer Electronics Show of January, 1991. The response at the Show was immediate and overwhelming: Dealers in the United States and Distributors abroad WANTED the cables. The result was that Mr. Skoff's departure from the editorial field became permanent, and in March of 1991, XLO Electric Co., Inc. was formed.

XLO ELECTRIC COMPANY, INC.
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The Audio Industry's Choice for 25 years. Sheffield Lab has been selected by many of the most respected names in high-end audio manufacturing and testing to create custom projects using the "Sheffield Sound." Custom electronics throughout the entire recording chain, plus our legendary "live to two-track" engineering, combine to deliver all the musical excitement created by world-class musicians in live sessions. Connoisseurs agree that Sheffield Lab recordings deliver substantially greater transparency, phase linearity, and dynamic range.

The best hardware demands the best software to fully reveal the unique qualities of a manufacturer's technical expertise! Since our pioneer direct disc recordings in 1968, audiophiles the world over have relied on Sheffield to provide the musical source that is ***the first component of a true high-end system.***

1253 Coast Village Rd. Santa Barbara, CA 93108 805-969-4744 Fax: 800-576-5640

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