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Phono System Hum—How To Fix It Step By Step

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- 6 New Feature-Filled Cassette Decks

Field Test!
- JVC Video Deck With Dolby and Stereo

On Location!
- How Sony's PCM Digital Tape System Performed
Hi-Tech Midi Compo

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Sansui Midi Compo also includes a powerful amplifier and bass-enhancing speakers to give you the full feel and impact of the music. In any room.

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Sansui Electric Co., Ltd., Tokyo, Japan

Circle 14 on Reader-Service Card
AUDIO

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NOW YOU CAN HAVE DIGITAL RECORDING WHERE YOU WANT IT MOST: AT HOME.

There are moments when a musician is so inspired he stops making music and starts making magic. And, as most artists agree, these peak periods of supreme inspiration don't always occur in the clinical conditions of the recording studio.

Which explains why Sony, the inventor of digital audio processing, has just created the world's smallest, lightest and most compact digital audio processor—the PCM-F1.

Already toured by every major audio magazine, the PCM-F1 leaves one awestruck by its vital statistics* Its level of performance surpasses that of even the most sophisticated analog recording studio. Its unique 3-way power supply allows you to use it anytime, anywhere.

And because Sony consciously designed it without a built-in VCR, it can be used with any VCR—1/2 or 3/4 inch.

But perhaps its greatest feature is its price.

Obviously, we can go on and on about the brilliance of this new machine, but by now we figure you've heard enough about it and you're ready to go to your Sony dealer and hear it for yourself.

*Features and Specifications: Wow and Flutter — unmeasurable; dynamic range — greater than 95dB; distortion — less than 0.005%; frequency response — 10-20,000 Hz. ± 0.5 dB. Weight — 9 lbs.

SONY. The one and only.
Letters

Series Speakers

It was a pleasure to read your glowing review of the Sony STR-VX6 receiver [December 1981]. I believe, however, that you have done your readers a disservice by omitting any mention of the VX6’s peculiar speaker switching arrangement.

According to the owner’s manual, when two speaker sets are in use at the same time, they are connected in series. Unless the speakers are identical models, such an arrangement can cause serious variations in frequency response, depending on the impedance curves. Also, the damping will suffer.

I believe that your readers should be warned that this otherwise excellent receiver is suitable for use with only one set of speakers at a time. It would also be interesting to know why (considering the hefty 4-ohm output recorded by DSL) Sony recommends the use of only 8- or 16-ohm speakers.

Byron M. Roscoe
Acton, Mass.

Ikuo Kanayama of Sony replies: As Hoon Fidelio’s review demonstrates, the STR-VX6 delivers impressive performance into 4-ohm loads. If all 4-ohm speakers behaved like the 4-ohm resistor used in the test, Sony would naturally recommend the use of such speakers with the VX6. In reality, though, speaker impedance ratings are only nominal. Actual impedance rises and falls according to the frequency, and impedance can dip far below the nominal rating for wide portions of the frequency range. Such low impedance can undermine the reliability of a receiver, which is why most manufacturers use a safety margin of protection to that extent, the amplifier when it encounters dangerous low-impedance loads.

Although the VX6 performs well with many 4-ohm speakers, the conservatism of Sony’s engineers prevents them from making a blanket recommendation for 4-ohm capability. It is this conservatism that limits our formal recommendation to 8- and 16-ohm speakers.

In the case of the simultaneous use of two pairs of speakers, the manufacturer must choose between series connection (for higher impedance and therefore higher reliability) and parallel connection (for better sound, but at the risk of lower reliability). People typically use four speakers simultaneously for listening to background sounds, and therefore higher reliability is the preferred choice to avoid loading the amplifiers.

Misremembering Bayreuth

The confusingly worded editorial note appended to David Hamilton’s piece, “Misremembering Bayreuth” [April], implies that we at Discocorp knew all about Hamilton’s revelations, that we agreed with them, and that we had informed you that statements to that effect were inserted into the albums containing the questionable recordings. Not so! We were as shocked by the allegations contained in Hamilton’s piece as your readers must have been upon discovering what evil lurks in the rusty razor blade of a bearded old man wearing an eyepatch. Whoever he may be, he certainly is not one of us, because:

1. The entire contents of the Parsifal record (Discocorp IGI 379) derive from a 1976 broadcast of the Ring Cycle in Bayreuth recordings that aired over radio station Sender Freies Berlin. In a long and detailed introduction, Einhard Luther, a highly respected German authority on historic recordings, hailed the fragments as great discoveries drawn in part from the personal collection of Max Lorenz and in part from German radio transcriptions. We followed Luther’s attributions in our issue, except that our inquiries revealed that the opening selection had been augmented by the 1927 Polydor commercial discs, and that the selection attributed to Karl Muck came from a 1931 Funkstunde Berlin studio performance rather than from a live Bayreuth performance. (Information about the latter came from a music producer at Sender Freies Berlin.) We included these corrections in an errata sheet inserted into each album. Until the appearance of Hamilton’s review, then, we were unaware of any other discrepancies.

2. We had no reason to be suspicious because all of the major singers on the recordings are we who say they are (Hamilton doesn’t dispute that) and because we were supplied with a free tape of the selections and Luther’s spoken commentary by long-time well-wisher who had recorded the material.

3. We had no reason whatsoever to doubt the authenticity of the Götterdammerung selection (on Discocorp RR 540) prior to the Hamilton piece, because the entire contents of that record appeared more than a year before our release on a disc issued in France by the Societe Wilhelm Furtwängler (SWF 7802) as part of a three LP set, “Furtwängler a Bayreuth.” The French recording circulated widely in Europe and complemented previous issues given to us—Frida Leider and the American Furtwängler Societies. According to the French Furtwängler Society, no one seriously questioned the authenticity of the material. Again, as was the case with the Parsifal disc, the identity of the major singers was not an issue.

4. And again, because all of the major singers on the selections were certainly not one of us, because:

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That’s why Sony opts for the higher impedance and improved reliability of series connection for two speaker pairs. Although Mr. Roscoe finds this “peculiar,” a number of other receiver manufacturers are making the same decision. For the majority of four-speaker applications, series connection, with its emphasis on reliability, is a sensible choice.

Misremembering Bayreuth

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Nine independent reviews you should read before you buy a stereo cartridge.

"The XSW4000 emerges, clear winner."

Cover photo: George Mendz

This 16-page book of reviews from High Fidelity, Stereo Review and Stereo is available at your local audio dealer... or write to: Pickering & Co., 101 Sunnyside Blvd., Plainview, NY 11803

THE SOURCE OF PERFECTION

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But the Panasonic Supreme Series with Ambience doesn't stop there. There's pushbutton tuning. There's FM Optimizer for improved fringe area reception. INQ circuitry reduces noise and interference caused by passing traffic. The adaptive front end reduces FM fade and drift. There's Radio Monitor that lets you listen to the radio without ejecting the cassette. There's locking fast forward/rewind and more.

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Panasonic car audio
The driving force
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At Kenwood, we don't think that's playing fair. Which is why every one of our new Hi-Speed receivers offers a host of very intelligent engineering advances. Like Direct Coupled, Hi-Speed amplifier circuitry for absolutely brilliant musical clarity, down to 0Hz. And microprocessor controlled Quartz PLL Synthesizer tuning to give you perfect, drift-free FM reception.

We've even included the convenience of our computerized AutoScan tuning. And instant, automatic computer-memory tuning of 6 AM and 6 of your favorite FM stations.

But best of all, we didn't restrict all this intelligence to just our new KR-850 Hi-Speed receiver.

You can also find it on our new KR-830.

And our new KR-820.

And even our new Slimline KR-90.

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At your type of price.

KENWOOD®
The audio company that listens.
'83 Audio & Video Component Preview

Exciting trends and features emerge as the first of next year's models are unveiled.

Before long, new audio and video components will be appearing on dealers' shelves. The majority of the 1983 models were being introduced in Chicago at the Summer Consumer Electronics Show (one of the industry's two major annual trade shows) as this issue went to press. But several companies held special press briefings prior to the event, and their new products—some of which are displayed here—gave a good indication of what was to come in Chicago. Over the next few months, many of the models introduced at the CES will be discussed in our "High Fidelity News" and "Video Fronts" columns.

AUDIO

More than a dozen new components, two rack systems, and six models in the Intelligent Super Compo Series will soon be available from Sansui. Among the highlights is the company's flagship $950 Z-9000 receiver, which incorporates Super FeedForward, a design approach previously confined to the company's integrated amps. Rated at 120 watts (or 20 3/4 dBW) per channel, the Z-9000 features presets for sixteen stations, a seven-band graphic equalizer, a reverb amp with adjustable decay (from 0 to 3 seconds), and a three-program memory timer.

It takes only five seconds for the Compu-Tree circuit in Sansui's D-970 cassette deck to set tape bias, equalization, and sensitivity. Other features of the $650 recorder include Dolby B and C, a Hold-Back-Tension Servo for lower wow and flutter, a dual memory that can store sequential and nonsequential cuts that you have programmed.)

All controls and functions of Sansui's new P-L50 linear-tracking turntable are on the front panel. Features of this fully automatic $360 unit include random programming of as many as seven cuts and Compu Edit, which enables the P-L50 to operate automatically in tandem with certain Sansui cassette decks when taping from discs. (For example, the deck goes into PAUSE when the tonearm is shifting to a nonsequential cut that you have programmed.)

Luxman will be introducing its first tangential-tracking turntable this year. The company's two new cassette decks—with DBX and Dolby B noise reduction—and three new receivers all share an adjustable faceplate design called ServoFace: The controls are flush with the front panel (for a streamlined look) when the power is off and protrude for ease of operation when it is on. The controls are flush with the front panel (for a streamlined look) when the power is off and protrude for ease of operation when it is on. The top-of-the-line RX-103 receiver ($1,000) incorporates Computer Analyzed Tuning that automatically optimizes FM reception under a variety of conditions. There's also a twenty-four station memory, a built-in moving-coil head amp, and a wireless remote control. The RX-103 is rated at 90 watts (19 3/4 dBW) per channel.

Luxman's three-head cassette deck, the $500 KX-102, automatically adjusts equalization and bias, but also has provision for manually trimming bias ± 15%. Dolby B and DBX circuits are included.

Noise reduction is central to Onkyo's latest components. Two of the company's six new receivers incorporate CX decoders; Dolby B and C circuits are found in the TX-2035 cassette deck. Other introductions include integrated amplifiers, tuners, a second-generation dubbing cassette deck, loudspeakers, an equalizer, and Onkyo's Radion Series—matched components for assembling an integrated system. The $300 TA-2035 cassette deck has an Auto Music Search System that operates in both fast forward and rewind and enables you to sample sequentially the first ten seconds of each recorded selection. The unit has peak-level meters and variable bias adjustment; remote control is optional.

The TX-61 ($540) and TX-51 ($420) receivers have separate selector switches for their tape outputs, to enable listening to one source while recording from another. Other shared features include presets for sixteen stations, automatic scan tuning, and a built-in moving-coil head amp. The TX-61, which can retain volume settings in its memory, is rated at 60 watts (17 3/4 dBW) per channel, the TX-51 at 40 watts (16 dBW) per channel.

Among the most unusual aspects of Sony's new TC-FX1010 cassette deck ($650) is a self-monitoring circuit that constantly compares the tape and source signals.

IN SEPTEMBER'S ISSUE:

Complete coverage of the Summer Consumer Electronics Show, with details on the new tape decks, receivers, loudspeakers, phono cartridges, turntables, and other components introduced there—as well as analysis of important new trends.
during recording. If the circuit senses distortion due to too high an input signal, it lowers the recording levels in 1-dB steps until distortion stops. There's also an Audio Signal Processor that automatically calibrates tape bias, sensitivity, and recording levels; these settings can then be entered into memory. Sony's Independent Suspension three-head design is said to overcome many of the azimuth and tape-contact problems associated with conventional heads.

In the belief that remote control will play an increasingly important role in audio, the company has introduced the $350 RM-44, an outboard system designed to work with several of Sony's turntables and cassette decks as well as with the new, similarly styled ST-JX44 tuner and TA-AX44 amplifier. Sony will be offering more than two dozen new models in all, including receivers, front-loading turntables, low-mass moving-coil cartridges, equalizers, and two Music Lab prepackaged audio systems.

Highlighting Akai's new components are three receivers, the AA-R22, AA-R32, and AA-R42. Each uses a front-panel fluorescent screen to display the status of all elements in the signal path, including preset tone-control settings for each input. Bass, treble, tuning, balance, volume, and fade are all adjusted via continuous-level touchpads. Power ratings range from 30 watts (17¾ dBW) for the R42. Respective prices are $250 to $450.

Almost two dozen components (and eight prepackaged Concert Systems) have been added to Yamaha's extensive audio line. Among the many models are an audio timer, a graphic equalizer, a line of cassette taps, cassette decks, loudspeakers, power amplifiers, and preamps. The top-of-the-line C-70 preamp ($780) has solenoid switching with gold-plated contacts, a flip-down front panel that conceals a parametric equalizer, a Variagin volume control to reduce residual noise, and a choice of three phono-input capacitances.

Complementing the C-70 is the $950 M-7 power amplifier (above) rated at 200 watts (23 dBW) per channel. In addition to Yamaha's X power supply, the amp incorporates Zero Distortion Rule circuitry, designed to cancel distortion inherent in the amplification process while leaving the input signal intact. Dual switchable ranges and a peak-hold function are features of the C-70's twenty-segment LED peak-power output meters.

Yamaha's $350 K-500 cassette deck offers Dolby B and C noise reduction, automatic tape-type selection, and an optional remote control.

A versatile equalizer with one-third-octave bands is part of a new line from Technics that encompasses speaker systems, cassette decks, turntables, receivers, and an audio timer. The $500 SH-8065 graphic equalizer has a total of thirty-three bands for each channel, with additional controls at 16 Hz and 25 Hz. A reversible frequency-response function is said to enable you to flatten overall response from a speaker system. Determine the speaker/room curve with a spectrum analyzer, set up the equalizer's controls to correspond to the curve, and press CHARACTERISTICS. The 8065 inverts the curve, thereby flattening speaker response.

Twin ring coils in the new $300 EPC-305MC Mk.2 moving-coil cartridge substantially lower moving mass, which Technics says results in greatly extended high-frequency response. Other features include a tapered boron-pipe cantilever with a single-point suspension to provide improved imaging.

The company has outfitted its three new cassette decks—the RS-M275X ($600), the RS-M255X ($380), and the RS-M228X ($250)—with both Dolby B and DBX noise reduction. The M275X adds Dolby C, three-motor direct-drive operation, wide range (–40 to +18 dB) eight-segment bar meters with peak hold, a bias fine-adjustment control, and an electronic time-remaining counter.

The GX-F91 three-head cassette deck ($750) with Dolby B and C incorporates an unusual feature: a motor-driven flip-down front panel that covers all controls except the transport buttons. This top-of-the-line deck automatically sets equalization, bias, and sensitivity levels and will store four groups of settings in memory. Correct tape type is also selected automatically. Other features include Intro Scan, which samples ten seconds of each selection and then moves on to the next; Instant Program Location, which finds the beginning of selections in either rewind or fast forward; Auto Mute, which places a four-second gap between selections; and an automatic fader control. In addition to gold-plated input and output terminals, the GX-F91 has adjustable output- and headphone-level controls and a real-time counter.
A microcoil with just 1% of the weight of a conventional coil is the heart of JVC's MC-L10 moving-coil phonograph cartridge. According to the company, the coil's smaller size makes it possible to move it closer to the stylus end of the cantilever, thereby eliminating such problems as phase shift and transmission loss.

Also new from JVC is the T-X55 top-of-the-line AM/FM tuner. A built-in microcomputer automatically determines the optimum sensitivity, bandwidth, FM mode, and quieting-slope characteristic for each station; all of these parameters can be retained in Automemory. The tuner has a digital frequency readout that you can convert to a digital display of signal strength (in decibels per microvolt) by pressing FREQUENCY/DB.

JVC's 1983 lineup includes receivers, equalizers, tonearms, preamps, speakers, minisystems, cassette decks, and turntables (including a linear tracker). Among its new cassette recorders are a double-transport dubbing unit; a microcassette-format deck; a slim-design deck with the transport in a slide-out drawer; and the top-of-the-line DD-99, which incorporates JVC's B.E.S.T. automatic tape-tuning system.

**VIDEO**

The first look at 1983's video wares shows clearly that the field has progressed through its adolescence. Exciting new twists are appearing in every area, particularly that of the video cassette recorder. JVC, the company that introduced the VHS format some six years ago, will break new ground this year with its HR-C3U, a revolutionary 4⅓ pound VHS-C (the "C" is for compact) recorder. Using standard half-inch tape with a twenty-minute recording time, the cassette (called TC-20) for this deck is the size of a king-size cigarette pack. TC-20 tapes can also be played on a standard VHS deck via an adapter.

According to JVC, the C3U is a true portable deck and can be used as an adjunct to a total home video system, which might include a sophisticated programmable home deck, for example. The compact design was arrived at by placing the head motor within the head drum and by switching the reel motor's traditional belt drive to direct drive. JVC plans to offer the HR-C3U for about $700 late this fall.

Blank tape for the new format will be available from JVC, as well as from TDK and Fuji; JVC says that for the moment only it will offer the special compact/standard-format tape adapter. To use the adapter—which looks like an empty VHS shell—you place a TC-20 cassette into it and then flip up the back panel and move a lever to one side. This partially extracts the tape from the compact cassette and stretches it across the front of the adapter's shell so that it can be withdrawn and loaded by standard VHS decks for playback. At this point, the HR-C3U offers only one speed, SP, and the tape comes in only one length.

TDK, JVC, and Fuji all seem to feel that TC-20 recordings will be dubbed onto standard cassettes at some point, so they are using high-performance tape to help offset the 3-dB audio and video loss inherent in the dubbed process. TDK is using its Super...
Avilyn tape; Fuji and JVC both are using Super HG, which is said to offer a 4-dB better signal-to-noise ratio (for both audio and video) than standard formulations.

At the other end of the time spectrum, many manufacturers are offering longer VHS tapes. The new length, called T-160, provides a maximum recording time of eight hours at the slowest speed (SLP or EP, depending on the manufacturer’s designation). The old maximum was six hours. This new length is bound to cause some confusion, as many VHS VCRs have been referred to as having two-, four-, or six-hour recording/playback capability using T-120 tape. For this reason, we will hereafter refer to recorder speeds rather than recording times: SP for fast, LP for medium, and SLP or EP for slow speed.

Whether the format is VHS or Beta, many hardware manufacturers will be offering top-of-the-line VCRs whose numerous features will usually include remote control and, the latest design twist, front-panel loading. Typical of these new units is Toshiba’s V-9500. Priced at $1,390, this Beta deck uses a four-head design and offers double-speed review, variable fast forward and rewind at five to twenty times normal speed, and slow-motion at one-third to one-thirtieth normal speed. Other features include 117-channel tuning capability, memory rewind, and an eighteen-function wireless remote control.

Another trend seems to be the inclusion of Dolby noise reduction and stereo recording and playback capabilities. RCA’s new VGT-650 deck incorporates both features, as does JVC’s HR-7650U (see Hands-On Report, p. 42).

On the video disc front, the biggest news is improved audio quality. Pioneer will be offering, for about $800, its LD-1100 laser-disc player with CX noise reduction. RCA is expanding its line of CED players to four models, and the top unit will include stereo capability (a first for CED), remote control random-access and search functions, and a video output jack for connection to a video monitor. The yet-to-be-marketed VHD format will continue to attract attention; one source tells us that its often-delayed introduction has been bumped “for the last time” to the summer of 1983.

Projection television this year seems to be packing more into less space. Improvements in image-path design allow such models as Sony’s 45-inch screen KPR-4600 to occupy approximately the same floor space as a conventional 26-inch console model.

Finally, video cameras are evolving in two directions: low-cost, basic point-and-shoot units and high-end videophile designs. RCA’s new CC-015 (about $1,400) is typical of the latter. Featuring a Newvicon imaging tube, this model has a f/1.4 zoom lens and a new sonar automatic-focusing system, which is said to lock onto a subject faster and to be less prone to searching than other designs. It is also typical of the growing number of cameras that provide for remote operation of VCR transport functions. Camera-mounted controls give you greater flexibility by enabling you to operate the camera at a distance from the VCR.

Functions such as focus (in/out) and light (OK/low) are displayed in the electronic viewfinder. The viewfinder can also be used in conjunction with the built-in character generator to create pictures with subtitles.

This and similar devices we’ve seen in much the same way: You move a small, visible cursor to a specific place on the screen and then push the appropriate button to select date, time, number, or letter. Numbers advance from zero through nine as you hold the button down; letters from a to z. Once you’ve filled the first slot, you move the cursor and insert the correct letter or number in the next space. RCA’s camera also has a timer mode that enables you, for example, to record the running time of a race as you are taping it.

Although these rudimentary systems are somewhat slow to set up and are not as flexible as postproduction superimposition might be, they are useful, and it is likely that more sophisticated devices will be available before long.

For more information on new video products, see VideoFronts on page 41.
Like any fine musical instrument, TDK Professional Reference audio cassettes and open reel tapes are products of genius. In TDK's case, it's the genius of constantly advancing audio technology. And now, TDK technology has advanced again in the reformulation of our MA-R metal, SA-X high bias, and AD-X normal bias cassettes.

MA-R, SA-X and AD-X are formulated to an incredibly strict, new set of audio tape standards based on measurements and values no audio cassette manufacturer has ever attempted to meet. TDK cassettes deliver clarity, fidelity and quality unmatched by any other cassettes on the market today. MA-R, with its unique unibody metal alloy frame and Reference Standard Mechanism is the first metal reference tape in the industry. SA-X pushes high bias to its limits. AD-X normal bias is extraordinary in its wider dynamic range and its freedom from saturation at high frequency. SA-X and AD-X both feature TDK's specially engineered Laboratory Standard Mechanism. Each cassette comes with a Lifetime Warranty.

TDK's superior technology is just as evident in our SA/EE (Extra Efficiency) and GX open reel tapes. TDK SA/EE is the first open reel tape to use TDK's famous Super Avilyn particle. This gives SA/EE almost double the coercivity and high frequency MOL of conventional open reel tapes. GX mastering tape offers a wide dynamic range, high MOL and low noise. Both SA/EE and GX feature low distortion and extended frequency response.

MA-R, SA-X, AD-X, SA/EE and GX—they're five of the music world's finest instruments for all of the music and instruments you record. One final note. TDK's new Professional Reference Series of audio cassettes now comes in bold, new packaging. So they stand out in sight just as they stand out in sound.
Experts, Schmexperts

I share your fascination with how different experts choose to assemble a system (December 1981). However, I’ve never fully agreed with any of them. One expert spent over half his $1,500 budget on a separate turntable, tonearm, and cartridge, while another spent most on recording accessories. Either way, there isn’t enough left to buy adequate electronics.—Mark Munyon, Lafayette, Colo.

Anyone who buys what our experts choose, verbatim, is missing the point of such an article. If we got you thinking about your priorities and how to manage them, then we’ve accomplished exactly what we had hoped.

Arm Wrestling

In reading a report on the $300 SME 3009 Series III tonearm I find the following: “The instructions call for adjusting the azimuth until the stylus lines up with its image when it is resting on a mirror placed on the turntable; in the lab, we found it easier to use test equipment and adjust for best channel separation.” Why did the lab find it easier to use test equipment? Most audiophiles do not have such equipment, so what should we do?

I tried using a level on the flat shaft behind the cartridge on my turntable. This procedure worked fairly well, but not well enough for real accuracy. What bugs me more is that none of the manuals I have had over the years have even mentioned azimuth, which is such a critical adjustment. And when the report on the SME said to twist the headshell until the azimuth is adjusted, I couldn’t believe it. Why can’t the arm be made sufficiently rigid and accurate that any cartridge you mount in it would automatically be correct in azimuth?—Carlos Johnson, Philadelphia, Pa.

Azimuth—the extent to which the stylus, viewed from the front, deviates from true perpendicularity to the record surface—has become a critical setup element only relatively recently, since the introduction of Shibata and other multiradial stylus designs. The contact surfaces of such styli are short segments of long-radius curves that meet in a relatively sharp point toward the bottom of the groove. Serious misalignment of such a stylus tip can lead to record damage. (Alignment-induced record damage is not much of a concern with a spherical tip, which presents a constant curvature to the groove within a huge azimuth “window.”)

Azimuth error will reduce channel separation regardless of the stylus shape, but only negligibly for the first few degrees of misalignment and, if it is the only misalignment, will introduce no significant distortion. Presumably the reason the lab used instruments (a simple oscilloscope, which some home users do have, will do) for the adjustment was to ensure that the other measurements involved would not be compromised.

You can’t expect azimuth to be necessarily spot-on when you mount a pickup in an arm, no matter how carefully the geometry was worked out in advance. This is partly because tonearms must move vertically, which changes the various geometrical relationships slightly. More significant, however, are slight, random imprecisions in the mounting of cartridge styli and coils, over which the consumer has no control.

The SME tonearm is certainly not all things to all record-playing equipment, but it is a carefully engineered device that doesn’t deserve the animus you seem to harbor toward it.

How Loud?

The NAD 7020 receiver has been praised by High Fidelity and others, but many stereo magazines say to purchase as much power as you can afford and the 7020 has just 20 watts [13 dBW] per channel. Will the NAD’s headroom be adequate for peaks in symphonic music at channel? Will the NAD’s headroom be adequate for peaks in symphonic music at efficiency speakers help to avoid clipping in a low-powered receiver?—Lorne Wood, Peterborough, Ont., Canada.

I’d give you a qualified “yes” to both questions. The most important variable here is the listening level. At what I would call “moderate” volume, maximum sustained levels draw no more than a few watts, though instantaneous requirements can run ten times as high. For the sake of argument, let’s assume speakers of average efficiency and 3 dBW (2 watts) on sustained fortissimos. Allowing 10 dB for instantaneous peaks would give you 13 dBW (20 watts) as your maximum requirement.

But if you increase the sound level until, subjectively, it sounds “twice as loud,” all requirements would increase by about 10 dB—to 13 dBW (20 watts) continuous and 23 dBW (200 watts) instantaneous! If, on the other hand, you were to maintain the original sound level but trade the original speakers for a pair that are “only half as efficient,” you would need a 3-dB increase in power—to 6 dBW (4 watts) continuous and 16 dBW (40 watts) instantaneous—to compensate.

Rumblings

Regarding Tim Deirek’s rumble problem with an Omnisonix Image Enhancer (“CrossTalk,” December 1981), I suspect that it would be essentially cured by a circuit that blends the two stereo channels in the low bass region (below about 150 Hz). Some Audio Control equalizers have such a feature. It has an uncanny ability to eliminate most turntable and record rumble and reduce substantially the system’s sensitivity to acoustic feedback, while leaving intact the amplitude of the bass response.—Peter Schaff, Port Angeles, Wash.

Good point. A similar low-bass blend often is applied during record mastering to prevent excessive vertical excursion. Huge low-frequency swings in the out-of-phase component of the composite signal could lift the cutting stylus right out of the lacquer into which it is cutting the groove. Thus, many records already have little or no channel separation to preserve in this region.

Fancy Turn-On

I have a very good German timer that can be programmed to switch up to three devices on or off as many as twenty times over a seven-day period. Mine has a backup battery in case of a power failure; otherwise, it works from 220-volt 50-Hz AC. If I move back to the U.S., will I be able to find such a timer for American use?—Sumner Northcutt, Munich, Germany

If I knew of such a device, I’d buy one for myself. Maybe another reader can help us both.

We regret that the volume of reader mail is too great for us to answer all questions individually.
MAXELL IS PLEASED TO PRESENT AN
EVEN HIGHER PERFORMANCE TAPE.

If you're familiar with Maxell UD-XL tapes you probably find it hard to believe that any tape could give you higher performance.

But hearing is believing. And while we can't play our newest tape for you right here on this page, we can replay the comments of Audio Video Magazine.

"Those who thought it was impossible to improve on Maxell's UD-XL II were mistaken. The 1981 tape of the year award goes to Maxell XL II-S."

How does high bias XL II-S and our normal bias equivalent XL I-S give you such high performance? By engineering smaller and more uniformly shaped epitaxial oxide particles we were able to pack more into a given area of tape. Resulting in a higher maximum output level, improved signal-to-noise ratio and better frequency response.

To keep the particles from rubbing off on your recording heads Maxell XL-S also has an improved binder system. And to eliminate tape deformation, XL-S comes with our unique Quin-Lok Clamp/Hub Assembly to hold the leader firmly in place.

Of course, Maxell XL II-S and XL I-S carry a little higher price tag than lesser cassettes.

We think you'll find it a small price to pay for higher performance.
Retsoff's Remedies

Simple solutions to common stereo system problems  by Alexander N. Retsoff

Phono System Hum—Finding the Cause and Fixing It

WHEN SOMETHING GOES WRONG with your stereo system, the source of the problem often lies somewhere in the phono circuit. Because a phono cartridge's signal level is much lower than those from other input sources, the entire link between cartridge and amplifier is susceptible to hum and noise—especially with moving-coil cartridges, whose signal levels typically run to millionths of a volt.

A very common source of hum (and of intermittent sound) is a faulty connection. If you experience either problem when playing a disc, first check the cables between the turntable and preamp or receiver. Be sure to turn your system off. The volume set at a low level, wiggle the cables where they enter the molded-on connectors. This is a prime area for an internal short or open circuit, which can produce the same symptoms as a corroded connection. If the sound comes and goes or gets noisy or hummy, replace the cable. Also, check the cable along its length to be sure it hasn't been accidentally flattened at some point and damaged internally. If you suspect a cable is defective, replace it. It's a good idea to have a spare test cable handy so you can easily substitute it for a questionable one.

If the hum persists, the wire that grounds the turntable frame to the amplifier chassis may be at fault. Usually, this connection minimizes hum, but some cartridges have the ground side of one channel connected to the cartridge body. If the cartridge body is metal it touches the arm, two ground paths may be established—one from the cartridge coil to its case, through the arm to the turntable frame, and then through the grounding wire to the amplifier; the other, the normal direct connection through the signal cables. The result of this double path is a ground loop that can pick up hum. If you suspect this is the problem, disconnect the grounding wire. Alternatively, you can insulate the cartridge body from the arm with a plastic shield and nylon mounting hardware.

It's time to check the cartridge/tonearm connections if hum, noise, or intermittent sound persists at this point. With cartridges that are mounted in a removable headshell, flip down the stylus guard (or put on the protective plastic cage) and remove the headshell, cartridge, and cable. The headshell, cartridge, and all, from the tonearm. (Usually this is done by unscrewing a knurled ring.) Check the connections between the headshell and tonearm for corrosion. (They should be okay, because the connection is almost invariably gold-plated.) Invert the headshell on a flat surface, and with tweezers or needle-nose pliers, gently tug on each sleeve that connects the tonearm wiring to the cartridge. Don't pull on the wires. They're fragile. Just verify that each wire is firmly soldered to its connecting sleeve. Sleeves should fit tightly on the cartridge pins. (This doesn't always happen, because there's more than one "standard" diameter for cartridge pins.)

Squeeze any loose sleeves gently with pliers. Some headshell wiring terminates in sleeves on both ends, and the shell's connector portion has four pins to mate with the sleeves. In this case you can replace the (Continued on page 80)
Once again, JVC harnesses higher tech in the pursuit of higher fidelity.

The power of higher tech, harnessed by superior engineering. Once again, it’s the mark of JVC’s leadership. Even in the realm of moderately priced components like these.

**The intricacy of JVC turntable design.**

You see it, and hear it, in attention to subtle, yet significant details. Like a straight, low-mass tonearm with tracing hold to stabilize tracking. And quartz control to insure virtually perfect platter rotation.

**Powerful, yet musically pure receivers.**

A JVC innovation called Super-A removes subtle forms of distortion. So musical overtones and transients are amplified intact for a pure, musically natural sound. Add graphic equalization and quartz tuning, and you have receivers unsurpassed for performance and versatility.

**The innovators in metal cassette decks.**

It was JVC who first put together the technology needed to record metal tapes. Now we’ve added Dolby C for ultra-quiet recordings. Plus features like Music Scan to find selections automatically. Spectro-Peak metering. Logic controls, digital indication, memory and more.

**Speakers more precise than the ear itself.**

Our Dyna-Flat ribbon tweeter extends to 100 kHz, higher than the ear can hear. By doing so, it helps provide correct amplitude and phase characteristics in the audible range. So music takes on the focus, detail and spatial image of live sound.

Your JVC dealer is waiting to demonstrate the full new line of higher tech components. Computerized tuners. "Thinking" tonearms. Self-optimizing cassette decks. Higher tech engineering all focused on one goal — achieving the highest fidelity possible.

*JVC: A registered trademark of Dolby Laboratories.*
More Highlights of the New Tape-Deck Standard

MANY OF THE SALIENT POINTS of the new EIA tape-recorder standard were covered in last month's column. The remaining ones—including test tapes, flutter, speed accuracy, erasure, maximum input level, distortion, and meter response characteristics—I'll elaborate on here. As before, the new procedures differ in detail, but not philosophy, from our past practices.

Test tapes have always been a problem for equipment reviewers. A number of companies (including BASF, Philips, TDK, and Teac) make cassette test tapes, and at least two produce open-reel test tapes—Magnetic Research Laboratories (MRL) and Standard Tape Labs (STL). Unfortunately, none of these agrees with the ANSI/IEEE/DIN flutter standard would do so. Strict adherence to the ANSI/IEEE/DIN flutter standard would require reporting the maximum flutter observed during the period of the measurement, but the duration of the test has never been specified. Furthermore, a momentary dropout might cause an artificially high maximum flutter value. In the past, HF has reported both average and maximum readings to compensate for this possibility. The new standard has a neater approach: It specifies a 30-second measurement period, commencing a few seconds after tape motion has begun. Maximum flutter is measured, but peaks that occur less frequently than twice in the 30 seconds (such as those caused by dropouts) can be ignored. The measurement is repeated three times, and results are averaged. Flutter is measured at three points in the tape: with a full supply reel, with an empty supply reel, and in mid-pack. The worst of the three averages is the one reported. We adopted the new methodology with the Teac X-1000R open-reel deck evaluated in our July issue and will continue reporting only a single flutter reading. We anticipate that for most decks it will lie between the average and maximum readings we have been reporting.

Speed accuracy is defined by the EIA standard with reference to a line voltage of 120 volts and at 10% above and below that figure. We believe that the line voltage you normally encounter will never reach 132 volts (+10%), but that it is likely to drop below 108 volts (-10%), so we intend to stay with the range from 105 to 127 volts that we have used in the past.

We have measured erasure until now by recording a 333-Hz (cassette) or 400-Hz (open-reel) signal at reference level, recording over it without an input signal, and then comparing the remaining signal at the original frequency with the reference level. We are adopting the new standard, which calls for a 100-Hz test frequency recorded at tape saturation (defined as the level that produces 5% third-harmonic distortion). After erasure, the residual 100-Hz component will be checked against the reference level for that format (which for open reel is now 6 dB higher than the level we used in the past).

Theoretically, a 100-Hz signal should be more difficult to erase than a higher-frequency signal. Furthermore, the original recording will be made at a higher-level than we used previously. As a result, from now on erasure figures will be somewhat worse than in the past—especially on cassette decks, which are the subject of this month's equipment reviews.

Recognizing that the microphone inputs of many recorders overload prematurely, resulting in distorted live recordings, the EIA has made input-overload level a primary specification. We have supplied this figure for some years now and will continue to do so.

The new standard treats distortion in two ways and ties both of them to the deck's recording-level indicator—an excellent idea, in our opinion. First, distortion at the reference recording-level will be measured at the standard test frequencies—315 Hz for cassette, 500 Hz for open-reel equipment operating at speeds less than 7½ ips, and 1 kHz for open-reel decks operated at 7½ ips or faster. We will also report the meter reading at this recording level and the brand of tape used for the test. (On a three-head
deck, the meter reading will be taken in the source position to make the data comparable with those for a two-head deck.)

These figures let you make direct comparisons of distortion in competing decks at a fixed recording level. They also tell you the meter reading that corresponds to a reference-level recording, giving you a handle on meter calibration. Compared with our past practice, there is no substantial change for the cassette format, but because the new open-reel reference level is 6 dB greater than the one we used to use, distortion figures for open-reel decks will be substantially higher than you’ve been seeing.

The recorded level that corresponds to 3% distortion, or maximum recorded level (MRL), will be measured for each tape, and the meter reading that corresponds to that point will be given. These figures tell you how much headroom the recorder has, how headroom varies with the type of tape used, and how far you can push the meters into the red before unacceptable midrange distortion begins. Again, this closely follows our past practice for the cassette format, but the 6-dB increase in open-reel reference level will reduce the new MRL figures by the same amount.

HF will report these data, but because they apply only to the midrange we will continue to measure maximum distortion (at a reduced recording level) over the band from 50 Hz to 5 kHz (for cassette and slow-speed open-reel) and over the band from 50 Hz to 10 kHz (for higher open-reel speeds). We are, however, changing our open-reel test level to reflect recent improvements in test formulations. Cassette equipment will continue to be tested at 10 dB below the DIN (and now EIA) reference level of 250 nanowebers per meter (nWb/m). Open-reel decks will be tested at 10 dB below the new EIA reference point of 400 nWb/m, independent of tape speed. This is a more stringent test than we have conducted in the past, especially at 3/4 ips, so expect higher distortion figures—probably comparable to those for cassette decks.

Knowing how the meter responds to the dynamics of music is equally important, and the EIA addresses this point, too. The standard specifies test signals to be used to characterize meters by their response times, overshoot (if any), and decay times. Response time is the time required for the meter to come within 2 dB of its steady-state indication when handling a transient. (In the past, we have used 3 dB as our allowable error, so expect now to see slightly longer response times.) Decay time tells you how long it takes the meter indication to fall 20 dB after the signal has stopped; overshoot indicates the extent to which the pointer goes past the actual reading when responding to transients of medium duration.

What I’ve covered here are only highlights of the tests contained in the new EIA tape recorder standard, which divides ratings into primary specifications, secondary specifications, and those of even less significance. Primary ratings for a tape recorder/reproducer—those required by the standard—include (in decreasing order of importance): record/playback response (with and without noise reduction); record response; CCIR/ARM-weighted signal-to-noise ratio (S/N); both record and playback distortion at reference level; meter indicator reading at reference level; maximum recorded level (MRL); meter indicator reading at MRL; weighted peak flutter (record/playback); line-input sensitivity; microphone-input sensitivity; maximum microphonic-input level; and line-output level.

HF will, of course, perform all of the primary measurements and a number of the secondary ones as well. However, we will continue to measure the frequency responses of cassette decks at -20 dB re 250 nWb/m, rather than at the less stringent -25 dB level sanctioned by the EIA. The changes from our past procedures that will result from adopting the new standards are generally minor, and what differences there are you can easily decipher by referring to this month’s and last month’s “Sound Views.”

HF
New Equipment Reports

Preparation supervised by Michael Riggs, Robert Long, and Edward J. Foster.
Laboratory data (unless otherwise noted) supplied by Diversified Science Laboratories.

Performance and a Touch of Class from Denon

IN AT LEAST TWO RESPECTS, Denon’s DR-F7 cassette deck represents a significant advance from the DR-330 we reported on in January. One is that it incorporates the now nearly ubiquitous Dolby C noise reduction system, which is almost twice as effective as the standard Dolby B system in suppressing tape hiss. The other is what Denon calls FTS, for Flat Tuning System. At the touch of a button, the DR-F7 automatically fine tunes its own bias Dolby recording-level calibration settings for flattest response with the particular tape you are using at the time. Pressing another button, labeled PRE-SET, memorizes those settings, so that the deck returns to them automatically any time the TAPE SELECT is switched to the position for that tape type.

The DR-F7 retains an improved version of the Tape Tension Servo transport mechanism introduced in the DR-330. It works by continuously monitoring the tape tension between the erase head and the recording and playback heads (which share a common housing). Based on that information, it alters the force with which the erase head pushes the tape against the pressure post in the cassette, so as to eliminate variations in tape tension. According to Denon, this results in unusually good tape-to-head contact, which is in turn responsible for fewer tape dropouts, lower noise, better separation, and more extended high-frequency response than would otherwise be possible.

Of the DR-F7’s three other relatively uncommon features, two are clearly visible and one isn’t. The “invisible” one is Denon’s use of direct-coupled (DC) circuitry throughout the record and playback electronics. More obvious are the transport controls and the metering system.

Unconventionally arrayed as three rows of two pushpads each, the transport controls are an unexpected pleasure. The top row comprises the record and play buttons, the middle row the “pause/mute” and stop buttons, and the bottom row the fast-forward and rewind keys. Although not what we’re used to, it turns out to be an exceedingly logical and foolproof arrangement, especially when teamed with Denon’s simplified recording-interlock scheme. When you press RECORDING, the deck automatically goes into PAUSE; then to commence actual recording, you just press PLAY. (The RECORDING, PLAY, and PAUSE/ MUTE have small, square pilot lamps in their upper left-hand corners that light when the controls are activated.) A particularly clever and handy characteristic of the PAUSE/ MUTE is that it’s a dual-function control: So long as you hold the key in, the deck will continue in record, but with its inputs shorted, so that a blank is recorded; when you release the key, tape motion is halted.
Sony Cooks Up a Top Tape

Tape makers literally can't leave well enough alone. Just as tape development had reached the well-enough level, with the better brands sounding very good indeed, some manufacturers seem eager to outdo their own — and anyone else's — achievements.

Competition, innovation, and sheer cussed perfectionism aside, the question arises whether such compulsive pushing of limits really brings practical benefits to the listener. In the case of Sony's new UCX-S cassettes — the latest champion in the international tape derby — the answer is a decided yes.

The nature of these benefits is best understood by way of analogy. Tape is to a recorder what film is to a camera. Even the best camera can't take good pictures with poor film. Similarly, no tape recorder can sound better than the tape running in it. Just as the grain and pigments of a film determine the quality of a photograph (other factors being equal), so the frequency response, dynamic range and noise characteristics of a tape determine the quality of a recording.

In Sony's UCX-S, these factors have been slightly but perceptibly improved over previous models, and the ear readily and gratefully registers the difference. In critical listening comparisons with other ferricobalt cassettes (i.e., cassettes made with cobalt-treated iron oxide), the treble not merely seemed extended in range but also more natural in character. Credit for this goes to the greater treble capacity of this tape, which obviates any need for the tape running in it. Just as the grain and pigments of a film determine the quality of a photograph (other factors being equal), so the frequency response, dynamic range and noise characteristics of a tape determine the quality of a recording.

Thirdly, the basic material itself has been improved by new methods of spiking each iron particle with molecules of cobalt, so as to heighten such magnetic properties as coercivity and retentivity. These determine how faithfully the tape "remembers" the music entrusted to it, and how much sonic detail it recalls on command. To be less metaphorical and more precise about it, retentivity is 1800 Gauss and coercivity is 593 Oersted — uncommonly high values assuring that this tape will be on its very best behavior when jolted by the impact of the musical signal.

Although developed at Sony's laboratories at Sendai, in northern Japan, the new tape is to be domestically produced in Alabama and Texas. With a list price of $5 for a one-hour cassette, it is much less expensive than the so-called metal tapes, yet in most practical uses virtually equivalent to their performance.

Talking to the originators of the new tape, one gains the impression that they were inspired, at least in part, by friendly rivalries within Sony's corporate empire. Traditionally, Sony tape has stood in the shadow of the company's more eye-catching developments, such as Trinitron television, the Betamax, and its excellent stereo components. The new tape represents a bid for a bit of the limelight and is — to borrow a phrase from my college yearbook — most likely to succeed. © 1982 The New York Times Co. Reprinted by permission.

WE THOUGHT THIS NEW YORK TIMES REVIEW WAS FIT TO PRINT.
We're less happy with the metering system, which consists of two large averaging meters supplemented by a single column of three peak-reading LEDs. The LEDs are considerably more useful than the meters, which are too slow to give a true indication of what's going onto the tape. We would have preferred full-scale peak-reading meters. Our only other gripe is with the recording-level control. It is so small as to make smooth, simultaneous rotation of the independent, unclutched sections for the two channels a real challenge. This makes setting levels more difficult than necessary, and it makes creating smooth fades without loss of channel balance almost impossible.

For its tests, Diversified Science Laboratories used tapes recommended by the manufacturer: Maxell XL-11S as the Type 2 ferricobalt, Denon DXM as the Type 4 metal, and Denon DX-3 as the Type 1 ferric. However, the Flat Tuning System (which DSL used before taking its measurements) makes tape selection relatively uncritical.

The playback response curves droop somewhat at the high end, apparently because of an azimuth disagreement between the Denon's playback head and the TDK test tape. Record/play curves without noise reduction or with Dolby B are consistently flat, however—no doubt at least partly because of the FTS tape-matching system. The Dolby C curves are equally consistent but show a bump of a few dB centered on 4 kHz that suggests a level-matching error. As we have noted before, we have used in past reports, are about a dB better without noise reduction, about the same with Dolby B, and about 2 dB worse with Dolby C than the comparable CCIR/ARM-weighted figures in our table.) And not surprisingly, given the design emphasis on stable tape transport, DSL’s flutter reading turned out to be particularly fine.

All in all, the DR-F7 is an attractively styled, conservatively designed deck that performs well in all important respects. It does not have as many convenience features as some other recent machines, but that comes across more as an absence of clutter than as a loss of functionality. There are provisions for an optional wired remote-control unit and for unattended recording or timed playback with an optional external timer—probably the most frequently desired conveniences. And apart from some awkwardness in setting recording levels, the transport controls are perhaps the best thought out we have encountered, and the FTS tape-matching system takes only a scant few seconds to do its job (less time, in fact, than any other such system we can recall having encountered).

Circle 94 on Reader-Service Card
People who know sound know what it takes to make classic car stereo. Electronics like a Jensen® RE518 electronically tuned stereo/cassette receiver.

The RE518 features a Quartz Digital Synthesizer that electronically locks into a selected radio frequency. Tuning is extremely accurate because there is no mechanical drift from temperature variations or vibrations. Feather touch push buttons on the RE518 control refinements like equalization for normal or metal and chrome tape playback. And conveniences such as electronic pre-set tuning, seek, scan, and digital readouts.

The RE518 has a universal sized chassis that fits most American and European cars, as well as many other imports. So even if you don’t own a 1934 Buick Club Sedan, with a Jensen RE518 you can have a classic.

**JENSEN**

CAR AUDIO

When it’s the sound that moves you.

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Circle 49 on Reader-Service Card
Harman Kardon Vindicates HX


The last time we tested a Harman Kardon deck (August 1980), it was the hk-705, whose premiere feature was Dolby Laboratories' then-new HX circuit for extending high-frequency headroom. We were, however, disappointed by the performance of HX in its appointed role. Depending on how you looked at the results, it could be said to make high-frequency headroom worse, rather than better—a finding that tests of other HX decks consistently bore out. We are, then, very happy to report that the CD-401 is a big improvement and that the new HX Pro circuit (actually developed by Bang & Olufsen in conjunction with Dolby Labs) succeeds brilliantly where its predecessor didn't.

Before getting into that, however, let's take a broader look. The CD-401 is at the top of Harman Kardon's new line of wideband cassette decks, even the humblest of which boasts response to or beyond 20 kHz (thanks in part to playback equalization that reaches beyond 20 kHz and to an unusually high bias frequency). In addition, the 401 has separate recording and playback head elements that enable more extended high-frequency response and monitoring from the tape while you record. The latter, in turn, simplifies the tape-matching "fine-tuning" adjustments on the 401. In addition to separate bias and equalization selectors for the four standard tape groups (Types 1 through 4), there are separate screwdriver adjustments for sensitivity (Dolby tracking) in each channel and a bias knob with a center detent at the "normal" position. There are two spring-loaded oscillator buttons. The one for the sensitivity adjustment delivers a Dolby-level tone to both channels, while the bias-adjustment oscillator puts a midrange tone into the left channel and a high-frequency tone into the right. The bias adjustment is correct when the meters for both channels read the same while you're monitoring the bias tones from the tape.

The LED signal displays ("meters") are calibrated from -40 to +8 dB, with LEDs at 2-dB intervals from -5 to +5, plus one at the 0-dB point. The marked Dolby reference level at 0 dB is, in reality, more than 2 dB above the actual Dolby reference level (250 nanowatts per meter, as opposed to the correct 200). Because the displays for the two channels are strung out in one long line, rather than stacked in parallel, stereo balance is somewhat harder to read than average, but the metering is otherwise quite good. It includes one unusual feature: two response-speed options, slow and normal. (The panel labeling refers to meter "ballistics," though in a system with no moving mass the word is metaphoric.) This evidently is a response to the occasional complaint (not ours, incidentally) that the lighted displays "flicker too fast for you to see properly." The difference between the two modes is, subjectively, only marginal. The display's behavior in SLOW can hardly be called sluggish, though the DSL data show it to be twice as slow to decay and more than three times as slow to illuminate, as compared to NORMAL.

There are a number of other front-panel features, all of them reasonably representative of their respective types: recording mute, an electronic selection search, memory-stop and memory-play rewind, and timer recording and play functions. A nice touch is the FADER—a second recording-level control that normally is left at MAX to enable fade-out and fade-in without disturbing the setting of the main control. On the back panel is a jack for remote control. Harman Kardon offers no model of its own, but tells us that many remotes from Japanese manufacturers (all of those from Nakamichi, for instance) can be used with this socket. And the back panel has two pairs of line inputs: LOW, which is compatible with normal component "line levels," and HIGH, which the manual suggests for dubbing from equipment, such as portable radio/recorder units, with relatively high output.

For the record, the lab measured the
INTRODUCING THE
VI5 TYPE V
A STEP BEYOND
EXTRAORDINARY
No other cartridge, at
any price, offers so
many benefits.

FEATURING
MICROWALL/Be™
TECHNOLOGY

MASAR© POLISHED
HYPERELLIPITICAL
STYLUS TIP
Assures accurate, distortion-free
tracking—plus reduced record and
stylus tip wear.

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MICROWALL/Be™
STYLUS SHANK
Unprecedented high frequency
trackability due to this revolutionary
new high stiffness, low mass
stylus shank.

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SYSTEM
Protects stylus from
accidental breakage
by withdrawing shark
assembly into
stylus housing.

DYNAMIC STABILIZER/
DESTATICIZER
Exclusive! Functions like a miniature shock
absorber to eliminate warp-related problems
such as signal wow, groove skidding, and
cartridge bottoming. Simultaneously
discharges surface static electricity and
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PLUS!
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TTR117 Trackability Test Record
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Send for our fact-filled brochure.
Ask for AL694.

Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204
Data with HX Pro engaged; see text.

Max. Output (from DIN 0 dB)

Mike Input Overload (clipping)

Sensitivity (re DIN 0 dB; 315 Hz)

Flutter (ANSI IEEE weighted peak; R,P)

Speed Accuracy

Overshoot

Decay time

Indicator "Ballistics"

Channel Separation (315 Hz)

Type 4 tape

Type 2 tape

Type 1 tape

Erasure (100 Hz)

Type 2 tape

Type 4 tape

Type 1 tape

Channel Separation (315 Hz)

Type 2 tape

Type 4 tape

Indicator Reading for 3% Distortion (315 Hz)

Type 2 or 1 tapes

Type 4 tape

Type 1 tape

Indicator Reading for 3% Distortion (315 Hz)

Type 2 or 1 tapes

Type 4 tape

Type 1 tape

Distortion (Third Harmonic; at -10 dB DIN)

Type 2 tape

Type 4 tape

Type 1 tape

Erasure (100 Hz)

Type 2 tape

Type 4 tape

Channel Separation (315 Hz)

Type 2 tape

Type 4 tape

Indicator "Ballistics"

Normal: "fast"

Response Time: 12 ms

Decay Time: 350 ms

Overshoot: 0 dB

Speed Accuracy

1.2% fast. 105-127 VAC

Flutter (ANSI/IEEE weighted peak; R,P)

+0.01% SENSITIVITY (re DIN 0 dB; 315 Hz)

"high" line input

"low" line input

mike input

Mike Input Overload (clipping)

Max. Output (from DIN 0 dB)

DATA WITH HX PRO ENGAGED, SEE TEXT.
RECOMMENDED FOR MATURE ADULTS ONLY.

You're old enough to know better. So pull out all the stops, end all the compromising and introduce yourself to AKAI quality and performance. You'll find we've engineered all the intimidation out of high-performance hi-fi. And put a whole lot more human engineering in. While adding 15 superbly crafted new components that give you just a little more for your money.

But if you're an adult, you're not about to settle for less.

In tune with the times.

For example, take the all-new AKAI GX-F71 cassette deck. Just for openers, you get Dolby* B and C noise reduction and AKAI's famous Super GX Combo Heads. Plus the convenience of a built-in microcomputer that automatically calibrates bias, equalization and sensitivity for any tape used, Auto-Fade, Instant Program Locating System and Intro-Scan that plays a 10-second preview of every program selection.

One for the records.

With the AKAI AP-L95 you can always count on a well-rounded performance. And for obvious reasons. A built-in microcomputer makes it fully programmable. A linear-tracking tone arm virtually eliminates normal tracking error. And a superb quartz lock, direct drive motor keeps wow & flutter to an inaudible minimum.

Efficiency expert.

AKAI's magnificent GX-747 represents the latest breakthrough in open-reel technology. Because it's one of the world's first decks designed to handle the new "EE" (Extra Efficient) tapes. And that means you get the equivalent of 7½-ips performance at a much more economical speed of just 3½ ips.

But that's not all. You also get: four Super GX Heads, two erase heads, Auto-Reverse Playback/Record, Auto-Mute and an unheard of frequency response of 25-33,000 Hz ± 3dB at 7½-ips.

So visit your AKAI dealer soon. Or write: AKAI, P.O. Box 6010, Compton, CA 90224.

With AKAI, you've never heard it so good.

*TM. Dolby Labs, Inc.

AKAI Hi-Fi & Video.
to switch the noise reduction. The tape-selector switches (however welcome their unusual versatility) add an element of clutter by presenting an oversize button, separated from the rest, for each metal-tape choice. Since there are separate bias and EQ buttons, those for ferrichrome (if that tape group must be allowed for at all, now that its star seems to be falling) could have been omitted: One could simply switch the bias to LN (ferric) and the EQ to CR1x (chrome). Finally, the sensitivity adjustment is rather fussy. You must use a jeweler's screwdriver (whose tiny blade easily misses its target) to reach the adjustment slot, which is a good ¼-inch behind the panel surface.

The special front-panel emphasis on metal tape is curious, since the CD-401 largely renders metal tape obsolete. It can make ferric tapes recorded with HX Pro and Dolby C that run rings around metal tapes recorded with Dolby B (which sound considerably noisier) and that are not perceptibly inferior to metal tapes also recorded with HX Pro and Dolby C. Of course, you can't get best results with bargain ferries, but even the best of the Type 1 group are no more than about half the price of the metals. At the present state of the art, in our opinion, metal tape is a sensible choice only when you want to make the very best of moderately good equipment (bearing in mind that a deck should be better than moderately good if it is to make the most of Dolby C). That the CD-401 is "better than moderately good" is beyond question. It is a strikingly fine performer that demonstrates once again Harman Kardon's uncanny knack for coming up with ideas that are well out ahead of the pack.

Circle 99 on Reader-Service Card

Dual-Speed Convenience from Dual


Inches deep plus clearance for controls and

Dimensions: 17¼ by 4½ inches (front panel), 13¼

inches deep plus clearance for controls and con-

nections. Price: $700; optional wireless remote

control, $130. Warranty: "limited," one year parts
and service. Manufacturer: Made in Japan for Dual
of West Germany; U.S. distributor: United Audio
service.

Circle 99 on Reader-Service Card
Because Sony redesigned the car stereo, the auto makers don't have to redesign the car.

The interior of an automobile is designed with a lot of purposes in mind. Unfortunately, great stereo sound reproduction isn't one of them. Fortunately, Sony did more than just tackle this problem. They actually solved it. By designing a stereo system that meets the acoustical challenges inherent in a car.

INTRODUCING THE SONY SOUNDFIELD™ SYSTEM.

As the very name of our system indicates, we started with the acoustical sound field itself by treating the entire front of the car as a stage. The very directional high-end and midrange frequencies emanate from this stage in an accurate stereo image.

The bass frequencies below 100Hz actually are directed from the rear of the car, where the Super Woofers are placed. However, since these frequencies are omnidirectional, they seem to be coming from the proper "stage" location.

The result is richer, fuller, and more dramatic bass.

CONVERT WITH COMPONENTS.

The optimum SoundField System consists of a powerful amplifier (XM-120) driving a pair of 8" Super Woofers (XS-L20), along with a medium-powered amplifier driving the front speakers. This means full-range speakers can be used without risk of modulation distortion.

But you can begin to enjoy the SoundField System simply by adding one of our lower powered amplifiers and the Super Woofers to the car stereo you already have. Then you can slowly build up your system, adding a higher powered amplifier, more speakers, and an equalizer.

A SOUND THAT TAKES A BACKSEAT TO NONE.

Although the technology of the Sony SoundField System is complex, the reason for it is simple. It will give you high dB levels with very low distortion, extremely precise stereo imaging, and an amazingly broad frequency response. In addition, you'll be pleasantly surprised at just how easily a SoundField System can be installed in your car.

So come into your local Sony dealer and ask to hear the next generation in autosound systems. One listen and you'll know why the auto makers don't have to redesign the car.
Audio

New Equipment Reports

Among the C-844’s unconventional features are a six-position tape-selector switch, a double-speed (3¼ ips) option, and an elaborate program-search system called Music Finder.

Like other Dual decks of recent vintage, the C-844 includes the company’s Direct Load and Lock system. When power is turned on, a plastic shield that protects the heads and drive mechanism swings back, leaving the shallow cassette well completely open and ready to receive a cassette. So, whenever you insert a cassette with the mechanism preset for play, the transport will start automatically when you withdraw your hand. You can remove a tape while the deck is in any mode: A photoelectric system disengages the transport as your hand reaches the cassette.

If the C-844 is in PLAY when you remove a cassette, it will return to PLAY immediately after you insert another. This convenience does not extend to the recording mode, however. The deck goes to STOP when the tape is removed (to prevent accidental erasure of anything that might be on the next cassette you insert), requiring that you restart recording manually every time you change tapes. The procedure is still faster than average, however. The equalization we measured was +5.5, -3 dB, 25 Hz to >20 kHz, which is just above the previously marked by pressing the “set” button, which is just above the MEMORY. MEMORY and SET also play a role in the C-844’s Music Finder system: With the deck in STOP and MEMORY engaged, pressing FAST FORWARD or REWIND causes the tape to wind either to counter zero or to a point flagged by the SET. If the deck is in the playback mode, pressing REWIND or FAST FORWARD causes the tape to wind in the selected direction to the next gap in the music, at which point the deck switches itself back into PLAY. And if the deck is in RECORD, pressing REWIND will cause the deck to wind back to the last gap in the music and stop.

We should—according to the tape speed, the type of tape or the input signal, depending on the setting of the monitor switch, are rather sluggish and therefore not very useful. The LEDs (which always read the input signal) are quite fast, however. The equalization applied to the LED circuit varies—as it should—according to the tape speed, the setting of the noise reduction switch, and the position of the tape-selector switch. We find the C-844’s LEDs much more informative than its meters and wish that Dual had seen fit to incorporate the complete equalized peak-reading bar-meter system used in the C-828 (test report, August 1981).

Although the C-844’s tape-selector switch has six positions (one Type 4 metal,
A UNIQUE GUIDE TO CLASSICAL RECORDINGS LISTED BY PERFORMER AND PERFORMING GROUP

A virtual encyclopedia of valuable information containing over 300 pages and more than 25,000 entries. Revised every 3 years, The Schwann Artist Issue is an indispensable compilation of all the classical record and tape listings—arranged by artist.

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COMPLETELY SECTIONALIZED
Aids you in instantly locating any record or tape. Easy to use—an indispensable tool for the music lover.

Yours for just $7.95!
Akai's Quick-Change Bidirectional

Akai GX-44R cassette deck, with bidirectional record/play, Dolby B and C noise reduction.


NO COMPANY HAS BEEN MORE single-minded about creating bidirectional cassette equipment than Akai. During the developmental years, it often pursued more than one route toward this goal simultaneously and in any given year might display as many as a half-dozen bidirectional prototype types of one sort or another. The GX-44R version takes an elegantly simple approach. A single combination (record/play) head is flanked by two erase heads, one for each direction of tape travel. The record/play head is shifted from one pair of tracks to the other, without rotation, when direction is changed. This method also requires an electrical switching of channels (because the left-channel headgap in one direction becomes the right-channel headgap in the opposite direction), but the simple lateral shift of the head minimizes the possibility of head misalignment as the positioning parts begin to wear. At the same time, of course, you are spared the cost of multiple fixed heads or an elaborate four-channel fixed head—the common alternatives to a movable head.

The design depends on headgaps engineered to double for both recording and playback, one Type 3 ferrichrome, two Type 1 ferric, and two Type 2 chrome or chrome-equivalent. Diversified Science Laboratories used only three for its tests: Cr II with TDK SA-X, Metal with TDK MA, and Fe I with TDK OD. Overall performance proved very good, especially at the high speed, which yielded exceptionally low flutter and extended high-frequency response. The rolloff at the high end of the playback response curve (taken at 1 1/2 ips) probably results from azimuth disagreement between the Dual's playback head and the TDK test tape. At both speeds, the record-play curves are generally quite flat without noise reduction. With Dolby noise reduction (especially Dolby C) engaged, they show evidence of mistracking induced by Dolby recording-level calibration errors. This, however, could be corrected by a service technician (or a user with suitable test equipment). In any case, the mistracking is far less audible than our almost-worst-case curves would suggest.

Two other things about the C-844 stand out. One is the erasure figure for metallic tape, which is unusually good—better, oddly enough, than that for Type 2 tape, which is a bit lower than average. The other is the mike input's admirably high 190-mV overload ceiling.

But mainly, the C-844 is notable for being a rather self-effacing unit—which is to say, it doesn't get in the way of a good recording. We routinely found it easy to make recordings nearly indistinguishable from the source. Moreover, the convenience features seem well thought-out—especially the Music Finder system, which greatly simplifies recueing from a false start or a botched take in recording.

Circle 95 on Reader-Service Card

**INDICATOR READING FOR 3% DISTORTION (630 Hz)**

- Type 2 tape: 57¾ dB
- Type 4 tape: 57½ dB
- Type 1 tape: 57¼ dB

**INDICATOR READING FOR 6% DISTORTION (630 Hz)**

- Type 2 tape: 66⅓ dB
- Type 4 tape: 66⅓ dB
- Type 1 tape: 66⅓ dB

**INDICATOR READING FOR 3% DISTORTION (630 Hz)**

- Type 2 tape: 57¾ dB
- Type 4 tape: 57½ dB
- Type 1 tape: 57¼ dB

**INDICATOR READING FOR 6% DISTORTION (630 Hz)**

- Type 2 tape: 66⅓ dB
- Type 4 tape: 66⅓ dB
- Type 1 tape: 66⅓ dB

**S/N RATIO (re DIN 0 dB; R/P; CCIR-ARM-weighted)**

- Type 2 tape: 55⅔ dB
- Type 4 tape: 57⅔ dB
- Type 1 tape: 57⅓ dB

---

**REVERSING MODE**

- ONE-WAY OUT-AND-BACK (CONTINUOUS)

**EJECT**

**TIMER MODE**

- (PLAY/OFF/RECORD)

**AC POWER**

**RECORDING CANCEL**

**TRANSPORT CONTROLS**

**INTRO SCAN**

**BLANK SEARCH**

**MPX FILTER (ON/OFF)**

**NOISE REDUCTION (B/C/OFF)**

**RECORDING LEVEL**

**MKE INPUTS**

**OUTPUT LEVEL ADJUST.**

**HEADPHONES**

**HIGH FIDELITY**
playback use. (Had there been separate gaps for the two functions, a rotating-head design would have been required to keep the recording elements ‘upstream’ of those for playback in both transport directions.) Thus, no monitoring is possible during recording (it is the source signal that appears at the output terminals), but a monitoring feature might be out of place in what is very frankly conceived as a convenience deck. There is no tape-type selector, for example; tape switching is entirely automatic, in response to the keywells in the cassette shell. The choice is indicated by one of three LEDs next to the meters: CrO₂, NORMAL, or METAL—for Type 2, Type 1, and Type 4 tapes, respectively. Ferrochrome cassettes are treated as Type 1 ferrics, and some Type 4 cassettes (particularly those of early manufacture) are biased as Type 2 tapes. Such metal cassettes, however, are fast being replaced by Type 4 tapes with the full complement of keywells, and the ferrochrones, which have never struck us as one of tape technology’s finer inspirations, have largely fallen from favor.

There are some other convenience features that should be noted. What Akai calls INTRO SCAN samples the first ten seconds of each selection on the tape (assuming the presence of the usual four-second minimum interselection spacing). The nice thing about such a feature is that if it stumbles (because there is a quiet passage that the mechanism mistakes for a space, for example), it doesn’t make much difference; in the older systems that require you to punch up the number of the selection you want, a mistake in entering the digits (or in your list of the tape’s contents) can leave you floundering. There is also a BLANK SEARCH, which finds an unrecorded portion of the tape and switches to the recording mode, restrained by the PAUSE. If you’ve begun recording and goof it up, simply press RECORDING CANCEL and the transport will cue back to the last starting point, ready to rerecord over the mistake.

The AUTO MUTE (one of the transport control buttons) is unusual in that its four-second programmed duration (for creating interselection blanks) cannot be overridden by holding the button in for longer periods. Other features are fairly conventional. The reversing-mode switch, for example, permits recording one way or out-and-back, but continuous reversing is possible only in playback.

One touch we wish were more common is the automatic mono switching of the left mike input when there is no plug in the right input. A convenience for some users with European equipment is the DIN input output socket on the back panel. Another multipin socket accepts an optional remote-control unit (which we did not test).

The manual, which is better than average (particularly for one in six languages), lists C-90s of TDK SA ferricobalt, TDK MA metal, and Maxell UD ferric as the reference tapes in, respectively, Type 2, Type 4, and Type 1. We have made C-90s our standard of comparison because of their overwhelming popularity with recordists, but otherwise Diversified Science Laboratories followed Akai’s recommendation in making the measurements.

The downturn at the top end of the playback response curves presumably should be attributed to a minor difference in azimuth between the TDK test tape and the Akai’s record/playback head. In any event, it is quite mild, and the response elsewhere is very even—particularly for a reversing deck, in which some compromise is the general rule. The record play curves strike us much the same way: We wouldn’t consider them state of the art in a unidirectional model, but they’re unusually good for a reversing deck. Signal-to-noise figures are quite good—certainly typical of modern cassette equipment. (A-weighted values, incidentally, are almost indetical with Dolby B, slightly ‘better’ than the CCIR/ARM values shown here with no noise reduction, and slightly ‘worse’ with Dolby C. The noise itself obviously is the same no matter how it is measured; we offer these specifics only for comparison with past reports, which used A-weighting.) Erasure, though excellent with the Type 2 tape, is merely acceptable with metal; if you’re very fussy, you should bulk-erase metal tapes for reuse, just in case.

We consider the mechanical planning that went into the GX-F44R generally excellent. The automatic reverse is almost instantaneous and occurs just before the leader reaches the record/play head (so you scarcely miss a note). As such, it is a fine model for users who want a maximum of continuous recording time with a minimum of fuss and thought necessary to make the recording. Consistent with this objective, the meters—which indicate only from -20 to +8 dB, with l-dB steps in the range between -4 and +4—are calibrated for a fairly low zero reference. As a result, careless recordists can run into the red without causing untoward distortion (though at some cost in dynamic range), while astute recordists who have studied DSL’s data can go for a maximum indication of +6 dB and thus eulogize the last ounce of headroom from the GX-F44R.

Circle 98 on Reader-Service Card

Sensitivity (re DIN 0 dB; 315 Hz)
line input
130 mV
mike input
0.37 mV
MIKE INPUT OVERLOAD (clipping)
60 mV

AUGUST 1982
Sansui Goes Modern—With Some Surprises


Though it can hardly be called a "newcomer" among cassette-deck manufacturers, Sansui has come to the genre relatively recently. But enough time has gone by since the first Sansui decks were introduced that the D-570 sets itself apart from its predecessors as a distinctly modern model. Not only is the styling contemporary, with its flat rectangular touchplates (some with narrow pilot-LED inserts) in the transport-control section, but the array of features—particularly those depending on microprocessor logic—makes it quite plain that this is a 1982 model, and one that is in the vanguard. It is with some astonishment that we note that this is actually the first Sansui deck we've tested, despite the admitted (if fairly conventional, in contrast to the D-570) attractions of the line.

Among the most commonplace of its front-panel features, the bias "tuning" works like that on some FM tuners: A pair of triangular LEDs point the direction in which the knob should be turned, and both light simultaneously when the adjustment is right. We found this a little more efficient than many manual bias-trim systems—though, like most, it affects all of the tape-selector settings and thus cannot be left at an oddball Type 1 setting, say, when you put in a Type 2 or Type 4 tape, unless the new tape just happens to be oddball in an entirely standard. Timer play and timer recording are approaches to mute recording we've seen, the initial four-second period. Of all the cycle, doubling its flash rate at the end of the four-second mute. When this function is engaged and the transport is in PLAY, touching FAST FORWARD will cause the tape to wind to the beginning of the next selection, where it will either stop or automatically commence playback, depending on yet another option. And, finally, there is what Sansui calls Compu Edit: an interconnect system (for which the necessary cable is supplied with the deck) by means of which the transport can be controlled from certain Sansui turntables, simplifying dubbing from discs.

One of the nicest of the unusual features, in our opinion, is what Sansui calls a tape lead-in switch, nestled among the transport controls. When you press it, the tape fast forwards by some fifteen seconds worth of tape to get well beyond the leader and the potentially damaged area of the magnetic tape in the neighborhood of the splice. We also found the feature a quick and effective way of leaving longer-than-normal interselection spaces—say, between acts or scenes in opera recordings—on new or thoroughly erased tapes. (This fast-wind feature doesn't erase, of course.)

The peak-reading meters are calibrated from -20 to +8 dB, in 2-dB steps from -8 up. The fast response and slow decay makes reading signal values easy and positive. Surprisingly, the calibration varies somewhat with the tape-type setting, but not according to the headroom to be expected in each group. With Type 4 tapes, for example, the zero reading comes at a lower recorded level than with the other two groups, though its midrange headroom
The first thing that struck us about Hitachi's D-2200M cassette deck was its colorfulness; the second was how logically its controls and displays are laid out on the front panel. The primary indicator lights and displays are arrayed across the top of the panel, while the operating controls are grouped together by function in columns below. At the far left, above the cassette well, are four indicator lamps for what Hitachi calls ATRS (Automatic Tape Response System), which automatically sets the correct bias, recording equalization, and sensitivity for whatever tape you are using. A red lamp at the left glows when the batteries are dead or weak. The next lamp comes on when ATRS is switched off; it flashes when the batteries are adequately charged; it is necessary. Next over, above the AIRS counter, which does work in those modes, is the record-speed switch, which is why the standard three-digit counter, while the other shows elapsed time in the recording and playback modes (though not in fast forward or rewind, which is why the standard counter, which does work in those modes, is necessary). Next over, above the ATRS and tape-selector controls and the noise reduction and monitor switching, are the fluorescent peak-hold recording-level indicators, calibrated from -30 to +8 dB, with 1-dB steps from -3 to +3. And still further over, to the far right above the recording-level control, is an unusual, but very useful feature: a high-frequency peak-level indicator with lights at -10, 0, and +6 dB. Thus, with the Hitachi you know far better than with most other decks how much signal is the result of head contour effects (a second sample gives us substantially identical results) and the various 'bumps' are sufficiently narrow to influence the ear far less than the eye. And replication is more exact judged aurally than graphically.

The emphasis, however, is squarely on the extra features that Sansui has managed to cram in at this middle-range price and, to some extent, on their organization into a handsome and very modern ensemble. (The case is available either in the black of our test samples or in a brightwork finish.) In sum, it looks good, it sounds good, and it does a lot very well. 

Circle 56 on Reader-Service Card

---

**Hitachi's High-Tech Cassette Deck**


**Playback Response (TDK test tape, -20 dB DIN)**

<table>
<thead>
<tr>
<th>Frequency (kHz)</th>
<th>L ch</th>
<th>R ch</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>-6</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>-6</td>
<td>0</td>
</tr>
<tr>
<td>80</td>
<td>-6</td>
<td>0</td>
</tr>
<tr>
<td>160</td>
<td>-6</td>
<td>0</td>
</tr>
<tr>
<td>320</td>
<td>-6</td>
<td>0</td>
</tr>
</tbody>
</table>

**S/N Ratio (re DIN 0 dB; R/P, CCIR/ARM-weighted)**

<table>
<thead>
<tr>
<th>Tape Type</th>
<th>Type 2</th>
<th>Type 4</th>
<th>Type 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>without noise reduction</td>
<td>5310 dB</td>
<td>5210 dB</td>
<td>5210 dB</td>
</tr>
<tr>
<td>with Dolby B</td>
<td>5310 dB</td>
<td>5210 dB</td>
<td>5210 dB</td>
</tr>
<tr>
<td>with Dolby C</td>
<td>5100 dB</td>
<td>6210 dB</td>
<td>6210 dB</td>
</tr>
<tr>
<td>71 dB</td>
<td>70(1/2) dB</td>
<td>70(1/2) dB</td>
<td></td>
</tr>
</tbody>
</table>

**Indicators Reading for 3% Distortion (315 Hz)**

<table>
<thead>
<tr>
<th>Tape Type</th>
<th>Type 1</th>
<th>Type 4</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>+2 dB (with 1.7% distortion)</td>
<td>+2 dB</td>
<td>+2 dB</td>
<td>+2 dB</td>
</tr>
<tr>
<td>+4 dB (with 1.8% distortion)</td>
<td>+4 dB</td>
<td>+4 dB</td>
<td>+4 dB</td>
</tr>
<tr>
<td>+6 dB (with 3% distortion)</td>
<td>+6 dB</td>
<td>+6 dB</td>
<td>+6 dB</td>
</tr>
</tbody>
</table>

**Sensitivity (re DIN 0 dB, 315 Hz)**

<table>
<thead>
<tr>
<th>Tape Type</th>
<th>Type 1</th>
<th>Type 4</th>
<th>Type 2</th>
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</thead>
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<td>line input</td>
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**TAPE MATCH (ATRS, FIXED)**

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**Noise Reduction (ON/OFF, B/C, FILTER ON/OFF)**

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**Recording Level**

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**Headphones**

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**Mike Inputs**

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**Monitor (Source Tape)**

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**Transport Controls**

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**Playback Controls (TDK test tape, -20 dB DIN)**

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**Speed Accuracy**

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**Flutter**

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The emphasis, however, is squarely on the extra features that Sansui has managed to cram in at this middle-range price and, to some extent, on their organization into a handsome and very modern ensemble. (The case is available either in the black of our test samples or in a brightwork finish.) In sum, it looks good, it sounds good, and it does a lot very well.
going on the tape at the high end, where there is the least headroom.

Among the other features we particularly like is a flip-down door at the base of the cassette well, which provides excellent and convenient access to the heads, capstans, and pinch rollers for inspection and cleaning. The transport controls include a MUTE key. When tapped lightly, it mutes the signal going onto the tape for four seconds. You can create a longer blank simply by holding the button down. When the MUTE releases, the deck automatically goes into PAUSE. Slightly separated from the rest of the transport controls is a three-position slide switch for automatic rewind. In its center position, the switch defeats this function. In either of the other two, it causes the transport to go directly from RECORDING or PLAY into REWIND when the end of the tape is reached. Once the tape is fully rewound, the transport goes into either STOP or PLAY, depending on which switch setting has been selected.

Operation of the ATRS is straightforward: All you do is put the machine into RECORDING and press the ATRS START. When the D-2200M is through with its test and adjustment sequence, the tape will automatically rewind and a pushpad to the far left of the START, labeled ATRS, will light. Until you run the ATRS again for that tape type, you can instantly retrieve the computed settings from memory simply by pressing ATRS. You can revert at any time to the deck’s preset adjustments for a particular tape type (metal, ferric, etc.) by pressing the pad labeled FIXED.

There’s also a switch for unattended recording or timed playback by means of an optional external timer. The D-2200M uses a dual-capstan transport for optimum tape-to-head contact and minimum tape instability and scrape flutter. Its recording head (made of sendust and ferrite) and playback head (made of ferrite) are mounted in the same housing for precise, permanent align- head (made of ferrite) are mounted in the same housing for precise, permanent alignment. Both Dolby B and Dolby C noise reduction are included.

Conforming to the manufacturer’s rec-

ommendation, Diversified Science Labora-
tories used Maxell XL-11S as the Type 2 ferroboth tape, Maxell MX as the Type 4 metal, and Maxell UD as the Type 1 ferric. (However, since DSL also used the ATRS before making its measurements, the exact tapes used are far less critical than they would be without the adjustment. The record/play curves DSL obtained are all at least reasonably flat—and very flat for the Type 2 tape. Moreover, Dolby tracking proved excellent, even with the C circuit (which is less tolerant of sensitivity-matching errors than B) engaged. Signal-to-noise figures are also very good, though a trifle puzzling: Dolby B improves them by 10% to 12% dB (more than the expected 10 dB), while the Dolby C figures are only 6% to 7 dB better than those with Dolby B (a few dB less than expected). (A-weighted noise figures, such as we used to report, are about 2 dB better without noise reduction than the CCIR-ARM readings shown in our data column. With Dolby B, they are about the same, and with Dolby C, they are just a shade worse.) The D-2200M’s distortion and (especially) flutter are exceptionally low—the latter owing most probably to Hitachi’s use of a dual-capstan transport.

Hitachi has used high technology to good effect in the D-2200M, wedding performance to convenience. We wish that the battery back-up for the ATRS memory were fully internal and rechargeable, instead of requiring periodic replacement of dry cells—but this is a minor point. All the controls fall easily to hand, and we like the recording-level display very much. The meters’ fast attack and slow decay times, combined with the special high-frequency level indicators, make level-setting as close to a snap as it can get. In conjunction with ATRS, Dolby C, and the D-2200M’s high level of basic performance, they have enabled us to make tapes that are almost invariably difficult to distinguish from the original sources. And that, in our opinion, is just about the nicest thing you can say about a tape deck.

Circle 94 on Reader-Service Card

A Quick Guide to Tape Types

Our tape classifications, Type 0 through 4, are based primarily on the International Electrotechnical Commission measurement standards.

**Type 0 tapes** represent “ground zero” in that they follow the original Philips-based DIN spec. They are ferric tapes, called LN (low-noise) by some manufacturers, requiring minimum (nominal 100%) bias and the original “standard” 120-microsecond playback equalization. Though they include the garden variety formulations, the best are capable of excellent performance at moderate cost in decks that are well matched to them.

**Type 1 (IEC Type I) tapes** are ferric requiring the same 120-microsecond playback EQ but somewhat higher bias. They sometimes are styled LH (low-noise, high-output) formulations or “premium ferrics.”

**Type 2 (IEC Type II) tapes** are intended for use with 20-microsecond playback EQ and higher recording bias still (nominal 150%). The first formulations of this sort used chromium dioxide; today they also include chrome-compatible coatings such as the ferroboth.

**Type 3 (IEC Type III) tapes** are dual-layered ferrichromes, implying the 70-microsecond (“chrome”) playback EQ. Approaches to head biasing and recording EQ vary somewhat from one deck manufacturer to another.

**Type 4 (IEC Type IV) tapes** are the metal particle, or “alloy,” tapes, requiring the highest bias of all and retaining the 70-microsecond EQ of Type 2.
Even before the microprocessor won its place as king of the cassette-deck-feature hill, shopping for a recorder could be nightmarishly complicated—especially for the neophyte. Aside from the fancy and unfamiliar names cloaking simple (and sometimes quite familiar) features, there always have been questions about which capabilities would really pay off once you got the deck home to your listening room.

To shed a little light into the dark places, let’s examine one by one a list of what, in my opinion, are the ten “hottest” features in cassette hardware today to see what they do and why they may be of use to you. As usual, let me caution that the emphasis here must be on you; your priorities as a music listener and as a recordist must take precedence over mine in determining which features are important, and my recommendations must be read with that in mind.

1. **“Three-Head” Design**

This is a fundamental feature—one of the first design elements on which you should base a buying decision—and understanding the options is very important. So let’s begin with some definitions.

The least expensive recorders all employ a strict two-head format: one for erase and one that doubles as both a recording and a playback head. That’s the key point. This head can be switched to operate as either a recording or a playback element, but both cannot be managed simultaneously. With good design such a head will perform on a par with some of the more advanced designs (though potential performance is intrinsically limited by the dual-purpose approach). So, in terms of sound quality, you may not have to sacrifice anything by choosing a two-head model over one with three heads.

What you may be sacrificing, however, is what’s known as monitoring, along with some capabilities that go with it. This feature lets you listen to the newly recorded tape (via a playback head or playback head-gap). Essentially, it’s reassuring to be able to hear what has been recorded on the tape and to know that you can correct any problems before the recording goes any farther. And if the deck provides a tape-matching “fine-tune” feature (see feature two, below), particularly if the adjustment is manual rather than automatic, the monitoring capability lets you assess the effect of your adjustment while you’re making it, instead of requiring you to rewind and play back the tape first.

But simply because a deck has a separate playback head or headgap doesn’t mean it offers monitoring. Some models—including some very fine ones—have separate gaps, each custom engineered for its particular task, but they don’t permit playback while a recording is in progress. Often this happens because the designer judged the cost of dual noise reduction (for simultaneous recording and playback) unwarranted for the intended market, or because he wanted to avoid the possibility of potential interference between the two headgaps. Interference can arise when (as often is the case) separate recording and playback elements are built into a single case to create, essentially, two heads in one. You can’t always tell how many heads there are functionally, just by looking. (That’s why I keep saying “heads or headgaps”; some appear to be one head with two sets of headgaps.)

Combining two heads in one case solves one set of problems but creates others. The relatively high current in the recording element can induce an output in the playback element, creating the aforementioned interference. Also, the cramped dimensions of such a head can exacerbate what is known as the “contour effect” (or “head bumps,” in the vernacular), which introduces roughness into the response. Finally, though the elements are very close together, minimizing the possibility that the tape will skew (changing its effective azimuth and thus compromising response at very high frequencies) between the two, the physical relationship between the elements usually is fixed during manufacture. This makes permanent any azimuth mismatch that has been created. In contrast, totally separate heads are easier to fit with some form of azimuth correction. (Combination heads need no correction because they use the same gap for both purposes.)

In sum, a monitoring-head scheme is very useful, but it raises the cost of comparable performance. It is, however, a necessity if you’re going for ultimate performance and a near-necessity if you’re doing live recording in the field. Otherwise, you...
may want to let your choice be determined more by a deck’s tape-matching system."

Like the variety of head configurations available, tape-matching options extend from a comfortable, inexpensive, somewhat compromised plateau of good performance right on up to the ultrafussy stratosphere of perfectionism. If you consider yourself a music listener rather than an audiophile (it is possible to be both, after all), a combination head and a simple selector switch for, at minimum, Type 1 and Type 2 (ferric and “chrome,” respectively) tapes should be fine. Type 3 (ferrichrome) tapes tend to be fairly expensive and sometimes don’t perform as well as the other two types; Type 4 (metal) is generally expensive and offers an inconsequential margin of improvement for all but the most ardent audiophile.

I can state that with confidence now—where I couldn’t have done so a couple of years ago—because tapes within the various groups recently have become very much alike in performance, making them reasonably interchangeable. But differences do exist—even between one batch and another of a given brand, as formulations are progressively improved—and the only way to squeeze top performance out of any given tape is to match the recorder’s behavior to its particular characteristics.

Most fine-tuning adjustments for tape-matching control bias, if nothing else. The influence of the high-frequency AC bias current that makes possible modern low-noise, low-distortion recording is not the same at all audio frequencies. When the bias is too high, response remains good in the midrange and bass but droops badly at the top end; if it’s too low, midrange and bass response may be somewhat depressed and the top end will tend to develop a nasty peak. Thus bias current can materially influence the tonal balance you hear in playback. But to accurately or repeatably fine-tune bias requires that the deck have some built-in calibration system, usually a dual-tone oscillator whose upper tone must be matched in volume to the lower on playback for correct bias.

Though less audible than a severe bias mismatch, a mismatch of sensitivity, combined with Dolby noise reduction, can be an irritating problem. What occurs is “mistracking” of the Dolby playback decoding relative to the encoding that took place during recording. Adjustment normally is via a reference-level midrange tone, which must be recorded at a setting appropriate to produce the reference level once again on playback. If the deck is adjusted for a tape that is markedly (say, at least 2 dB) less sensitive than the one you are using, the result will be an apparent diminution of bass with Dolby C, an increase in apparent brightness with Dolby B, and negligible with no Dolby noise reduction. A tape less sensitive than the one for which the deck is adjusted produces the opposite results.

Some fine-tuning systems use microprocessors to program the operation automatically. These generally are excellent, and can address fine points, such as juggling recording equalization and bias for lowest distortion consistent with flat response, that must be passed over in manual systems. One automatic system even adjusts meter sensitivity to the 3% distortion point of the tape in use—an excellent idea that surely will be copied.

If you want the best possible quality in your recordings and are willing to pay the price, go for the automatic systems. If you have the will but not the means, choose manual adjustment that can be set accurately, an adjustment that can’t be calibrated on its own is little use unless you have test instruments on hand. And if you’re likely to forget to readjust the bias when you change tapes, a nonadjustable deck is probably all you need.

Any deck with pretensions to even medium-fi status includes Dolby B noise reduction, but what about the newer options, like Dolby C and DBX—to say nothing of Super-D and High Com?

Despite the millions who seem to enjoy Walkman and similar cassette portables that have no noise reduction at all, Dolby B is certainly a minimum requirement for high fidelity status because it reduces tape hiss to whisper proportions. But it does make demands on the deck; reproduction flat enough to be acceptable without noise reduction can become audibly colored by mistracking Dolby B. To get best results, you probably should expect to spend at least $250 for a deck. Dolby C (which literally reduces hiss to inaudibility under most practical circumstances) and DBX (which keeps it inaudible under virtually all practical circumstances) put a still greater premium on deck performance. Response anomalies and droopouts are exaggerated by the
expander action of these systems in playback, and both probably are better avoided at price points below $500.

If you can afford better and are fussy about the quality of the tapes you make from FM, LPs, or other tapes, Dolby C will give you excellent results at minimum extra cost; if you make live recordings, DBX will give you still more dynamic range, but it sometimes costs more. Both are common enough that the growing number of pre-recorded tapes employing each (as well as the number of other recordists with whom you can swap appropriately encoded tapes) should grow rapidly. The same cannot be said for systems such as Super D and High Com, but if you record only for your own use it makes no difference how popular your noise reduction system is.

Incidentally, don't confuse the HX and HX Pro circuits with noise reduction just because both carry the Dolby name. HX stands (more or less) for "headroom extension" and it is intended to permit higher recording levels than high-frequency compression effects will allow without it. The newer HX Pro circuit, which is available now on only a few decks, is very successful in this effort.

There's a genuine controversy here. Dolby Laboratories says the filter must be engaged when you're recording from FM to prevent undue influence from the 19-kHz pilot, though most tuners and receivers suppress the signal enough to prevent such influence. Since sharp filtration is anathema to those who subscribe to the broadband ultrafidelity theory, filter-defeat switches are added to many (but not all) of the best decks. Particularly with Dolby C, though, ultrasonic distortion products can adversely affect Dolby tracking even when you're not recording from FM. Unless you're a passionate ultrafidelitarian, therefore, leave the multiplex filter turned on full time, even if it can be turned off in your deck. In other words, defeatability is not necessarily desirable.

This is a feature I like, but you may never need it. Some program material simply doesn't need a fade at the beginning or the end; the PAUSE, used with or without a recording mute, can yield professional-sounding results if there's no background ambiance before or after whatever you're recording. But if there's applause, for example, an abrupt silence can sound exceedingly ungraceful.

A fade control allows you to fade out the applause without disturbing your main recording-level and balance settings, to which you can return at a touch of the FADE itself. Some are automatic: Generally, there's a button that you press to start a predefined level-change sequence. But the manual version (usually, though not always, a rotary knob) is easy to use, more versatile, and less expensive.

Some equipment lets you create a fade after the recording has been made—a sort of progressive erasure of the recorded signal. Controls of this sort I've tried generally work quite well and the results sound a lot more graceful than when an erased portion begins abruptly. And this ex-post-facto fade has the advantage that you can use it at relative leisure, whereas the more common "live" fade requires close attention while the recording is in progress.

Since the better decks have this feature, it has become associated with quality hardware, but it's not a very big deal. In some circumstances it can help to match levels for making valid A/B comparisons.

But levels in modern components are generally quite well matched to begin with, making this feature a minor footnote to the design.

With one exception. If we're talking about a headphone output-level control, and you plan on doing any live recording, go for it. During live recording you probably will do all your monitoring with the control turned up all the way. The preset headphone levels in decks without a headphone amplification stage tend to be inadequate for live work.

Whether you like Bruckner or background music, the long continuous-playing times of automatic-reverse decks can be an advantage. If you make off-the-air recordings, particularly of operas, a deck that will reverse in the recording mode can be a godsend. But there is a price to be paid. Transports, heads, and electronics all must be much more complex—and expensive—if they are to offer the same performance as an otherwise comparable monodirectional model. Most manufacturers evidently figure that purchasers who are interested in convenience won't be willing to pay the price for fully comparable performance, and they make compromises accordingly. I'd go for the manual high-performance alternative myself, but I can see valid reasons why you may choose the automatic reverse option.

This is another triumph of the microprocessor chip, and it can take several forms (and innumerable proprietary names). The simplest scheme "looks" for pauses of 4 seconds or more on the tape and stops wherever it finds one. Some can be set to stop at specific spots—say, the third and seventh recorded items on the tape—and may even accept random-order programming. Some of the newer ones will play a few (usually ten) seconds of each selection before going on to the next interselection space.

Only the systems that encode the selection number right on the tape (and they (Continued on page 80)
On Location With a Digital Deck

How a Sony PCM-F1/SL-2000 digital tape system fared in extensive field use.

by Richard Warren

Sliding a cassette into my Betamax, I kick off my shoes, put up my feet, and relax to the sound of Sir Georg Solti conducting the Chicago Symphony Orchestra in a performance of Beethoven’s Fifth Symphony. I’ve never before heard Beethoven quite like this outside of the concert hall. Like a live performance, the recording is free of clicks and pops, tape hiss, wow and flutter, compression and limiting, and audible distortion. Unfortunately, you can’t buy this recording.

My associates at WFMT in Chicago taped it, using Sony’s PCM-F1 digital audio processor and SL-2000 video cassette deck while recording the CSO for broadcast syndication. (Because of the extended bandwidth required by digital signals, ordinary tapes and tape decks are unable to record digital audio. Video
Some analog habits. For example, "0 dB" is blissfully easy, providing you discard the lessons we've learned from using the WFMT in studio concerts, and with folk Chicago and Milwaukee Symphonies, with how digital recording works, see "The perfectSony's digital audio processor ideally suits both amateurs and professionals. The first compact, lightweight, and relatively inexpensive digital adapter, it is smaller than most cassette decks and about the size of a Nagra IV S, the 'professional standard' portable recorder.

Though designed for use with any video cassette recorder format (Beta, VHS, or U-Matic), the PCM-F1 mates perfectly with Sony's SL-2000 portable Beta deck (which can double as a complete home VCR when used with its companion TT-2000 tuner/timer). They're the same size and design, and the top of the PCM-F1 case has special provisions for stacking the SL-2000.

Both units are available with optional internal rechargeable battery packs. Another option, is external AC power supplies—the AC-700 for the F1 and the AC-220 for the SL-2000—which together nearly equal the PCM-F1 in size and weight. Yet this four-piece package isn't any larger or heavier than WFMT's Nagra IV S with its QGB 1/2-inch reel adapter. Dolby A adapter, and massive power supply. And when it is properly packed together in a suitcase, the entire system is only moderately larger and more cumbersome than a Revox B-77. (Since the processor and deck require the same voltage, it would be an improvement if Sony were to offer a single AC power supply for both.)

If you already own a VCR, the F1 system is even more affordable. I've achieved great results using the processor with a $500 Sony unit, which our engineers have used with a professional U-Matic, placing a SMPTE synchronization code on the regular analog audio track to allow future synchronization with TV video. (I've been told you can accomplish the same feat using the audio track on a home VCR.) On domestic units, best results are obtained by using the fastest speeds—Beta II or VHS SP.

It's been my experience that the full potential of the PCM-F1, both in portability and flexibility, is most evident when it is used with the SL-2000. This petite Betamax enables the digital equivalent of cueing and of high-speed monitoring in fast forward and rewind, provides the ability to jump edit from one VCR to another, and has a real-time digital tape counter. Its pin (or RCA) jacks and supplied connecting cables are gold-plated to resist corrosion and to ensure perfect contact.

The face of the PCM-F1 combines form and function in a way that is considerably less intimidating than the esotericms of many audio cassette decks. All switches are recessed, preventing accidental operation. On the left are the power switch, a rotary volume control for headphones, and a headphone jack. On the right are a rotary level control for each channel, an illuminated amber record-mute button, and four feather-touch push switches for meter functions—tracking/level, peak-hold/automatic, manual reset, and battery check. Beneath these tiny toggle switches control muting, copy function, and line/mike input. Alongside are two low-impedance, unbalanced phone-jack mike inputs.

Between the controls are large, easy-to-read level displays that have a red overload area with flashing warning lights on the right. The battery-check scale is above the display, the tracking scale below, and at the bottom are indicator lights for muting, emphasis (not all digital formats use preemphasis), and copy-prohibiting. This last glows when a copy-guard code is on a tape.

The rear panel has a slide switch that selects 14- or 16-bit encoding. It is used only for recording, since in playback the PCM-F1 detects the bit rate and switches to it automatically. Both formats conform to the Electronic Industry Association of Japan (EIAJ) standard, meaning that the Sony can play back tapes made with any other digital audio processor conforming to that standard. And tapes made with the PCM-F1 can, of course, be played back through other EIAJ-standard processors. Greater dynamic range and slightly less distortion are achieved with 16-bit encoding, but the 14-bit mode yields improved error correction.

We've selected the 16-bit format almost exclusively and find that using high-grade tape is important. Sony Dynamic HG1, is exceptionally low in dropouts, the primary nemesis of digital recording. Dropouts trigger errors, which sometimes cause complete signal loss accompanied by noise bursts. (The F1's muting automatically detects such problems and squelches the audio to protect amplifiers and speakers.) An L-250 ("one-hour") and L-500 ("two-hour") Beta cassettes have proven the most convenient. (A conventional 2,500-foot 1/2-inch reel of 1/2-mil tape runs one hour at 3 1/2 ips and 30 minutes at 15 ips.) An L-250 is perfect for an average symphony, while a single L-500 can often record a complete CSO program or an entire folk or jazz show. Using an L-500 also eliminates the need to run multiple machines while recording extended works such as Beethoven's Ninth. (Nothing is more frustrating or embarrassing than having to change reels during a live on-location recording. Even if you should have to change a video cassette, it's still faster and easier than threading reels. Thinner tape, such as used in the L-750, is not recommended because of its higher dropout rate.)

The Sony PCM-F1/SL-2000 package withstands abuse as well as any analog machine we've used. It has made repeated trips from Chicago to Milwaukee and back, as well as between WFMT's studios and Orchestra Hall; it has survived a round trip flight as baggage between Washington, D.C., and Chicago; and it has been dropped and banged about while packed in a Stargard. The worst problem that has developed so far is a soft mechanical buzz in the SL-2000, which has not affected its recording capability.
The Whys and Hows of Digital Recording

It has long been known that, at least in principle, there are digital techniques capable of replacing the relatively blurry and distorted "magnetic movies" of analog recording with virtually perfect replicas of the original signal. Such recordings would have perfectly flat frequency response from below the lowest audible frequencies to beyond the highest, independent of tape formulation; vanishingly low distortion; dynamic range wide enough to encompass any anticipated input signal without audible corruption; and for all intents and purposes, no wow and flutter at all. The trick is to stop trying to record a perfect image (or analog) of the input signal: What a digital tape deck would record would be a precise instructions, down to the finest detail, for reconstructing the original signal—flawlessly. The only stumbling blocks were technology and expense. The first obstacle has now been fully brushed aside: It is possible today to make digital recordings of extraordinary fidelity. As for the second, the PCM-F1 is perhaps the most aggressive attempt to date to overcome the price barrier.

Like all other presently available digital recorders, the PCM-F1 uses an encoding system called pulse-code modulation (PCM). At precisely timed intervals, it measures the voltage of the incoming analog signal process called sampling. A device called an analog-to-digital converter (ADC) then determines which of a predefined set of numerical values, expressed in binary notation, most nearly approximates the value of that signal's voltage. That binary number is then formatted as a standard NTSC color video signal and recorded on video tape. Because binary numbers consist entirely of ones and zeroes, it is very simple to encode them on tape as blanks (for zeroes) and pulses (for ones). As long as the pulses stand out above the tape noise, the recorder will be able to read them accurately on playback. Thus, the quality of a recording no longer depends primarily on the accuracy of the signal on the tape (as in analog recording), but on the resolution of the analog-to-digital (A/D) and digital-to-analog (D/A) conversions.

Resolution is determined by two things: the length of the digital "word" used to express the value of the signal voltage and how frequently the signal is sampled. The more bits (binary digits) in the word, the more possible values there will be to assign to the measured voltage, and therefore the more accurate the digital approximation. The number of possible values is equal to 2^n, where n is the number of bits in the word. In the illustration, we have used a hypothetical four-bit word capable of expressing only sixteen values. However, digital systems designed for high fidelity music reproduction, such as the PCM-F1, use 14- or 16-bit words capable of expressing more than 16,000 and more than 65,000 values, respectively.

Obviously, those are big numbers, but no matter how many discrete intervals are available, the match between actual measured voltages and digitally expressible values will never be perfect. This disparity creates what is called quantization noise. However, by using enough bits, it is possible to make the quantization noise so low as to be inaudible. In other words, the approximation can be made so accurate that a digitally reconstructed signal will be audibly indistinguishable from the original. Each bit adds about 6 dB to the signal-to-noise ratio (S/N), which can reach more than 80 dB for a 14-bit system and more than 90 dB for a 16-bit system.

The other factor affecting the resolution of a digital system is how often it samples the input signal. It can be shown mathematically that so long as the sampling rate is at least twice as high as the highest audio frequency to be recorded, enough information will be collected to enable essentially perfect reconstruction of the original waveform. For that reason, the Sony PCM-F1 samples the audio signal at the EIAJ-standard rate of 44.1 kHz times per second, or 44,100 kHz. To prevent any signals at frequencies greater than half the sampling rate from getting into the ADC (where they would cause distortion), the audio signal is cut off sharply above 20 kHz with a steep filter. The resulting bandwidth is more than adequate for music reproduction.

A little arithmetic quickly reveals why video recorders, rather than standard audio tape recorders, are used to capture the digital signal. Every second, fourteen (or sixteen) digits must be put on tape more than 44,000 times. That works out to more than 600,000 digits per second. When you add in the extra bits necessary for error correction codes and the like, you're getting up to bandwidths in the vicinity of a megahertz. Video recorders are designed to have that kind of frequency response to accommodate complex color signals; an audio tape recorder is doing well to get to 20 kHz.

When the time comes to play back a PCM recording, the binary numbers are read from the tape and passed to a digital-to-analog converter (DAC). The DAC translates the stream of digital bits into an electrical waveform whose voltage at any given instant corresponds to the value specified by one of the recorded digital words. This analog signal very closely resembles the original analog input signal from which the digital recording was made, but with some rough edges (resulting from its having been assembled from a large number of discrete voltages). However, because of the 44.1 kHz sampling rate, the discontinuities (the "joins" between the samples) are entirely ultrasonic and can be shaved off with a sharp low-pass filter, normally set to remove frequencies above 20 kHz. The final result is a smooth, virtually perfect replica of the original signal, free of noise, distortion, and deviations from flat response.

The Whys and Hows of Digital Recording

MICHAEL RIGGS

Simplified representation of the PCM sampling process: The height of each bar corresponds to the nearest four-bit digital approximation (given in binary notation) of the signal voltage at that instant. The sampling rate is determined by the time interval between samples, here indicated by the spacing between the bars.
A combination audio-video receiver is Kenwood’s follow-up to its audio-video amplifier [Hands-On/Lab Test, May]. The VR-510 has an amplifier section rated at 30 watts (143/4 dBW) per channel, a digital frequency-synthesis AM/FM tuner with twelve presets and automatic scan tuning, and the standard complement of controls. Also included is switching among broadcast television, VCRs (two, or one VCR and a video disc player), video games, or computer. All these features are housed in a single chassis, along with such extras as video dubbing capability and an Audio Enhancer circuit that transforms mono TV sound into pseudostereo. Price of Kenwood’s VR-510 is $420.

Operating on the theory that sound is as important as sight, WC has developed a three-piece component video system (recorder, tuner/timer, and camera) that includes stereo recording and playback capability with two-way Dolby B noise reduction. The 10-pound (including battery) HR-2650 VHS recorder is a four-head design with built-in insert- and assemble-edit functions, frame-by-frame advance, and fast viewing—in standard play (SP) at seven times normal and in extended play (EP) at twenty-one times normal speed. The HR-2650 can record simulcast signals through its stereo audio inputs.

The companion TU-26U tuner/timer/adapter unit has 105-channel tuning capability (including the unscrambled midband and superband cable channels), two-week, eight-event programmability; and fourteen preset channels. The tuner also recharges the recorder’s batteries.

The GX-S9U color video camera, with an f/1.6 lens and 6:1 two-speed power zoom, is geared toward the serious video-phile. Special features include fade (to black and—highly unusual—also to white), a seven-mode function indicator in the electronic viewfinder, and an Automatic Beam Optimizing circuit that enables its Saticon imaging tube to shoot bright scenes without image retention. Price of the HR-2650/TU-26U pair is $1,500; the camera sells for $1,100.

A VHS-camera/Beta-VCR adapter from Marshall Electronics lets you mate VHS-standard 10-pin video camera outputs to 14-pin Beta-standard deck inputs. The Camera Mate CM-1014, as it is called, is enclosed in a waterproof housing; its microcircuitry translates VHS trigger pulse, pause, record light, and playback functions to Beta standards. Battery life of VHS cameras using the low-current-drain Camera Mate interface is said to be as great as that of Beta cameras of equal wattage. Price of the CM-1014 is $130.

Ghosts fade into obscurity with the Model VV-2700P Video Enhancer, according to Showtime Video Ventures. The unit is also said to eliminate noise, washout, and picture distortion. Computer owners will appreciate the two enhancement modes for video graphics (one improves light graphics on a dark background, the other lightens dark graphics on a light background); a third enhancer circuit is said to increase picture sharpness. You can monitor the effects generated by the $312 Video Enhancer via a built-in bypass circuit.

For a preview of new video equipment featured at the June Consumer Electronics Show, see page 9.


The Hands-On Report was conducted under the supervision of Edward J. Foster, Consulting Audio-Video Editor of HIGH FIDELITY and Director of Diversified Science Laboratories.

JVC was a principal force in launching the VHS video cassette recorder, and, as evidenced by the Vidstar HR-7650U, it continues to be one of the format's most innovative proponents. Not only is this the most feature-laden VCR we've tested to date, it is also among the most reliable.

The 7650 incorporates two audio tracks (also available on some other VHS, but not Beta, decks), enabling you to record and play in stereo or to use the two channels independently for bilingual recording. The tracks share the section of tape normally used for mono audio, so stereo recordings made on the 7650 can be played back on mono-only VCRs and vice versa. Despite the close spacing of the two tracks, we heard no crosstalk. (We recorded music on one track and voice on the other, and then switched between them via the Audio Monitor.) Theoretically, the narrow audio tracks should shave about 3 dB from the typical S/N ratio of a mono VCR. Indeed, hiss was quite apparent on our wideband stereo system unless we took advantage of the deck's Dolby B noise reduction, another of its highly useful features.

Tapes made with Dolby on the 7650 are substantially quieter than unprocessed recordings, even mono ones, made on other machines. But an unencoded tape played on the 7650 and linked to a good system sounds quite noisy, though not much more so than recordings made and played on a good mono machine. Generally, we found it best to leave the Audio Monitor at Stereo and to use our amplifier's mode switch to combine the two channels into mono. This ensures that the signals for the two channels are added directly, which effectively restores most of the 3 dB that otherwise would have been lost.

Although the 7650 records only in the standard-play (SP) and extended-play (EP) modes, it will play back long-play (LP) tapes. Separate pairs of heads with optimized gap-widths are used for the two recording modes to attain best results at each speed. Even if the VCR is switched off, as long as it is connected to a power line, the video drum remains heated to prevent condensation. Consequently, there is no dew-warning lamp.

Like other VCRs, this deck senses the proper playback speed and automatically switches to it. Lights indicate the LP and EP modes, but not SP. A Tape Run indicator blinks at a rate proportional to tape speed and operates in all modes, including Fast Forward and Rewind. Approximately ten minutes before the end of the tape, Tape End lights; five minutes before tape end, it begins blinking. The deck automatically rewinds at the end of the tape, unless you are using a timed-recording mode.
Front-panel loading allows you to stack JVC's 7650C video cassette deck with other components. Channel presets, located in the top panel, are rarely changed after being entered initially.

The variety of timing options is quite impressive. In addition to programmability for eight-event, fourteen-day unattended recording, there is a "sleep timer," which enables you to continue a recording you've begun manually even after you've turned it off for the night. Set the VCR for the amount of time needed (up to 395 minutes, in 5-minute increments), and the machine will shut off automatically.

The tuner section is exceptionally quiet and sensitive, even in our fringe reception area. The deck receives all normal low- and high-band VHF stations (Channels 2 through 13), the UHF band (Channels 14 through 83), and midband and superband cable channels A through W. (With some cable setups, the HR-7650U may not be able to record one channel while you're viewing another, nor can it record more than two preprogrammed channels from some CATV converters.) Separate VHF and UHF inputs and outputs are provided. VHF uses 75-ohm F connectors; UHF uses 300-ohm screw terminals. Only one 300-ohm to 75-ohm balun transformer is supplied with the VCR, because most modern TV sets already have 75-ohm coaxial F inputs.

The critical video drum is directly driven by a brushless, quartz-lock servo motor; four additional motors drive the capstan, the reels, the tape-threading system, and the handy cassette-loading mechanism. Unlike earlier VCRs, which were top-loading, this one loads from the front. When you insert the cassette, the motor takes over and pulls it the rest of the way into the deck, loading the tape properly. Eject is power assisted, too. The front-loading design has a distinct advantage: The deck can be stacked with other components as long as some space is provided for heat dissipation. The only time you might ever need to gain access to the top after setting up the unit would be to change the channel presets.

For playback, the 7650 provides a number of special effects in both the SP and EP modes. PAUSE freezes a single frame (the deck goes into STOP after about six minutes to protect the tape); FRAME ADVANCE advances the tape frame-by-frame; and SLOW produces a slow-motion effect that can be adjusted from 1/5 to 1/30 of normal speed via a control behind the flip-down door on the front panel. When the machine is in PLAY, pressing FF orREW gives you high-speed cueing in either direction as long as you hold the button down. When you release it, normal playback resumes. (Shuttle speed is seven times normal in the SP mode and twenty-one times normal in EP.) From STOP, the same buttons give you fast forward and rewind (both without pictures). Of course, audio is squelched during all special effects.

Once recording has started, an automatic channel lock prevents accidental changes in program source. The lock is also engaged when the recorder is turned off, in the program-setting mode, in playback, and whenever you are recording from the auxiliary or camera inputs. In all cases, the lock...
A Close-Up
Look at the
HR-7650U’s
Controls

Programming the HR-7650U for unattended recording is fairly simple. PROG SET converts the display from time of day to the programming mode and automatically sets up the timer for the first entry. Pressing SET consecutively advances the electronic tuner through the channels until you get to the one you wish to record for Program 1. SELECT switches you to the days of the week, Sunday first. Consecutively pressing SET advances the display through the days of the first week and into the next (indicated by the legend "2nd"). When you’ve chosen the day, you press SELECT, which switches the timer to the hour mode, and SET, which advances the hour. The next press of SELECT switches the display to minutes; with SET you advance to the desired starting time. (The HR-7650U comes on about 10 seconds prior to the programmed starting time to give the tape a chance to load.) A final press of SELECT enters the REC LENGTH mode. The electronic tape-counter display now indicates the length of time you wish to record. Each press of SET adds 5 minutes to the count, up to a 395 minutes maximum. Once the first program has been entered, you can begin a second one by pressing PROG NO. When you’ve finished programming, CLOCK returns the display to the time.

You can check the programmed starting time, the day, and the recording length of any event you’ve placed in memory by entering PROG SET and pressing PROG NO until you get to the one you want. If you wish to change the entry, pressing CANCEL will clear the program slot. Any or all programs can be repeated weekly by pressing REPEAT. (The week starts from the day you program. Thus, if you set up at 10:00 a.m. on a Wednesday, the first week goes through 9:59 a.m. the following Wednesday; at 10:00 a.m., the 2nd week starts.)

The quartz-controlled clock is set by pressing CLOCK SET and then using the same SELECT SET buttons employed to program the timer. A capacitor stores sufficient energy to keep the clock running and the programs stored in memory during power outages of up to 10 minutes. For longer power failures, the clock resets to 12:00 a.m. Sunday and blinks to advise you that the programming has been erased.

An infrared wireless remote control—the RM-P76U—is supplied with the HR-7650U. This small, battery-powered transmitter controls every major function on the VCR, including REC, PLAY, STOP, PAUSE, STILL, AUDIO DUB, FRAME ADVANCE, SLOW (with the actual speed set on a front-panel control), FF,REW, (and via the last two, the SHUTTLE SEARCH modes). Pressing CHANNEL advances the tuner through the sixteen preset stations, skipping those that you have programmed it to bypass. By using the VCR’s tuner to feed the TV receiver, you can add remote channel selection to sets that lack that feature. A pair of buttons turn the VCR on and off. Whenever the VCR is turned off, the feed to the TV set switches automatically to ANTENNA. A manual VIDEO button selects the picture source; with the setting on TV, you can watch one program while recording another. In our tests, the RM-P73U worked flawlessly, even from 30 feet away.
You can choose from three video input sources and three audio output modes.

A three position audio monitor selects stereo channel 1 (normally the left channel fed through both outputs), or channel 2 (the right channel through both outputs) for playback. Of course, if you're listening to a typical TV set, both outputs are combined into mono. (The purpose of the selector switch is to delete the unwanted channel on a bilingual tape. Normally, the switch is left in stereo.) To listen in stereo, you connect the rear-panel audio-output jacks to a normal stereo amplifier attached to a pair of loudspeakers and then turn down the TV sound. Or you can plug a pair of stereo head-phones into the VCR's front-panel jack. (There's no volume control, but the level was well matched to the headphones we used.)

A three-position rec select chooses the recording source: aux, tuner, or camera. When using the VCR's tuner, a mono audio signal is recorded on both tracks; if two microphones are plugged in, the output from each is assigned to a separate track. (Because there are no input-level controls for the mikes, there is no way to control the relative levels of the mix except through initial mike placement.) In aux, the rear-panel video- and audio-input jacks feed the recorder, so you can record in stereo. In camera, the camera's built-in microphone is recorded on track 1 (the left channel). If you plug an external mike into the channel 1 mike input, the camera mike is automatically disconnected. In either case, you can record in stereo by plugging a mike into the channel 2 input.

When tuner is selected, the auxiliary audio-input jacks are not live, and mono signals from the tuner are fed to the tape. This creates a problem: You can't record video from the VCR's tuner and stereo audio from an FM tuner at the same time. To take full advantage of a simulcast broadcast, you would need a second TV tuner connected to the rear-panel video jack. Then you would select aux and feed the stereo FM signals to the audio in. The HR-7650U does provide audio dubbing facilities, but not in stereo. The signal to be dubbed is recorded on track 2 (normally the right channel) either from the channel 2 auxiliary input, the channel 2 microphone input, or monaurally as a composite of the two.

There are two convenient cueing functions. Each time you begin recording, a cue signal is placed on the tape. When search (a switch behind the flip-down door) is set to cue and then ff or re-w is pressed, the tape shuttle to the next cue signal and stops. For tapes that have been recorded on other decks and lack the cue signal, placing search in the counter position stops the tape at counter zero in either fastwind mode.

With this wide an array of features, a good owner's manual is essential. JVC's is more than adequate, providing detailed instructions on the full range of operations, from basic to advanced.

A three position audio monitor selects STE-REO Channel 1 (normally the left channel fed through both outputs), or channel 2 (the right channel through both outputs) for playback. Of course, if you're listening to a typical TV set, both outputs are combined into mono. (The purpose of the selector switch is to delete the unwanted channel on a bilingual tape. Normally, the switch is left in stereo.) To listen in stereo, you connect the rear-panel audio-output jacks to a normal stereo amplifier attached to a pair of loudspeakers and then turn down the TV sound. Or you can plug a pair of stereo head-phones into the VCR's front-panel jack. (There's no volume control, but the level was well matched to the headphones we used.)

A three-position rec select chooses the recording source: aux, tuner, or camera. When using the VCR's tuner, a mono audio signal is recorded on both tracks; if two microphones are plugged in, the output from each is assigned to a separate track. (Because there are no input-level controls for the mikes, there is no way to control the relative levels of the mix except through initial mike placement.) In aux, the rear-panel video- and audio-input jacks feed the recorder, so you can record in stereo. In camera, the camera's built-in microphone is recorded on track 1 (the left channel). If you plug an external mike into the channel 1 mike input, the camera mike is automatically disconnected. In either case, you can record in stereo by plugging a mike into the channel 2 input.

When tuner is selected, the auxiliary audio-input jacks are not live, and mono signals from the tuner are fed to the tape. This creates a problem: You can't record video from the VCR's tuner and stereo audio from an FM tuner at the same time. To take full advantage of a simulcast broadcast, you would need a second TV tuner connected to the rear-panel video jack. Then you would select aux and feed the stereo FM signals to the audio in. The HR-7650U does provide audio dubbing facilities, but not in stereo. The signal to be dubbed is recorded on track 2 (normally the right channel) either from the channel 2 auxiliary input, the channel 2 microphone input, or monaurally as a composite of the two.

An automatic edit feature backspaces the tape slightly to provide smooth transitions between sequentially taped scenes. It also facilitates insert editing, from such inputs as camera, aux, or tuner, with a minimum of picture distortion at the edit points.

There are two convenient cueing functions. Each time you begin recording, a cue signal is placed on the tape. When search (a switch behind the flip-down door) is set to cue and then ff or re-w is pressed, the tape shuttle to the next cue signal and stops. For tapes that have been recorded on other decks and lack the cue signal, placing search in the counter position stops the tape at counter zero in either fastwind mode.

With this wide an array of features, a good owner's manual is essential. JVC's is more than adequate, providing detailed instructions on the full range of operations, from basic to advanced.

If you haven't heard stereo video sound, you're in for a pleasant surprise. Among other sources, we used Paramount's The Jazz Singer, which, in the VHS version, is recorded in Dolby-encoded stereo. Although we'd hesitate to stack it up against the Capitol soundtrack, it was acceptably quiet on our wide-range stereo system and was reproduced by the 7650 with adequate bandwidth. True, this is not "audiophile-quality" sound, but it is immensely more enjoyable than what you get from typical unencoded mono tape.

Video performance, both on prerecorded tapes and on those made on the 7650, was excellent. Compared to the superb SP performance, EP's definition was a bit softer and experienced more chroma (color-signal) noise, but the picture was still well above average. The deck did tend to produce one slow-moving color noise bar when it began playing, but the circuits stabilized almost immediately.

Special effects are quite good and operate equally well at either recording speed. A noise bar was likely to appear in freeze, but it was relatively narrow and generally near the edge of the screen. More noise bars occur in the search modes, but did not interfere with locating a particular program segment. With our TV receiver, ff search produced a stable image. Rew search caused the picture to roll slowly, a problem the 7650's vertical hold seemed unable to correct. We consider that a very minor flaw, however.

Obviously, you can buy a VHS deck for much less than this $1,600 JVC unit. But if you want one of the most feature-filled VCRs available, one whose overall performance we have yet to see surpassed, and one that can bring Dolby-encoded stereo to your video system, the 7650 should be at the top of your list.
**VIDEO**

**TubeFood**

New video programming: pay and basic cable  by Susan Elliott

(Check local cable listings for availability and schedules)

**August Arts Cable**

**OPERA and ITS PERFORMERS**
**ABC Arts: Call Me Flicka.** A profile of Frederica von Stade. Peter Grimes, conducted by Colin Davis (Covent Garden). Latte Lena.


**CBS Cable: The Ring of the Fettuccine;** music by Verdi, Bizet, Mozart (Broque [sic] Opera Co.).

**SYMPHONIC and CHAMBER MUSIC**

**Bravo:** St. Louis Symphony, Chopin to Dvorak with pianist Emanuel Ax, conducted by Leonard Slatkin. The Aspen Chamber Symphony with pianist Claude Frank and cellist Ronald Leonard, conducted by Jorge Mester (Mozart, Poulenc, Barber). Pianist Martha Argerich Plays Schumann, conducted by Bernhard Klee (Southwest German Radio Symphony). Lazar Berman. Piano Virtuoso (List, Schubert, Scriabin).

**CBS Cable:** The Chamber Music Society of Lincoln Center with soprano Judith Blegen, trumpet soloist Stephen Burns (Ravel, Scarlatti, Benedict, Strauss). Dvorak's Symphony from the New World, conducted by Karl Böhm (Vienna Philharmonic). R. Strauss's Burleske for Piano and Orchestra in D minor with pianist Rudolf Buchbinder, conducted by Christoph von Dohnanyi; Don Juan, conducted by Karl Böhm (Vienna Philharmonic). Handel's Royal Fireworks, conducted by Karl Richter; Bartok's Miraculous Mandarin conducted by Dohnanyi (Vienna Philharmonic).

**DANCE**

**Bravo:** Karen Kain, Prima Ballerina (Roland Petit's Ballets de Marseilles).

**CBS Cable:** Song and Dance—Britten's Friday Afternoons (Royal Ballet Lower School). La Fille Mal Gardée with Lesley Collier and Michael Coleman (Royal Ballet). Tapdancer (documentary).

**JAZZ and POPULAR SONG**
**ABC Arts:** I Am the Blues with Willie Dixon (documentary). Women in Jazz. The Creative Force with Marian McPartland, Carla Blev, Mary Lou Williams.

**Bravo:** The Bravo Jazz Festival: Dave Brubeck (Kato Song, Out of the Way of the People, Triton). CBS Cable: Singin' with Karen Morrow and Nancy Dussault performing songs from Broadway. The Songwriters: Arthur Schwartz with Dussault, Ed Evanko, Judy Kaye; Burton Lane with Larry Kert, Bobbi Baird, Martha Wright; Sheldon Harnick. Cabaret Times Three with Bobby Short, Hugh Shannon, Mabel Mercer (Sondheim, Gershwin, Rodgers & Hart, Porter).

**Pay Service Premieres**


**Showtime:** Tarzan, the Ape Man; Eye of the Needle. Victoria; Under the Rainbow; Friday the 13th. Part 2; Friday the 13th. Part 2; Under the Rainbow; Friday the 13th. Part 2; Under the Rainbow.

**Cinemax:** All the Fine Young Cannibals: A Global Affair. The Great Bank Hoax. The Fixer. Women in Love.

**The Movie Channel:** Tarzan, the Ape Man; Eye of the Needle; Victory. Clash of the Titans; Friday the 13th. Part 2; Under the Rainbow; Heartbeats. Knightsriders; Saturday the 14th; Pictures. The Street Fighter. Zoot Suit. Student Bodies. Sitting Ducks. J.D. and the Salt Flat Kid. Three Warriors. Separate Ways. Delta Fox; Tim. Never. Never Land. Looking for Mr. Goodbar. Birth of the Beatles.
The Collectors' Gioconda

Wherein the new London entry does not figure prominently
Reviewed by Conrad L. Osborne

This recording of La Gioconda is the opera's eighth, No. 5 in stereo. The interpretation does nothing to supplement or revise our vision of the piece, and apart from its engineering its strengths and weaknesses are not sufficiently out of the way to make it an oddity in the field. So perhaps the most useful perspective on it will be that afforded by at least a skimming of the Collectors' Gioconda.

Gioconda is a great singing piece in the same sense that Meyerbeer's operas are. Like the best of them, it is written to electrify through exploitation of grand-opera voices of all categories, as fairly commonly heard in the late nineteenth and early twentieth centuries. Also like the finest of Meyerbeer's work (I think especially of Les Huguenots), it has some very real dramatic strengths. These strengths are those of rhetorical Romantic melodrama, but that does not make them unreal—only difficult to refashion. Gioconda has outlasted its genre for three reasons: 1) The title role offers tremendous vocal and theatrical temptations to prima donnas—temptations that are compatible enough to modern singing and acting styles to work for a gifted few of each generation; 2) the score is fashioned with far shrewder proportion, and far fewer signs of torturous labor, than even the best of Meyerbeer's; and 3) the melodic invention just doesn't stop. Among all Italian operas, there are not more than fifteen or sixteen (six or eight by Verdi, three or four by Puccini, two by Donizetti, and one each by Rossini and Mascavalo) that are comparable in this respect. I count some twenty-two to twenty-four tunes in the solo sections alone (excluding those contained in the choral writing and Dance of the Hours) that have a quality of (to borrow a term that has become a pretentious cliche—perhaps we can devalue it a bit) numinosity. That's equivalent to roughly half the lifetime production of Richard Rodgers, numerous tunes- wise. This may not seem a sophisticated claim, but melodic inspiration continues to do well in the polls, despite all its bad press.

So: an opera of, among other things, great singing tunes, written in closed-form numbers, the wealth distributed among major roles representing all the standard modern "dramatic" vocal categories. An opera which, to do its writing full justice in a single performance, would require the sort of one-time casting coup achieved in the justly famed 1962 Scala Ugozatti, and which is therefore in many ways best experienced through an assemblage of excerpts or by hopping around among individual performances on the complete recordings.

Ironically, very little of the title role gets onto excerpts discs except for "Suicidio!"—the rest of Gioconda's great moments occur in little spurts that spring directly from turns in developing scenes—a strength of the role, but not when it comes to creating highlights. Among recordings of the aria, the benchmark is Ponselle's, a good late acoustical (1925)—though with a respectful over-the-shoulder glance at that of Nordica, whose grandeur of style and solidity of voice can at least be glimpsed in her second (1911) recording. The meaty thrust of Ponselle's opening phrases, the magnificently connected piano A natural at "Volavan l'ore," the smoky tension of her diops into a strong but never raw chest register—virtually every phrase sets a standard. Musically, too, she makes dramatic points, mostly by taking the time to allow for moments usually beat through or at least held short by conductors in more recent performances, e.g., her suddenly slowed tempo prior to the hushed descending F sharp scale at "di dormir queta dentro l'avell," or the well-milked C sharp on the second syllable of "dentro" in the final phrase.

Nearly as good is the 1953 Milanov version, similar in general outline but with just a trace a whoopiness here and there and a less open-throated chest—though the float of that same turn through "Volavan l'ore" is alone worth the listen. The other major modern voice belongs to Crespin. I miss some true chest strength in her rendition, but for sheer vocal beauty and regality of style she's unmatched, and her full-voice top B is the most thrilling on records, so far as one can be sure through the cavelike reverb that booms about it.

When it comes to the lower female roles, two sets of excerpts should be mentioned. One is the old Cetra Gioconda highlights album, pulled together from late- '40s recordings, wherein Ebe Stignani, in splendid voice despite the late date, offers the finest of all postwar "Voce di donna's" and Laura's romance and duet with Gioconda (Gina Cigna a full-out if sometimes edgy Gioconda) give us one of the few samples of the brief, exciting prime of Cloe Elmo.

The other is the grouping of extracts from the parts of La Ciocca ("Voce" and "Figlia che reggi") and Laura ("Laggiù nelle nebbie" and "L'amor com'e il fulgor"), recorded in 1930 by Irene Minghini-Cattaneo, the superb Ammeris and Azucena of the old Victor complete sets. I have them all together on a fine Club 99 disc, and have seen the same grouping on Preiser. This singer, with her round, rich mezzo voice and forceful but unforced native style, is exemplary in all these passages, and fortunate in her partners: the marvelous baritone Apollo Granforte, the surprisingly firm and ringing English tenor Lionel Cecil, and the soprano De Martis, vocally less imposing but a solid pro. Among many excellent versions of "Voce di donna" made by contraltos when we had contraltos, I especially recommend that of Karin Branzell. It is a little placid and slow, but incomparably deep-settled and polished, along with the same artist's "O mio Fernando..." I consider it a model of true vocal legato.

Tenor excerpts mean principally "Cielo e mar..." and though there have been hundreds of recordings, they can be rapidly winnowed out, for it is a challenging piece that many good singers fail to realize. There are several fascinating early versions (the first Caruso and Gigli ones, Anselmi, De Lucia) which should be heard by anyone interested in technique or history of style, but which are limited not only by sound but by reduction to one verse, or rather two half-verses. Among later recordings through the '30s, there are three that are essential: the 1910 Caruso, for smooth power of voice, the 1929 Gigli, for golden silkiness of tone, and the 1937 Bjoerling, for cleanliness of phrasing and perfection of technical balance (awful simplifications—ecce dumnaal).

The modern versions illustrate primarily the technical shortcomings of even our better large-voiced tenors, particularly when it comes to an aria that repeatedly twists just above or below the break at controlled dynamics. The estimable singers who for one reason or another don't really succeed with it range from Konya and Ilosky to Vickers and Corelli. Domingo's rendition is presentable but rather cau-
Before getting to the new complete recording, I shall very quickly characterize the
remarkable specificity of intent. Some technical problems are present, but she overpowers them with youthful energy and resilience. She is well matched with Fedora Barbieri, a young and reckless Laura of no great precision, but at least a genuine dramatic mezzo instrument. Among the others, the Barnaba of Paolo Silveri achieves some distinction. Gianni Poggi is at least doing honest battle with Enzo and sounding somewhat more appealing than his later norm, and the whole performance has sufficient vitality (Votto, cond.) to seem more than the sum of its sometimes mediocre parts.

Just the reverse is true of London's first attempt, wherein what looks like something close to a true Gioconda cast produces only one performance of true stature—Simionato's fine Laura, the only one to combine the right caliber and quality of voice with an emotionally full but dignified approach to the music. Perhaps one should also not complain of Bastianini as Barnaba, since he is so firm, strong, and right in general sound and feel. But the richness in his voice is monochromatic, and the lock he puts on the break imparts a stiffness, so that after a few minutes we realize we have heard the full inflectional range of a good but predictable and unimaginative singer. Siepi is competent but below his best form as Alvise, and while Del Monaco gives us some exciting moments, his efforts to deal with the lyric aspects of Enzo range from the foursquare to the weird. As Gioconda, Anita Cerquetti is concerned exclusively with the vocal mechanics of the role. She sings some handsome phrases, but nothing much gets said beyond "I made it!". Orchestra and chorus (Gavazzeni, I'm sorry to say—a good man trying to hold things together) are really slopped around on this set, and the engineering is the worst of all the Giocondas.

Angel's remake for Callas is quite decently recorded, played, and chorally sung (Votto again, more polished but a little less spunky than for Cetra). The soprano's work mixes the incandescent and the painful. Some parts of the Laura scene and of Act IV are even better than before. But the throat has closed in, thinning and unbalancing the sound. Most of the first act is dismaying, and I cannot imagine anyone preferring this as a whole to her earlier version. Cossotto and Vinco are solid as Laura and Alvise; from the standpoint of pure professional capability, their scene is the recording's best passage. Piero Cappuccilli, on an early outing, is a genial-sounding, prosaic Barnaba, Pier-Miranda Ferraro a decent, routine Enzo.

Victor's recording, under Previtali, has some spirit, but was made several years too late for its principals. Milanov, Di Stefano, and Warren all pull themselves together at points; too much of the time, though, the soprano sounds pale and thin, the tenor spread wide-open, and the baritones—Historically, he would probably do better with it now. I have not heard Tucker's recording, but Enzo was one of his finest parts and he must offer at least the basic satisfactions. That can also be said for the singing of Flaviano Labò. It is not as poetic or as technically sophisticated as some of the early versions, but it is stylistically sound, and at least has all the vocal groundwork in place. This tenor didn't have quite the touch of class of some stars or the shameless panache of some others, but for a few years he rang quite a lot better than those who did.

Gigli's was a perfect Enzo voice, with its luxuriant lyric quality backed by plenty of proclamatory ring, and steered by a temperament that was exuberant and ardent though sometimes in atrocious taste. He recorded the Act I duet with Barnaba three times (with Dani, De Luca, and Ruffo). All three are cut and all three are good, but the Ruffo version is a great disc—Gigli at his freshest, sending the great melody at "O grido di quest'anima" bounding out with an almost impudent impetus, and Ruffo, though a bit past his prime, still offering plenty of vocal color and an awesome climactic to the scene. Also very worthwhile is Gigli's acoustical of "Deh, non tremar"—he makes this page-and-a-half from the scene with Laura into a centerpiece of a transfer of it. The continuation into the duet, with a good Laura named Casazza, is also splendid. Though I have yet to find a decent LP transfer of it.

Ruffo, De Luca, Amato, and Stracchiari all recorded several excerpts apeice from the role of Barnaba. Except for a soaring "Pescator", Amato's discs are not among his best-sounding, at least in the transfers I have caught up with. The others are all representative of their originators, which is to say very fine. Ruffo, in both the monologue and the barcarole, is unmatched for easy plentitude of tone, and he is dramatically alert as well.

The role of Alvise has seldom been championed on records, but I know of two outstanding performances of his oft-under-rated scene, with its vehement recitative and prudishly flowing aria. One belongs to the young Siepi, heard to much greater effect on the above-mentioned Cetra highlights disc than in his complete recording—the voice had more of a bedrock base and a more generous tone in those early seasons. The second is by the always imposing Tancredì Pasero, who also offers far and away the finest singing I have heard of the scene with Laura in a 1927 disc with Stignani. (I should also mention the Pinza/Stevens version of this scene, which I haven't yet heard but which withstanding a late-ish date for Pinza has to be of considerable interest.)

**Ponselle as Gioconda: a benchmark aria**

Older ones. The only one I have not heard is the long-deleted Urania. It does not look as glamorous on paper, but to judge from a version made with more or less the same forces around the same time, and from my knowledge of the principals, it shouldn't be too quickly dismissed. Among its women, at least Miriam Pirazzini was a solid mezzo, and the men (Giuseppe Campora, Anselmo Colzani, and Fernando Corena: all young and fresh) were of some stature.

The other two mono recordings are both notable for their female leads. The earliest, originally one of the Columbia 78 sets under Molajoli, offers the Gioconda of Giannina Arrangi-Lombardi. She had a true Italian dramatic soprano and a thorough technique, and though there is no great individuality of insight in her performance, it is still, note for note, the best-sung Gioconda on records. Stignani, here heard as Laura, doesn't make quite the impact one might expect. The late '30s and early '40s seems too late for its principals. Milanov, Di Stefano, and Warren all pull themselves together at points; too much of the time, though, the soprano sounds pale and thin, the tenor spread wide-open, and the baritone's performance has sufficient vitality (Votto, cond.) to seem more than the sum of its sometimes mediocre parts.
Gioconda has outlasted its genre partly because its melodic invention just doesn't stop.
The Complete Dowland, More and Less

A composer famous in his time but now needing revival gets a considerable boost from Oiseau-Lyre.

Reviewed by Allan Kozinn

In 1976, British lutenist Anthony Rooley and his Consort of Musick marked the 350th anniversary of John Dowland's death with the initial installment of a series that would encompass the composer's entire output in an organized and integral fashion for the first time on disc. Now, five years and twenty-odd discs later (depending how one counts the peripheral issues), the project is complete. Or rather, a bit more than complete, and a bit less. On one hand, it includes such Dowland-related items as contemporary keyboard variations on his themes, and consort settings from manuscripts and printed collections other than his own. On the other hand, for certain of the ninety-two lute works that fill the five discs devoted to that side of his oeuvre, choices had to be made from among many existing versions, some presumed more authentic than others, although few pieces exist either in his own hand or in publications he authorized.

In most respects, the collection is a success in both concept and execution, and perhaps its greatest value lies in the extraordinarily broad overview it affords—not only of Dowland's development and creative scope, but of the performance conventions and shifting musical tastes of Elizabethan and Jacobean England. The peripheral recordings from Rooley's series—the keyboard transcriptions, Robert Dowland's Musicall Banquet, and other sets containing works by Dowland amid those of his contemporaries—further establish the musical context within which he worked, and his place therein.

In his lifetime, a characteristic insecurity about this last point caused Dowland considerable frustration, all duly conveyed in the introductions to his songbooks. He could not have been more famous. References to his songs and to his command of the lute are plentiful in English poetry and plays of the period, and the frequency with which his works appeared in Continental collections (with and without his permission) attests to his renown in Europe—rare for an English composer at that time. During his European travels, he found favor at several courts and was offered posts, one of which he eventually accepted, in Denmark. Yet his most fervent desire, an appointment at the English court, was denied him until he was fifty—by which time he was complaining bitterly about the young upstarts who denigrated both his compositions and his lute playing as old-fashioned.

When Dowland was seventeen, in 1580, he traveled to France in the employ of Sir Henry Cobham, England's ambassador to the French court. He evidently perfected his lute technique and perhaps began composing during his years there, and he made the politically unwise decision to convert to Catholicism. He most likely returned to England in 1584 or 1586, and in 1588 he received a Bachelor of Music from Oxford. The same year, at twenty-five, he was listed in Dr. John Case's Apologia musices as one of the most famous musicians of the day. Yet though his name crops up in records of court festivities over the next few years, he failed in his bid to replace a deceased John Johnson as one of the queen's lutenists in 1594. Blaming official prejudice against Catholics, he again left England, intent on visiting various European courts and studying with Luca Marenzio in Rome.

Apparently, Dowland missed Marenzio, but he probably met some other rising Italian composers, among them Giulio Caccini; and in all other respects, the voyage was a success—as Dowland noted in a lengthy letter from Nuremberg to Sir Robert Cecil in 1595. The following year, Dowland's friend and patron Sir Henry Noel wrote to him, suggesting that he return to England and that he might yet obtain the court post he sought. Upon his return, Dowland discovered that some of his lute works were being pirated in William Barley's New Booke of Tabliture (1596)—and worse, that the editions were "false and unperfect." He went about preparing his First Book of Songs (1597), which proved immensely popular and was reprinted five times by 1613.

But this, the first publishing venture Dowland personally oversaw, was not the first authorized publication of his music. In 1592, he contributed six Psalm settings to Thomas East's Whole Booke of Psalms, intended as practical music—simple four-part harmonizations for use in private worship. Rooley presents these in varied settings—four voices unaccompanied; tenor with organ; baritone or countertenor with viols and organ; and finally, in O God of power omnipotent, "A Prayer for the Queen's most Excellent Majesty," four voices, viol, and organ. Dowland addressed himself to devotional music later in life, and with a much freer hand, in A Pilgrimes Solace; but for the most part, sacred music was not his forte, and these early settings, performed along with a second, later setting of Psalm 100 (1621), are of marginal interest.

Yet the disc of "Lamentations, Psalms, and Sacred Songs" does offer intriguing items, including a curious adaptation of the song "Sorrow stay," retitled "Sorrow come," its amorous lyric replaced by a religious one, and two songs contributed to Sir William Leighton's Teares or Lamentacions of a Sorrowful Soule (1614), both far more characteristic of Dowland's later chromatic, polyphonic style, gorgeously sung here. So, too, is the disc's centerpiece, the seven Lamentations composed for Noel's funeral in 1597. These serene, brief works, written for the professional choir of Westminster Abbey, are far more affecting than those contributed to East's collection.

By the time the First Book was published, the thirty-four-year-old Dowland had become so well-known, both in England and abroad, that it was to some extent the equivalent of today's "greatest hits" anthologies. One song, "His golden locks," dates as far back as 1590, and Dowland, in his revealing introductory note, modestly tells his "courteous" reader that, "were it not for that love I beare to the true lovers of musicke, I had concealed these my first fruits, which how they wil thrive with your taste I know not, howsoever the greater part of them might have been ripe enough by their age." Even today, many of these youthful pieces remain perhaps the most frequently heard lute songs, among them, "Can she excuse," "If my complaints," "Come again," and "Wilt thou unkind thus reave me." This set, which launched the Rooley series, proves the easiest to return to. The songs have everything we associate with Dowland and his age—from affectations of dolefulness, often associated with unrequited passion, to a lively eroticism (if not quite the bawdiness so blatant in the songs of some of his colleagues) rooted in...
Elizabethan double entendre and, particularly, the use of death as a sexual image.

Music publishing was a fairly new business in Dowland's day, and his First Book was actually the first song collection printed in England. It established a format adhered to in the thirty English songbooks published over the following twenty-five years—each containing about twenty-one songs in a modified choir-book layout, with the cantus and the lute accompaniment printed together on the left-hand page and the three lower voices on the right, aligned upside-down, sideways, and normally, so that singers gathered around could read their parts unhindered.

All of which has led to some speculation about how Dowland's songs are best performed. His instructions on this book's title page (see reproduction—Ed.) are flexible, describing the works as " Songs or Ayres of fower parts with Tablature for the Lute: So made that all the partes together, or either of them severally may be song to the Lute, Orpharian or Viol de gambo." But Ian Spink, in English Song, Dowland to Purcell, argues that these are lute songs, not consort songs, and therefore most appropriately rendered by a solo singer. "It is clear," he writes after pointing out what he considers the awkward verbal underlay of the lower voices, "that we are frequently dealing with lute texture rather than true polyphony."

Rooley, however, keeps his options open, and his scoring decisions—not only in the First Book, but in succeeding volumes—are well considered and often quite clever. Spink is contradicted in the very first piece, the sweetly melancholy "Unquiet thoughts." Dowland's lower voices may be merely alternative versions, but often, as here, they work wonders. The first line of each verse is transformed from the simple tune of the solo version to an arresting four-chord figure, followed by appealing imitative interplay. Even where the transformations are less striking, the four-voice versions bring a freshness to works normally performed as solos.

Rooley does have the distinct advantage of a vocal consort with voices closely matched and easily blended and with expression and tone ideal for this music. The standout is Emma Kirkby, whose soprano possesses such uncommon purity that, for me at least, she virtually owns the early vocal repertory. Wisely, Rooley deploys his forces, both vocal and instrumental, to allow for maximum textural variety within each songbook, at the same time keeping an ear out for the treatment (solo or consort, male or female soloist) that suits each text best.

Basically, his options are: to distribute the solo songs among soprano, tenor, and bass—rarely to countertenor, and not until the fourth book, of 1612—and to accompa-
pervades several songs reflects sadness more than grief. The first four songs are scored for solo voice; the dark mood of the first two, Dowland's typical opening stance, makes way for the jaunty "Behold a wonder here" and the even lighter "Daphne was not so chaste." Tenor Martyn Hill delivers all four sensitively, with an unassuming touch of ornamentation in the repeated sections of the slower songs, an approach he takes consistently throughout the songbooks. His moment to really shine, though, comes later in this set, in the extraordinarily lengthy and moody centerpiece, "Love stood amaz'd." From the fifth song on, vocal duties are split between soloists and consort; since Dowland repeats certain of his rhythmic effects in several songs, one can almost hear how well the consort approach might work in a solo song, and vice versa. Curiously, Rooley abandons his alternative-scoring experimentation here but takes it up again in A Pilgrimes Solace.

Dowland's total output, equally important is the solo music for his own instrument, the lute. This diverse gathering includes free contrapuntal fantasies, variations on song themes (his own and others'), and sundry dances. Some, possibly written for amateur patrons, are short and easy; others, more akin to the reflective solos that established his reputation as the premier lutenist of the age, are lengthy and complex. How closely any of these reflect the way he actually played is, of course, impossible to say, since the lute music captured in print was not always set down by the composer himself and often represents a distillation of an extemporaneous performance.

Eliminating versions he considers either inauthentic or poor copies but including several he finds questionable, Rooley narrows Dowland's total to ninety-two pieces. Rather than present them by genre, he divides up five full-disc recitals, each played by a different lutenist.

The album has been out for some time in England, but London has opted to release it only through the new Polygram Special Imports division. At first this seemed an eccentric move: The "complete" Dowland minus the lute music is rather like the "complete" Beethoven sans piano works. Commercially, of course, the label must have reasoned that the market for a five-disc collection of lute music was specialized, at best.

It turns out, however, that the market may be even more limited than London suspected, for the playing here is not what lute aficionados are used to. Until now, the most widely heard lute discs were by concert guitarists who switch-hit—Bream, most prominently. Although some would argue the point, the contemporary guitar is best played with a combination of fingernail and fingerip, an approach that has been transferred to guitarists' lute playing, naturally enough. Purists currently hold, however, that the lute was played with fingertips. Obviously, this manipulative curiosity is crucial, for it is the fingertip, with or without nail, that directly produces the sound.

Predictably, notes played with nails are sharply defined, those produced only with fingertips more softly focused. As with any performance, the success of a nailless one (authentic though it may be) depends on the lutenist's technique. Unfortunately, the five players here are not equals, and a few leave much to be desired.

Anthony Bailes adopts a free approach to rhythm, ranging from the oddly halting to the square and dull, with little between, and his tempos are often sleepy. Things perk up toward the end, but the familiar First Fantasia is per Versely ornamented—sometimes cleverly, except that Bailes has to drag tempos irritatingly to accommodate his florid additions.

Unlike the songbooks, the lute works contain few notable rarities.

A peripheral disc in the Rooley series (DSLO 533) pulls together twenty-one consort arrangements of Dowland's music from various English and German printed and manuscript sources. As with the dances that fill out Lachrimae, many are based on song tunes, and not surprisingly, a couple more are Lachrimae settings. Here the scoring is more diverse, but the performances are often disappointingly bland. In the works taken from Morley's Consort Lessons (1600), for example, the playing lacks the brio of a treasured 1963 recording by the Julian Bream Consort (RCA LSC 3195), achieved despite "inauthentic" instruments and performance techniques.

Returning to England in 1606, Dowland found a musical world that was changing. Foreign musicians had become more prominent at court, and a generation of young lutenists, viol players, and singers was establishing new fashions in London. In 1612, he was finally granted a court post, and the day he was appointed, his fourth songbook, A Pilgrimes Solace, was published. He took the younger players to task and in his preface for their ignorance and arrogance and went on to present the most ambitious and brilliantly conceived song collection of his career.

Rooley, in his notes, sets out a five-section scheme to cover the succession of subjects: 1) worldly love; 2) platonic love; 3) worldly misere; 4) devotional contemplation; and 5) worldly love once again, now in the form of a wedding masque—which Rooley, stretching somewhat, suggests may symbolize the marriage of Man and his Creator. If the texts are by turns earthy and spiritual, the music vacillates between a conservative, tuneful polyphony, in the old consort style, and various newer approaches, from more elaborate settings influenced by Italian monody to several of a simpler, declamatory nature. In an odd scoring twist, Dowland prescribes solo voice, treble and bass viols, and lute for the ninth through eleventh songs.

Dowland has come a long way here from the easier and less intensely passionate First Book, and this is, perhaps, the least immediately accessible of his collections. His most adventurous set, however, it ultimately proves his most rewarding. Rooley's singers convey its inherent passion magnificently.

If songs make up the greater part of Dowland's output, equally important is the solo music for his own instrument, the lute. This diverse gathering includes free contrapuntal fantasies, variations on song themes (his own and others'), and sundry dances. Some, possibly written for amateur patrons, are short and easy; others, more akin to the reflective solos that established his reputation as the premier lutenist of the age, are lengthy and complex. How closely any of these reflect the way he actually played is, of course, impossible to say, since the lute music captured in print was not always set down by the composer himself and often represents a distillation of an extemporaneous performance.

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(Continued on page 81)

Martin Berkofsky and David Hagan, piano. [Wesley Horner, prod.] MUSICAL HERITAGE SOCIETY MHS 824464. $15.50 ($9.90 to members) (two discs, manual sequence) (add $1.60 for shipping; Musical Heritage Society, 14 Park Rd., Tinton Falls, N.J. 07724).

Suites: No. 1, in C, S. 1066; No. 2, in B minor, S. 1067; No. 3, in D, S. 1068; No. 4, in D, S. 1069.

Here's a bit of fun. Reger's piano-duet versions of Bach's Brandenburgs are not unfamiliar, but I'd never heard his arrangements of Bach's Brandenburgs are not unfamiliar. The dances dance as they might for the eighteenth century, and always crisply articulated. The overall strength of its cast, for the dramatic coherence of its conducting, and for the quality of the sound produced by its chorus, orchestra, and engineers. Because Masur has in recent years churned out so many symphonic recordings, we're apt to forget how much theater there is in his background, including four years as music director of Walter Felsenstein's Berlin Komische Oper. And because there is in circulation so much music-appreciation piffle to the effect that Fidelio is more "symphonic" than "operatic," whatever this might mean, I might establish straightway my bias that it is an opera, and a great opera by reason of the potency of its music-dramatic conflicts and the overwhelming personal stakes of the parties to those conflicts.

What distinguishes this recording and those I've listed as comparisons—by which I would add the currently unavailable Böhm/DG version—is the general subordination of interpretative theories to the pursuit of character needs. Masur gets his performance off to a rousing start with a powerful and unfussy Overture, which like many other portions of the performance reminds me of the still vivid 1944 Toscanini broadcast. Throughout the opera, the Gewandhaus Orchestra plays with classically textured strength and delicacy that are wonderfully captured by the recording, which is equally remarkable for breadth, immediacy, detail, and color.

The honesty of the recording has its potential drawbacks. Delighted as you're likely to be by the bassoon playing, you may be put off by the astringent oboe tone (given the purposefulness of the playing, I can accept it as part of the experience), and the Gewandhaus string tone is less lustrous than that of Karajan's Berlin Philharmonic (at least in the German edition; the Angel edition somewhat flattens and congests the sound), or of Maazel's Vienna Philharmonic—cf. the accompaniment to "Ha! Welch ein Augenblick." The Maazel recording, however, is less spacious and texturally transparent, while the Karajan, excellent as it is, was made in a more reverberant setting. In addition, the voices and orchestra...
are in fine balance. Masur gets beautiful results in such places as the introductions to the opening-scene quartet and Florestan's monologue, but these are the obvious challenges. More significantly, note the urgency of the opening scene, too often sloughed off as that folksy stuff that holds up the action forever. If there have been vocally better-endowed Marzellines and Jaquinos than Nossek (whose light lyric soprano sometimes falters in the passagework) and Wohlers (a sweet-voiced tenor who puts some belief into his spoken dialogue), it's hard to think of many who created livelier characters.

Completing the domestic trio is the happiest surprise of the recording. From Meven's solidly sung but uninteresting Caspar in the Kubelik Freischitz (London OSA 13136), I wouldn't have expected a Rocco of such vitality and vocal command—as good as any on records except perhaps Kipnis' (in the 1941 Met broadcast issued as MET 6, July 1979) and the best moments of Ridderbusch's (with Karajan). I'm startled to discover that Meven is fifty-two; where has he been hiding? Or is he only just coming into his own? In which case there are any number of roles in which the record companies could put him to good use.

Altmeier is a very good Leonore, disappointing mostly in that her lovely Sieglinde, much the most interesting contribution to the Boulez Ring, raised higher hopes. That this is much more active writing may explain why she hasn't gotten it quite settled in her voice, which tends to a shallower, brighter-edged sound here, especially on top. Still, the basic size and lyric quality of the voice are conspicuous, and these are prime ingredients for my kind of Leonore, as is Altmeier's interpretive directness. It seems to me neither necessary nor desirable that a singer constantly show off the character's Nobility and Devotion. Set her in action, and her actions will speak ever so much more effectively.

Fomentaro is her outstanding Leonore of this set, the still radiant-voiced Dernesch (with Karajan). Otherwise, there's Nilsson (with Maaalz) for those portions of the score where there's no substitute for raw power, and Jurinac (in the torrentiose-powered Knappertsbusch set, once again unavailable, for which I retain a possibly perverse affection), and not a lot else in the discography that I couldn't do without.

From Jerusalem's Florestan, one might guess that the principal effect of incarceration in Pizarro's secret dungeon is atrophy of the head register. Since so little of the role goes above the high G, which Jerusalem has, if not under really solid control, the desperate quality of his A's and B flats in the hallucinatory climax of the monologue and the A's in "O namenlose Freude" might pass as representations of Florestan's physical debility, but how then would you explain the sweetness and firmness of his midrange?

Well, there are enough full-voiced yet more convincingly harrowed Florestans—Vickers (with Karajan), McCracken (with Maaalz), King (in the Böhm/DG set), Ralf (in the wartime Böhm broadcast, see below)—to make it possible for me to appreciate the dignity and expressive clarity of this performance, in particular the "In des Lebens Frühlingsstagen" section of the monologue, so important to the character's view of his situation. In "O namenlose Freude," Altmeier sounds plausibly rapturous rather than gladiatorial.

There's no use pretending that Nimsberg more than gets through Pizarro, but getting through this torture test is no mean feat. The duet with Rocco goes well enough, and there are solid phrases scattered about, though without any consistency. Of course what we want to hear is a Heldenbariton with the agility to make all those leaps from midvoice up near the break. What we actually get is something else. For example, listen to Nimsger—like many Pizarros—lunge unsuccessfully at the D of the first "Nun ist es mir geworden" in the aria. A problematic role, to say the least; the Pizarros who give me the most satisfaction are Karajan's Kélémen, who attacks the role with the most cutting freedom, and Maaalz's Krause, who lacks precisely this force of attack but in terms of pure sustained singing tone probably manages the music better than anyone else on records.

Adam is a dry-voiced and mildly wobbly Minister, and though you could make a case that Don Fernando isn't such a font of wisdom and benevolence (what the heck has he been doing these last two years since his warm close personal friend Florestan disappeared?), singing like, say, Van Dam's (with Karajan) falls more gratefully on the ear. The two Prisoners are just fine.

Finally, two textual notes: (1) Assuming you accept the necessity for substantial pruning of the spoken text, the editing—including some tactful rewriting—has been managed with more than usual intelligence, and the dialogue included is rather well performed. (2) A good performance of Leonore No. 3 is included on side 6, after the final scene. (That's a new one on me.)

One unscholarly but useful way I can distinguish among multiple recordings of repertory staples is to ask which one(s) I'm most likely to pull off the shelf. For Fidelio, this has meant for some years the Karajan set, and it would probably still be my first choice—the cast is pretty formidable. Already, though, I'm finding myself drawn back to the Masur, and I expect I'd favor it...
still more if comparison were made with the domestic Karajan edition. The Mazazel set, a pleasant rediscovery for me, is sufficiently different in temperament, casting, and tone (having to do with the particular qualities of the Vienna Philharmonic and State Opera Chorus) as to be less a rival to the others than a supplement.

Of continuing interest are two wartime broadcasts, the 1944 Toscanini/NBC (available in German RCA’s Toscanini Edition, AT 204) and a compelling 1943 Vienna State Orchestra performance conducted by Böhm (available now as Acanta 23116, which I hope sounds a bit better than the old Vox edition).

BEETHOVEN: Variations on a Waltz by Diabelli, Op. 120.


Peter Serkin has made this pithy and absorbing work just as thoroughly his own as did his illustrious father a generation ago (Columbia mono, still available on CBS Special Products AML 5246). His recording is full of humor, gentle warmth, patient detail, and pianistic mastery. One could say as much for Rudolf Serkin’s rendition, but how different in emphases—and total effect—these splendid performances are!

The playing here focuses more on detail, on supremely well-voiced pianissimos, on an introspective vision based on magical tone colors and the like. The father’s recording, without exactly slighting detail, was generally tougher, more extroverted, less sensual, and in the main, more concerned with cumulative impact. In several concert performances, Peter Serkin’s interpretation also achieved that end—tautness, but here he tends to lavish more energy on the niceties of individual variations than on binding them into a single taut organism. Interestingly, though I had always thought of the elder Serkin’s reading as being broad and majestic, he actually takes a relatively brisk, slashing approach in many sections (e.g., the double-dotted “French overture” Var. 14) where the son is far more ruminative.

In certain details, Peter Serkin’s approach—deliberate and intellectual—has much in common with Leonard Shure’s recent version (Audiofon 2001, May). In addition, both recordings have a spacious sonic frame (slightly distant microphone placement vells some articulation but pays handsome dividends in a dynamic range wider than usual) and share certain peculiarities of balance (the left-hand staccatos in the second half of the “Noite e giorno faticar” Var. 22 are not heard clearly; they are crystal-clear in Rudolf Serkin’s version, played piano rather than the specified pianissimo). Like Shure’s, Peter Serkin’s interpretation of Var. 21 minimizes the dichotomy between the fortissimo 4/4 Allegro con brio and the piano 3/4 Menu alle
gro. In Var. 16 and its mirror image, Var. 17, with their trills and rotary, broken octaves, both these fine pianists initially seem a bit tame, lacking wildness and momentum, but provide an unusual, interesting lyricism as well as arresting subtleties of voicing.

Serkin’s rewarding Var. 9 (Allegro pesante e risoluto), which begins with understatement and builds to a superb fortissimo ending flourish, is followed by a Var. 10 not quite Presto, but incredibly fleet and effective. Similarly, the Presto scherzando Var. 15, though not particularly fast, is outstanding in its wistfulness and poise. (Here Shure is heavy and humorless). Serkin’s trills in the second half of Var. 6, tremendously ferocious, show some of his father’s characteristic demonic energy in their jolting, thrusting vehemence. And the finely controlled hairpin dynamics in the second half of Var. 8 are noteworthy.

Variation 20, taken broadly, demonstrates mesmerizing patience; the clarity and voicing rivet the attention, surpassing even Shure’s memorable effort in a similar style. And the Bachian Var. 24, given a rarefied, crystalline purity, is followed by an ebullient Var. 25 (such well-articulated sixteen-note phrases in the left hand!).

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But it's in the three minore Variations, 29 through 31, that Serkin reaches wondrous heights: The prominence of the left hand in Var. 29; the magical, sensuous beauty of the canonic Var. 30; the aerial filigree of heights: The prominence of the left hand in Var. 31, with its momentary reference to the canonic Var. 30; the aerial filigree of Var. 32, for all its brilliant color and detailed voice-leading, seems a little slack and amorphous. And aren't the thirty-second-note groups in Var. 33's second half uncomfortably anticipated? (At least that's the way I heard them in several listenings.) I also question the length of certain pauses; in concert these might have been effective, but on disc they allow concentration to wander.

I have discussed these details, pro and con, at considerable length, because the very high stature of the interpretation merits such painstaking attention. The perfect performance will probably never be given, but this one often touches on spiritual and pianistic greatness. Michael Steinberg's excellent annotations deal convincingly with the work itself, its genesis, and—interestingly—with some of the variations on the same waltz penned by other composers.

H.G.

DEBUSSY, FAURÉ: Songs.

DEBUSSY: Ariettes oubliées; Chansons de Bilitis. FAURÉ: La bonne chanson.
Unlike Ameling's recent CBS-recorded Mendelssohn recital (IM 36678), but like the Wolf Italian Songbook with Tom Krause issued by Nonesuch (NB 78014), this recital was produced and licensed by Klaas Posthuma in the Netherlands. And as in those recordings, there is audible thinning out of the soprano's top—the Wolf set was really of interest more for Krause's contribution. This program, however, strikes me as considerably more successful, all in all one of Ameling's most attractive recordings.

I wish I could explain the record's appeal, explain why it captured and has held my attention from the opening bars of Debussy's "C'est l'extase," there's no Impressionist murk here, or any of the other clichés of French art-song performance. Perhaps the very wholesomeness of Ameling's approach has something to do with its appeal. There's something refreshing in the notion that there's nothing inherently neurotic about languorous ecstasy and the assorted other passions and pains of Verlaine. (All these songs are settings of Verlaine poems except the three Chansons de Bilitis, from Pierre Louys.)

Dalton Baldwin's accompaniments are predictably accomplished and supportive, and CBS provides a note by Ned Rorem and complete texts.

K.F.

DELIUS: Appalachia; Sea Drift.
John Shirley-Quirk, baritone; London Symphony Chorus, Royal Philharmonic Orchestra, Richard Hickox, cond. [Chris Hazell, prod.] ARGO ZRG 934, $10.98.

Things are looking up for Delius: first the premiere recording of The Magic Fountain (Arabesque 8121-2L, July 1981), then Eric Fenby's outstanding album (Unicorn-Kanchana DKP 9008/9, February), and now this release of two of the composer's greatest works. One of his gentlest and most touching compositions, Sea Drift is a set of Walt Whitman's famous poem that begins, "Out of the cradle endlessly rocking." Delius, however, does not include those lines, or the final section, but sets only the middle portion dealing with two seagulls, one of which disappears, leaving the other to mourn its mate. Appalachia, a long set of "Variations on an Old Slave Song with Final Chorus," was inspired by Delius' youthful stay in Florida. Of unknown origin, the song bears a passing resemblance to the quartet from Rigoletto! ("Appalachia," as used here, is the early American Indian name for the entire North American continent.)

On one level, Richard Hickox directs beautiful, lovingly shaped performances, sensitive almost to a fault. The music obviously means a great deal to him, and he imparts his feeling to the orchestra and singers. Yet as with Verdi and Arturo Toscanini, Mahler and Bruno Walter, performers of Delius must conjure with the spirit of Sir Thomas Beecham; they must find it timeless always to have that worthy name invoked. The difference is that, had Toscanini and Walter never lived, Verdi and Mahler would still be performed today, but Delius would not exist at all if not for Beecham, whose second version of Appalachia is still available (Odyssey Y 33283). Dully recorded in mono, though it is, enough can be gleaned to appreciate the great character Beecham brought to this music. As a small example, at the start of the 12/8 poco più vivace section shortly after the opening, it's amazing how Beecham makes the orchestra sound like one huge banjo. With Hickox, all we get are harps, violas, bassoons, English horn, etc.

The best English conductors, when performing their native music, know instinctively when to linger and when to get on with it. So it is with Beecham and Appalachia, and with Fenby in his recent collection. Hickox simply lingers; this Appalachia seems to go on forever. It does, in fact, last nearly forty minutes, as compared with Beecham's thirty-six-and-a-half. If there's one thing Delius doesn't need, it's to be made slower.

Hickox is more successful with Sea
Drift. Though he is again more leisurely than Beecham, this piece stands up to such an approach better. In both works, John Shirley-Quirk is an expressive and sensitive soloist if occasionally mannered—the result of trying to be too expressive. I prefer the greater simplicity of Beecham’s Bruce Boyce. (His Sea Drift, unfortunately, is out of print.)

I don’t mean to dwell on the defects of the Hickox readings. This is, after all, the only domestically available stereo version of Appalachia and the only coupling of these works, and they are sensitively done. The orchestra is appropriately the Royal Philharmonic, which knows the Delius style as does no other. The London Symphony Chorus sings ravishingly, which Beecham’s chorus did not. The recording, sponsored by Canon Business Machines (a printed commercial is included) is beautifully atmospheric. It’s just that Beecham gave us Delius with backbone; these versions are a bit spineless.

A muted welcome, then, pending the possible appearance of versions by Fenby.

HANDEL: Concerti grossi, Op. 3 (7); Concerto for Oboe and Strings, in G minor*.


Op. 3: No. 1, in B flat; No. 2, in B flat; No. 3, in G; No. 4, in F; No. 4 (orig.), in F (attrib.); No. 5, in D minor, No. 6, in D.

A group of new recordings of Handel’s Op. 3 Concertos was discussed here last February; this Harnoncourt set sweeps the field. Strongly characterized and vividly played, as one would expect, it has few of the irritating features of rhythmic style and articulation that have marred his recent Bach recordings, and little of the calculated eccentricity of his Water Music. Everything here is sturdy, sharp, and magnificently incisive. Performance problems are thought out anew: The opening of the Third Concerto, whose bare chords other versions elaborate, is here left stark and savage, to splendid effect. In this concerto, too, flute is replaced by oboe; Jürg Schaeftlein plays brilliantly in the first Allegro. There are a couple of examples of underdotting, but the French-overture opening sections remain crisply overdotted. The acoustic is close and excitingly bright, the playing style has more sophistication than that of the Smithsonian Players (Smithsonian N 1023), and more vigor than that of the English Baroque Soloists (Erato STU 71367). Both versions of the Fourth Concerto are included, with the G minor Oboe Concerto as a bonus. Invigorating.

HAYDN: Die Jahreszeiten.

Hanne Edith Mathis (s) Lukas Siegfried Jerusalem (t) Simon Dietrich Fischer-Dieskau (b) Chorus and Academy of St. Martin-in-the-Fields, Neville Marriner, cond. PHILIPS 6769 068, $38.84 (digital recording; three discs, manual sequence). Tape: 7654 068, $38.84 (three cassettes).

COMPARISONS:

Bohm/Vienna Sym. DG 2709 026
Karajan/Berlin Phil. Ang SC 3792
Davis/BBC Sym. Vox QSVBX 5215
Güntherwein/Ludwigsburg Fest.

If this were the only available recording of The Seasons, it would have to do. But shouldn’t we be concerned that even as we become ever so much more sophisticated in our knowledge of Haydn and his music, we are getting and apparently swallowing performances progressively lower in human responsiveness? I’m sure there are people who will tell you what a wonderful thing it is that the continuo complement of this performance includes a fortepiano. I can’t tell you much of anything about the recitatives, though. Near as I can recall, there isn’t anything going on in them.

This is the kind of performance where...
Though perhaps not the performance Hindemith wanted, this is the one to have.
Fantasy, he plunges into the sonata with almost no breathing space—a wonderful bit of effective timing. And throughout, the spontaneity and improvisational freedom—which never extend to anarchy—are invigorating to hear. Sometimes, his treatment of music and instrument recalls that old master Edwin Fischer.

Interestingly, Schiff approaches embellishment much more conservatively in Mozart than in Bach or Scarlatti. In his recent New York concert performance of the Goldberg Variations, he added flourishes and changed registers in repeats, as he does in Scarlatti sonatas (Hungaroton SL PX 11806); but here he adds little more than a low C in K. 333's Rondo (measure 133). It will be interesting to see what he does in such works as K. 332, for which several versions of Mozart's text exist.

All in all, this is a superbly elegant, supple, and warmly musical playing; I eagerly await the rest of the series. London's sound is agreeably resonant yet intimate. H.G.

ROSSINI: Pèches de vieillesse (excerpts).

The sins of My Old Age, those heaps of oddly assorted miniatures Rossini piled up in his later years in Paris, have received so little recorded attention that it's a relief to find this engagingly performed selection duplicating only four numbers from the French Cycnus disc that Nonesuch has had in its catalog for years (H 71089).

Two of the duplicated numbers, the spirited quartets “La Passeggiata” and “I Gondolieri,” are among the large number of Sins that originated as settings of the Metastasio poem “Mi lagnerò tacendo” (“I will complain in silence”), a lament that Philip Gossett tells us in his liner note Rossini set obsessively in those later years, when he began composing again after the dramatic improvement in his health. To many of these settings he subsequently fit new texts, often strikingly different in content, as in the case of these rather jolly quartets, concerning a planned day trip and the splendid life of gondoliers. I'd be surprised if any listener could resist the rollicking swagger of Arnon Guzelimian's playing of the long piano introduction to “La Passeggiata,” which begins Side 2 of the new disc.

Gossett notes that it was with a set of six “Mi lagnerò” settings that Rossini signaled the recovery of his health in 1857, and that set, Musique anodine, is or the Cycnus disc. The new disc contains only one “pure” “Mi lagnerò” setting, the “Aragonesa.” Among the known or guessed “Mi lagnerò” recalculations are two charming, bittersweet, strangely comic beggning songs: “A Sou” (the story of a presumably blind father and son reduced, they claim, to selling the leash of their lamented dog) and “The Florentine Flower Girl.”

The other duplicated numbers are “The Lovers of Seville,” a stunning duet in which the mezzo and tenor shift focus in alternating stanzas from a sort of collective choral function to solo roles as the hesitating maiden and her pressing swain, and “Toast for the New Year,” an unaccompanied octet that in less than three minutes covers just about every imaginable angle on the event.

One number, incidentally, Gossett informs us is a fraud. The familiar meowing “Comic Duet of Two Cats” is a hybrid concoction whose only connection to Rossini is the use of music from Otello. Interestingly, it really does sound out of place here.
 Classified Reviews

A couple of other selections, notably the more serious "Le Sylvain" and "Le Dode des enfants," both solos, sound as if they might be more interesting in better performances. One problem with the performances is that, while these eight singers form pleasing ensembles, only soprano Delcina Stevenson, who sings "La Fioraia fiorentina," appears to have a voice of solo quality. At any rate, the others certainly aren't flattered by the ultraclose recording. The Cycnus performances are somewhat better in this regard, and the Franco-Swiss performers are also markedly more communicative singing in both French and Italian.

Which is not to deny the vitality and personal charm of the Los Angeles performances, or the involving immediacy of Nonesuch's engineering. In addition, both pianists—the group's artistic directors—are first-rate, and Gossett's notes are informative, though they could occasionally be clearer or fuller. (Why, for example, isn't there even a ballpark figure for the number of "Mi lagnerd" settings, of which such a point is made? And since an issue is made of surviving vs. lost versions, why not tell us a bit about the form in which this material in fact survives? Etc.) There are texts and translations, the latter containing some surprising garbles of verbal moods, subjects and objects, and the like.

But enough nit-picking. I think you're going to enjoy this one.

K.F.

Salieri: Sinfonia "Il Giorno onomastico"; Variations on "La Folia di Spagna"; Sinfonia veneziana.


The music of Antonio Salieri has been enjoying a minirevival these days, in large part due to the success of Peter Shaffer's play Amadeus (though the late Thomas Schippers programmed a Salieri work with Haydn's music). It adds a touch of Cimarosa for good measure, a couple of other selections, notably the more serious "Le Sylvain" and "Le Dode des enfants." Both Mozartian and Rossinian in spirit, it adds a touch of Cimarosa for good measure. The four-movement Sinfonia "Il Giorno onomastico" ("The Name Day") is reminiscent of Cherubini and the Mozart of the divertimentos but without either composer's melodic invention. Salieri here savors running triplet string passages, writes well for woodwinds, and begins the finale similarly to that of Mozart's little Divertimento, K. 136. The pauses near the end bring to mind many such moments in Haydn's music.

That's the trouble with Salieri—his music, pleasant as it is, so often reminds the listener of someone else. While he may have written his first, others did the same thing better and more distinctively. Mozart's divertimentos, intended as background music for dinner and conversation, only later came to be recognized as great music to be listened to attentively. Salieri's symphonies, on the other hand, while meant to be attended to, make ideal background music. There is nothing in them to make an audience think or to upset it in any way. Surely, this accounted for his great popularity in his day. In that respect, audiences haven't changed much over the centuries.

The Variations on "La Folia di Spagna" (a theme employed by Corelli, Liszt, Rachmaninoff, and others) is more serious stuff, an introspective, somewhat overlong work in which the theme is never far away—as opposed, say, to the Brahms Haydn Variations, where, once heard, the theme doesn't really reappear until the very end.

Zoltan Pesko, new to me, directs the London Symphony with a heavy hand (and some curious bumping and thumping noises suggest that he may be heavy-footed as well). The readings, while adequate, I suppose, lack grace and rhythmic vitality and stop just short of imprecision. They certainly fail to penetrate to the elusive heart of this music. If Salieri is to make his mark today, he has to be played more stylishly and effervescently than this.

The works are performed in the editions ("revision," we are told) of Pietro Spada, who supplies informative annotations.

J.C.

Schubert: Latin Masses (6).

Eva Caspó (1,2,4), Kari Lóvaas (5,6), and Yasko Nagata (1), sopranos; Cornelia Berger (1,2), Sylvia Anderson (4,6), and Hille Helling (5), altus; Peter Maus (1,2), Karl-Ernst Merker (1,6), Alejandro Ramirez (4), and Richard Greyer (5,6), tenors; Gerhard Faustitch (1,2,4,5) and Bruce Abel (6), basses; Christian Schlicke, organ; Spandauer Kantorei, Hamburg Cappella Vocale, Berlin Bach Collegium, Martin Behrman, cond. [Heinz Jansen, prod.] Vox Cum Laude VCL 9016X, $29.98 (four discs, manual sequence). Tape: VCL 9016X, $29.98 (three cassettes).

The orchestrally accompanied Mass was, together with opera, the focal point of music in the eighteenth century and the first quarter of the nineteenth. All the Viennese masters composed such Masses, but—along with Beethoven's Missa solemnis, an acknowledged "concert" Mass—they came to be considered "theatrical" and "unliturgic." As the nineteenth century advanced, these Masses were used less and less in divine services—except in Central Europe, especially Bavaria and the Austrian lands, where they were dearly loved, and defended by the bishops against both emperors and popes.

Schubert's six Latin Masses, with their glorious melodies, were found particularly objectionable; liturgical purists rejected their warm and beguiling tunes, their glowing deep-seated emotion and passion, and their folksonglike directness, all of which go straight to the heart. The penultimate Grove Dictionary (1954) still dismissed the earlier Masses as "inferior" music, though it acknowledged some merits in the last two. (I don't know whether the New Grove is more enlightened; retired musicologists cannot afford reference works that sell in four figures. [Not that unretired editors are that much better off, but I can report that NG distinguishes even the first two Masses from "choral music of secondary value."—Ed.]) Yet musicians were never put off. Bruckner and Brahms in particular admired these works, and it was Brahms who introduced them to the public.

Among the most serious obstacles to liturgical use was Schubert's curious, consistent avoidance of the words "Et unam, sanctam, catholicam et apostolicam Ecclesiam." This consistency, which couldn't have been accidental, to this day remains puzzling; these Masses were not commissioned, but composed from an inner urge, evoking all Schubert's musical ardor.

Though this isn't the place to discuss his private theological views (he was a professing Catholic, of course), we must say a few words about the reasons for the misjudgment of these lovely works, for they remain generally misunderstood, their beauty tainted with unjustified apprehensions.

The stylistic and conceptual crux of the classical instrumental Mass rests in the use of counterpoint. The Western church was the original domain of polyphony, the great "invention" that differentiated Western music from any other. The medieval church wanted for its rites a kind of music that does not impinge on the sacred words, but only accompanies and supports them. This meant pure, objective construction, learned counterpoint that does not exert affective/expressive influence on the worshipers—a concept almost impossible for
us to relate to, which explains the difficulty of restoring such medieval music even for the concert hall. Yet this counterpoint, not an end in itself, expressed the universality and collectivity of the church and of its liturgical celebration. Nor did it altogether disappear in subsequent centuries, remaining alive in Bach (the “Gothic Bach”) and others.

The Enlightenment changed this concept radically; henceforth this churchly polyphony was seen as abstract, “mathematical,” dogmatic, and full of scholastic sophistry. Indeed, that counterpoint no longer corresponded to the life style of Western humanity. To be sure, every composer learned it as a basic discipline to master the art of part-writing; nearly all, certainly in the classic period, studied Fux’s great guidebook Gradus ad Parnassum (1725). But the individualistic melodists—and Schubert was the greatest—no longer understood and felt the organic life of polyphony, its causality, and its manifestation of a collective spirit; they just set “point against point.” Mozart, Haydn, and some of their contemporaries still succeeded gloriously in blending polyphony with their largely homophonic style; not so Schubert and his confrères. The traditional fugues on “Cum Sancto Spiritu” or “Osanna” they merely composed à la Fux; most, however correct, are uninteresting, schematic, and indistinguishable from each other.

Yet it is a grievous mistake, often repeated, to consider Schubert deficient in counterpoint, and to suppose that he himself recognized this deficiency by seeking instruction in the last year of his short life from the great theorist-teacher Simon Sechter (later Bruckner’s teacher) but died before he could commence his studies. No, Schubert knew conventional postbaroque counterpoint well; what he hoped to learn from Sechter was the missing spirit of counterpoint. Yet by that time he had actually found this spirit, though in a form altogether different from scholastic polyphony, a highly expressive, free, and purely melodic counterpart.

The first four of these Masses, all completed by age nineteen, provide the most astonishing examples of Schubert’s incredible precocity; those in B flat and G are comparable only to similar works by the young Mozart. In all four, the vocal writing is sheer perfection, the orchestral accompaniment brilliant yet always finely dovetailed with the voices. And there is melody, bewitching melody everywhere, here simple as folksong, there vaulted to overwhelming heights. Some movements are syllabic choral songs, others, like the solo quartet for two sopranos and two tenors in the Benedictus of the First Mass, contemplative outpourings of pure musicality.

But in the last two Masses, we leave the youthful master to ascend to the summit. No one who does not know them can

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**AUGUST 1982**  61
In Schubert's last two Masses, we leave the youthful master to ascend to the summit.
It's good to be reminded that the Czechs, pioneers in the development and mastery of horn playing, are still producing distinguished performers on that notoriously most difficult of orchestral instruments. Witness Zdeňek Tyšlar (b. 1945), who was accepted into the Czech Philharmonic when only eighteen. As a member of the Collegium Musicum Pragense, he has participated in numerous recordings of works by old Czech masters, but in this bid for a wider audience, he has chosen two of the most demanding test pieces of the modern horn repertory, Richard Strauss's markedly contrasting concertos. The First, written when Strauss was forty, is expansively eloquent in the Second; but the robustly recorded orchestra, under Jiří Bělohlávek, is often overenthusiastic—even coarse-toned and heavy-handed. And Tyšlar himself, talented though still maturing, cannot yet challenge the more magisterial and subtler artistry of Peter Damm, whose 1976 coupling of these works in the late Rudolf Kempe's incompa

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What is more, the recorded acoustic is natural and beautiful, too, it is "authentic." The recording was made in the Holywell Music Room, Oxford, of 1748, the first public room in England designated for chamber music. A most successful experiment, now, please, a disc with original instruments in place of copies.

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...
After sampling most of the rest of this set without very happy results, I got a jolt near the end of the first of two sides devoted to operetta. Listening casually, I needed a few moments to identify the Fledermaus Csardas, but only a moment or two more to guess why it had grabbed (and subsequently left) me. Rose, was she dachen von mir (with Helmut Krebs, tenor; Karl Donch, baritone); Csardas. Eine Nacht in Venedig: Annina! . . . Rondellia, pelegrina (with Kunze); Was mir der Zufall gab (with Kunze). Der Zigeunerbaron: Wer uns getraut (with Gedda). Wiener Blut: Es hat dem Grauen nicht genügt; Das eine kann ich nicht verzeih'n . . . Ich war ein echtes Wiener Blut (with Gedda). R. Strauss: Der Rosenkavalier: Presentation of the Rose (with Seefried). Songs: Hat gesagt, bleibt's nicht dabei, Op. 36, No. 3; Schlechts Wetter, Op. 69, No. 5. VERDI: La Traviata: Addio del passato. WOLF: Wiegenlied (im Sommer); Mausfalleinspruchslein.

It's not just that the singing is so rigorously controlled, or that the control seems always to aim for an emotional effect rather than the human reality that would generate a genuine response; after all, plenty of singers have worked in just as contrived a fashion of vocal and interpretive masquerade to prove she's a Hungarian countess, which guess why it had grabbed (and subsequently gone) me. Even if Rosalinde's attempt to prove she's a Hungarian countess, which we all know she isn't, Schwarzkopf's system of vocal and interpretive masquerade for once rings true.

How to describe that effect? The best I can suggest is what we might call First Lady's vanity. Imagine Rosalinde's attempt at last twenty years—except Betty Ford, I think. It's the attitudinal veneer of charm, graciousness, and poise, assumed for the purpose—or at any rate with the result—of walling us off from whatever real and possibly interesting human activity is going on underneath. Even in tragic material, Schwarzkopf manages to keep her vocal FLS in place, and one value of this collection is to demonstrate that it has been in place at least as far back as the Schubert songs ("Seligkeit" and "Die Forelle") and Mozart arias (the R pastore and Entführung numbers) recorded in the fall of 1946.

The major difference between the period represented here and the later work that dominates Schwarzkopf's otherwise current discography is that the voice of course worked a good deal more freely. The top never exactly soared, as we can hear in the labored rising phrases of "Addio del passa- to," where she tries to pull the stops out, and yet there was quite a usable top, as long as she kept her demands within limits—and few singers have ever been better at that.

The album is sensibly planned—the first three discs following Legge's suggestion, according to an album-box credit. There is first a disc of Mozart arias, followed by a disc of other operatic material—most of this pre-LP. (The Hänself excerpts are 78s conducted by Krips in 1947, not from the later complete recording conducted by Karajan.) The third disc is piano-accompanied material, mostly Lieder and mostly from 1954. The fourth disc contains excerpts from the 1953–55 recordings of Strauss and Lehár operettas.

There are some oddities in the selection. Five Puccini arias? And only two Wolf songs, and pretty lightweight stuff at that? (This is fine by me. Hers is the kind of Wolf singing that drives me up the wall.) Still, if this is what Legge suggested—The faithful can console themselves with the opportunity to hear Schwarzkopf as both Anna and Elvira in Don Giovanni, and as both the Countess and Susanna in Fi- garo, and as-gasp—Louise. All sounds the same to me.

Interestingly, the piece you'd most expect to hear treated in this cutey way, "O mio babbino caro," gets a rather different treatment—sort of slow and dreamy, or maybe make-believe-dreamy. This is a useful reminder that, artificial as Schwarz- kopf's artistry may have been, it wasn't simply a matter of applying formulas. She worked mighty hard achieving these results, for better or worse. K.F.

THE TANGO PROJECT.


The prosaic name "Tango Project" unfolds, like plain brown wrapping, a rainbow cabinet of winged poetic essences. The prospect of thirteen dances in identical meter—and so marked a meter as the tango's—all played in sequence may seem an invitation to hypnotic tedium, but this album tells a different story. Drop a needle anywhere, and you will hear, as distinct, strange, various, and circcean as the ocean in a shell, the gallantry, melancholy, and panache of a form as protean and infinitely renewable as the sonnet, laurel-crowned.

From low-life origins at the close of the nineteenth century in the brothels of Buenos Aires and other ports along the Río de la Plata, the tango soon swept the smart set in Paris and never looked back, except to return home in triumph. The Project's selections, mostly Argentine originals from the classic age of the Twenties and Thirties, with a few palm-court European copies thrown in for spice, are sounded in arrangements "after Julio de Caro and other master tangueros" by the Project pianist, Michael Sah. His dreamy playfulness, lofty sorrow, murmured confidences, and proud accents of command are all equally authentic, equally precise. From the accordion (instead of the historic bandoneón, as the liner notes candidly point out), William Schimmel draws forth tart flourishes and plush bands of swaying harmonies, against which Stan Kurtis' violin sings its glinting, sighing cantilenas in vinous timbres. Richard Henrickson, superb on second violin, and Russell Savakus, equally so on bass, join the core trio on eight cuts, weaving seamlessly into the shifting moods. On the entire enchanting disc, there is not one false note of counterfeit emotion.

In Domingo's recording, conversely, everything is straight out of a can. Recorded in the wee hours after Teatro Colón perfor- mances of Otello, the ten numbers find Placido Domingo, tenor; orchestra, Rob- erto Pansera, cond. Deutsche Grammophon 2536 416, $10.98. Tape: 3336 416. $10.98 (cas- sette).

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Divertimentos

Call them serenades, "occasional" music, Tafelmusik, or what you will—light tonal divertissements always have stimulated the imagination of even the most serious composers and titillated the funny bones of even the most sophisticated listeners. But such sonic manifestations of *Homo Ludens* (Man at Play) probably flowered most richly in eighteenth-century Austria. And although various kinds of divertimentos called for variously constituted ensembles, many of this repertory's aficionados relish best the examples for wind instruments (alone or in mixed consorts) that are especially suitable for alfresco performance. The modest size, appetizing variety of timbre, and immediate appeal of the genre make it ideally suited for recording and casual home listening—thus giving everyone the once exclusive privilege of royal and wealthy patrons.

Since Mozart's incomparable divertimentos and serenades are becoming generally well-known, it's refreshing to meet, via current musicscassettes, completely or relatively unfamiliar examples by composers Mozart himself admired. Brand-new to me, and I'm sure most Americans, is Ignaz Holzbauer (1711–1783), a foremost composer in Mannheim when Mozart visited that innovative center in 1777. The first recordings of the older master's three *Nocturni*, for a sextet of winds and strings, and a Quintet in G, for winds, strings, and concertante harpsichord, reveal a real, often very witty personality, whose irresistibly engaging music-making is given spickily piquant life by Winterthur Baroque players in a vivid Swiss recording ( Spectrum SC 208, $4.50, plus $1.50 shipping, from Spectrum, Harriman, N. Y. 10926).

Under the same bargain-price label are the six Haydn *Feldparthien* (outdoor suites) H. II: 41–46, usually known only for the St. Antoni Choral tune that Haydn—or maybe his pupil Pleyel—borrowed from the public domain for the second movement of H. II: 46, and Brahms later reused. This set, too, receives a delectable, even poetic performance in a vivid if lighter-weight Swiss recording by Zurich Tonhalle wind players, including a contrabassoonist ( Spectrum SC 249). And by happy happenstance, the first three *Feldparthien* also appear (together with four other Haydn wind divertimentos) in a 1974 Seon recording by Dieter Klocker's Consortium Classicum ( Arabesque 9083-2, $15.96).

But since this is Vol. 1 of an American series for which I had the privilege of writing the annotations, I'm restricted here to a factual mention—plus a reminder that this should not be confused with the same group's four-disc Telefunken series (unavailable here on tape in any case).

Mozart's onetime pupil Hummel is represented by the same Consortium Classicum's exhumations of two serenades for winds, guitar, and clavier—fascinating exemplars of that era's Evans of playing around with operatic hit tunes. You will recognize the Mozart quotes easily enough but may well be baffled by those from Rossini, Spontini, Cherubini, and Lindpaintner (who?). (Musical Heritage Society MHC 6195, $7.75, $4.95 to members, plus $1.60 shipping, from MHS, 14 Park Rd., Tinton Falls, N. J. 07724). Then, from still earlier master entertainers, we have further delights featuring modern approaches in technology and (less suitably) style. For Teleman's 300th birthday, Musical Offering, a West-Coast ensemble of winds, strings, and harpsichord, presents three characteristically trio sonatas and a quartet in gleamingly recorded performances that are great fun (None such digital/ferric D1 79022, $11.98). And Aesthetic Audio (P. O. Box 478, Carlin, Nev. 89822) offers a real-time BASF chrome cassette edition of a 1978 British Merlin direct-to-stereo recording of four deliciously variegated Vivaldi Flute Concertos. R. 436, 438, 440, and 441 (originally for recorder), all radiantly played by Christopher Taylor with the London Philomusica under Carl Pini (MFC 781, now $12.98, plus $2.00 shipping).

Even that putative late-nineteenth-century academic Saint-Saëns had playful moments in his *Carnival of the Animals*; for its full humor and charm, one must forget its usual symphonic inflations, with or without Ogdon Nash's verses, and go back to the incomparably more divertising original Mardi-Gras scoring for only eleven instruments. That's electrifyingly demonstrated in the belated American release of the superbly transparent 1978 Pathé Marconi chamber version by pianists Michel Béroff and Jean-Philippe Collard with the Trio à Cordes Français and other French instrumentalists ( Angel 4XS 37874, $9.98). And for good measure, this includes Saint-Saëns's no less bright and jaunty Op. 65 Septet, for piano (Collard), trumpet (Maurice André), and strings.

Big symphonic showpieces, especially those in HiTech panoply, inevitably continue to dominate musicscassette releases. Most impressive, at least technically, is Mobile Fidelity's real-time chrome taping (MFSL C 510, price at dealer's option) of the Solti/London Philharmonic account of Holst's *Planets*; yet as in my earlier reviews (HF, December 1979, November 1981) of the original London and remastered Mobile Fidelity disc versions, I still find only scant Holstian empathy here.

There's better sonic/artistic equilibriatm in Carlos Kleiber's powerfully dramatic Brahms Fourth Symphony with the Vienna Philharmonic (DG digital/chrome 3302 003, $12.98) and the Perlman/Previn/Pittsburgh revivals of those favorites of fiddlers and cultists, the Conus and Korngold violin concertos (Angel digital/ferric 4XS 37770, $9.98).

And of course "serious" music doesn't have to be solemn. Some of the sheer fun of the divertimento genre enlivens the latest Gershwin, Strauss family, and Offenbach tapings. Eduardo Mata and the Dallas Symphony offer the most brilliant Gershwin *Cuban Overture* and *Porgy and Bess* Suite (arr. Bennett) yet, together with an *American in Paris* that lacks only completely spontaneous jauntiness (RCA digital/chrome box ATX 1-4149, $15.98). Willi Boskovsky and his Vienna Strauss Orchestra are as idiomatic as ever, if just a bit routine, in a program of four unacknowledged waltzes, five polkas (including Johann II's *Im Sturmschritt*, Op. 348, and Josef's *Feuerfest*), and the Banditen Galop (Angel digital/ferric 4XS 37814, $9.98). And whatever Gallic insouciance Karajan and the Berlin Philharmonic may miss in their Offenbach *Barcarolle* and overture program, topped by the best reading yet of the *Vert-Vert* (Kakadu) Overture, there is no lack of high-voltage executant and sonor bravura (DG digital/chrome 3302 006, $12.98).
The Indies Are Coming!

While their corporate counterparts play it safe, today's independent labels carry forth a time-honored tradition of exploring the unusual.

by Sam Sutherland

IMAGINE A TYPICAL RECORD promotion executive at a major label, grappling with the high stakes and even higher failure rate of mass-appeal pop, rock, and soul in the current climate of tight consumer dollars. Envision his disappointment—and probable career anxiety—at the failure of the company's latest attempt at commercial alchemy. A fat six-figure promotion outlay, along with all the polish a name producer could apply to the tracks, have yielded a finished product that sounds like Son Of Styx Meets Foreigner And Toto In Kansas. Yet the album failed to trigger the hoped-for Platinum or Gold breakthrough.

Now picture that long-suffering promo warrior receiving the news that this month, instead of the usual array of recycled heavy metal, reheated soul, and reconstituted pop romance, the push projects don't sound remotely like anything currently on the Hot 100. There's an album of Vivaldi and Couperin pieces arranged for the five-string banjo, an anthology of Cajun fiddle music recorded in the late '40s, high-tech stereo waxings of authentic clog dancing, an ambitious jazz suite derived from court orchestral traditions in Bali and Java, and Duke Ellington played on dobro and pedal steel guitars. Topping off the list is a collection of parodies that features Lou Reed and Big Mama Thornberg. Indeed, a number of today's big leaguers started out in the '60s with a regional black pop style that became the template for crossover soul.

The '70s generation of small independents—those that were not going unnoticed. The more specialized independents—that those record and market performers with minimal hopes for mass exposure or six-figure sales—are in most cases sustaining their market while big-time marketers continue to fret over lost buyers. Despite the majors' internal belt tightening and tougher credit policies that compel dealers to buy fewer titles in smaller quantities, many Indies have sidestepped cutbacks and layoffs and, in some instances, are even expanding their sales bases.

"Our sales as a distributor have remained remarkably constant during the past few years. While the companies' musical differences are obvious, all are part of a sector in the recording trade too often overlooked in discussions of popular music. (Such is the genre on which we are focusing here, and all of the labels under consideration have been founded within the past two decades.) And while none of these records is likely to cash in as the Next Big Thing, together they provide heartening evidence that there really are musical alternatives to the least common denominators that pace the big leagues.

Among record buyers, those alternatives are not going unnoticed. The more specialized independents—that those record and market performers with minimal hopes for mass exposure or six-figure sales—are in most cases sustaining their market while big-time marketers continue to fret over lost buyers. Despite the majors' internal belt tightening and tougher credit policies that compel dealers to buy fewer titles in smaller quantities, many Indies have sidestepped cutbacks and layoffs and, in some instances, are even expanding their sales bases.

"Our sales as a distributor have remained remarkably constant during the past year," says Rounder Records' Bill Nowlin. "We haven't seen a dip in sales or had to lay anybody off, either." Rounder qualifies as something of a giant among Indies, as well as a closer approximation of the diversified, conglomerate-type majors. Based in Somerville, Mass., it was founded in the late '60s as a communal enterprise for Nowlin (now sales manager) and partners Marian Leighton (now president) and Ken Irwin, who oversees a&r. From its original base of folk, bluegrass, and blues, Rounder grew during the '70s to become a regional distributor of scores of even smaller labels, while expanding its own musical base.

Among the more recently founded Indies are such feisty English labels as Stiff, Virgin, Rough Trade, and Editions EG, as well as younger U.S. counterparts like Slash, 415, Posh Boy, and ZE. All have been lauded as a new alternative to the increasingly safe output of the majors, yet these companies actually continue a tradition that suggests that Independents are one of the industry's fixed constants. Since the years before World War II, the Indies have, to paraphrase Star Trek's Captain Kirk, boldly gone where no major labels have gone: Country, rock, and R&B may now be staple commodities for the big branch-distributed companies, but all three were first nurtured by tiny local and regional labels. Indeed, a number of today's big leaguers first carved their niches as small specialized independents. Atlantic Records began in the late '40s as a rhythm & blues and jazz line. Elektra made its reputation in the '50s with folk and ethnic music, and Motown started out in the '60s with a regional black pop style that became the template for crossover soul.

The '70s generation of small Indies cohered around labels like Rounder, Flying Fish, Arhoolie, Alligator, and Adelphi. Like their predecessors from the '30s, '40s, and '50s, each was shaped by an entrepreneurial vision rather than corporate plan-
ning, with genuine musical enthusiasm taking an upper hand to the profit motive. But against the booming mainstream trade of the mid-'70s, the indies' modest sales, absence of celebrities, and lack of business expertise invited scorn from some dealers and distributors, who found it easier to confine themselves to the majors’ output. Amplifying their conception of independent as amateur were the many brief and checkered careers of hobbyists who bravely launched their own labels around hopeless-ly obscure or mediocre music.

Now, however, most dealers and distributors can’t afford to dismiss the market potential for independent product. There’s also ample evidence that the small labels have developed a sound business sense. (The recession has weeded out those that have not.) They have learned how to supply dealers with the right merchandising tools, what quantities of product to expect on a given order, and how to reach consumers to generate sufficient demand.

“I like to think we were pioneers in applying the smart thinking of the major labels,” says Bruce Iglauer, who founded Alligator Records in 1971 while still working for another Chicago-based independent, Bob Koester’s Delmark Records. Delmark specialized in avant-garde regional jazz and contemporary blues, but Iglauer wanted to concentrate on the latter, despite the prevailing belief that the electric blues revival of the late '60s had already been absorbed into the fabric of rock.

Time proved Iglauer wiser than majority opinion, and his tiny catalog has grown gradually but steadily. The production values of his LPs have improved markedly since his first self-produced sides were recorded on comparatively primitive equipment in after-hours Chicago blues clubs. Now, Alligator’s inhouse recordings are cut in modern multitrack studios, as are the outside masters Iglauer has begun purchasing and releasing, concurrent with an expansion into reggae. “Some of the small label distributors have really grown up, as well as the labels,” says Iglauer, citing Rounder, St. Louis’ House Distributors, and California Record Distributors as examples. “And the larger independent distributors who carry a Motown or a Chrysalis have learned that they can make solid, if small, dollars on more specialized labels like us.”

Higher technical quality—particularly relative to mass-market discs—is part of the reason for the indies’ growing visibility. Even as the audiophile business was moving beyond novelty repertoire geared more to knob-twisters than music lovers, many independents had already recognized that their much smaller production runs gave them an advantage in monitoring pressing quality. Without shareholders to answer to, it became easier to increase their cost per record for better grades of vinyl, plastic inner sleeves, and other high-tech improvements.

Countless specialty jazz labels have used higher master tape recording speeds and virgin or imported-vinyl pressings. The tiny Windham Hill Records of Palo Alto, Calif., whose unlikely sleeper hit by pianist George Winston has yielded dramatic sales growth over the past eighteen months, has experimented with separate audiophile versions of recent albums, including both half-speed mastered and digitally recorded titles. Founder Will Ackerman himself is a archetype in that he is a musician who started his company more on a whim than to make money—confides that he only learned about half-speed techniques after discovering that his cutting engineer, Mobile Fidelity’s Stan Ricker, had already used that more exacting approach on several Windham Hill masters because he wanted to preserve the impressive clarity of the recordings.

The other side of the independents’ story is their involvement in musical scholarship. Many have functioned as curators of ethnic and traditional music as mass market titans have been busy—until recently, that is—deleting older titles. Apart from new recordings of traditional and ethnic artists, the new indies have actively sought old masters and created impressive anthologies within even the most esoteric fields. Los Angeles’ Rhino Records, which began as a screwball comedy label spun off from Rhino’s Westwood record store, has been purchasing '60s rock album masters and releasing its own loving tributes to early psychedelia, surf music, and proto-punk.

San Francisco’s Solid Smoke has excelled at anthologies spotlighting forgotten early rock and &b. Last year it issued a James Brown hits package with carefully remastered sonics and a garish jacket that echoed King Records’ gaudy original sleeves for Brown’s ‘60s LPs. That set prompted PolyGram, which had leased Solid Smoke the masters, to issue its own
Directory of Independents

A comprehensive listing of independent labels even in a single genre could easily swallow more space than the preceding overview and the following list combined. As such, this directory is to be interpreted only as a representative sampling. Among the companies excluded are classical indies; labels concentrating on foreign language ethnic repertoire; older jazz independents, since that genre has long been an independent domain; and "vanity" labels confined to the output of a single performer/entrepreneur. Readers should also be alerted to frequent shifts in address for the smaller firms.

Adelphi Records, Box 288, Silver Spring, Md. 20907. Folk, blues and, more recently, acoustic jazz.

Alligator Records, Box 60234, Chicago, Ill. 60680. Contemporary blues and reggae.

Arhoolie Productions, 10341 San Pablo Ave., El Cerrito, Calif. 94530. Contemporary and historical blues, folk and ethnic music including Tex-Mex, Cajun, and country. Also distributes Blues Classics, Folksy, and Old Timey labels.

Artists House, Inc., 40 W. 37th St., New York, N.Y. 10018. Acoustic and avant-garde jazz. Distributed through MCA last year, but now returned to the independent ranks.


Bee Hive Jazz Records, 1130 Colfax St., Evanston, Ill. 60201. Jazz.

Biograph Records, P.O. Box 109, Canaan, N.Y. 12021. Older indie specializing in historical reissues from an array of genres. Subsidiary labels include Center, Dawn, Melodica, and Waterfall.

Blind Pig Records, 208 S. First St., Ann Arbor, Mich. 48103. Blues and folk line, distributed by Flying Fish.

Bomp Records, 2702 San Fernando Rd., Los Angeles, Calif. 90065. Regional rock and new wave, with ties to Sire and PolyGram on specific projects.


Clean Cuts, Inc., Box 16264, Baltimore, Md. 21210. Eclectic acoustic jazz label initially partnered with Adelphi and now on its own. Stresses audiophile-quality pressings.

Concord Jazz, Inc., P.O. Box 845, Concord, Calif. 94522. Mainstream acoustic jazz.


Delmark Records, 4243 N. Lincoln, Chicago, Ill. 60618. Jazz and blues label, tied to an expanded retail store operation.

Flying Fish Records, 104 W. Schubert, Chicago, Ill. 60614. Folk and blues label since expanded into folk/jazz and r&b. Also distributes Blind Pig, Greenhays, and Kaleidoscope.

Gramavision, Inc., 260 West Broadway, New York, N.Y. 10013. Soundtracks, avant-garde jazz, sacred music, new music, pop/rock. Also moving into distribution of other lines, including Living Music.


India Navigation Co., 60 Hudson St., Rm. 205, New York, N.Y. 10013. Jazz.

Jazz Composers Orchestra Association, Inc. (JCOA)/New Music Distribution Service (NMDS), 500 Broadway, New York, N.Y. 10012. Founded as an artists' collective through eclectic recording projects initially sold through direct mail, JCOA has become perhaps more vital in recent years as distributor for other small independents in new music, avant-garde jazz, and adjacent genres.

Kicking Muir Records, P.O. Box 158, Alderpoint, Calif. 95411. Instrumental folk, with subsidiary labels including Sierra Wave, Sonet USA, and Transatlantic USA. Also distributes Larrvin Folkways.

Mountain Railroad Records, 3602 Atwood Ave., Madison, Wis. 53714. Folk.


Philo Records, The Barn, North Ferribsu, Vt. 05473. Folk-based label with recent forays into pop folk and fusion.

Posh Boy Records & Tapes, P.O. Box 38861, Los Angeles, Calif. 90038. Regional new wave and rock.

Ralph Records, 444 Grove St., San Francisco, Calif. 94102. Self-described as "a division of The Cryptic Corp.," which gives a clue to its offshore avant-rock, much of which has anticipated electronic and synthesizer rock from abroad.

Rhino Records, 11609 W. Pico Blvd., Los Angeles, Calif. 90064. Comedy and regional rock; new wave, novelty rock, and rock reissues.


Rough Trade, Inc., 1042 Murray St., Berkeley, Calif. 94710. New Wave and experimental rock line, spun off from British parent. Also distributes other British imports on Crass, Factory, Smash Trade, etc.

Rounder Records, 186 Willow Ave., Somerville, Mass. 02144. Folk and blues base since expanded to include chamber jazz, rock & roll, and folk/rock, with regional distribution of other labels extending catalog's reach into avant-garde jazz and historical rock. Represents approximately 3,000 different LPs on labels including But-Black, Esca, Fiddler, Red, Solid Smoke, Soul Note, String, Tara, and Topic.

Shanachie Records, Dalebrook Park, Ho-Ho-Kus, N.J. 07423. Founded to specialize in British Isles folk, but since successfully moving into reggae. Own labels include Hervin, Morning Star, and Rockers; distributes Boot, Dreamstreet, Flyright, Gael-Linn, Trojan, Topic, Tara, and other lines.

Sierra Records, P.O. Box 5853, Pasadena, Calif. 91107. Folk and country rock label, which also offered some L.A. comedy sets while still doing business as Sierra-Briar. Recently reactivated after a long hiatus.

Sugar Hill Records, P.O. Box 4040, Duke Station, Durham, N.C. 27706. Not to be confused with the New Jersey-based dance/r&B label, this southern indie specializes in bluegrass and country instrumental projects.

Waterhouse Records, 100 N. Seventh St., Suite 415, Minneapolis, Minn. 55403. Midwest indie covering folk, blues, rock, and jazz.

Windham Hill Records, P.O. Box 9388, Stanford, Calif. 94305. Dealers, especially in the West, often stock under label's name, owing to problems in classifying its folk, jazz, and classically influenced instrumental works. Also operates a reissue line, Lost Lake Arts, and has distributed at least one artist-financed outside LP.
Brown hits anthology. Theirs was inferior in every respect, from sound quality and song selection to cover design.

More typical is Arhoolie, a Bay Area operation run by founder Chris Strachwitz that suggests a mini-Smithsonian of regional and ethnic music. Strachwitz, an Austrian who fell in love with American folk mores after moving to the States as a youth, launched the label with his own field recordings of surviving country blues musicians. He has since gone on to Tex-Mex, Cajun, and even Yiddish-American music, and Arhoolie has grown to become a distributor of subsidiary lines like Folklyric and Old Timey, whose anthologies include early country & western and blues.

Though the musical fare of the new indies is practically limitless, all share the understanding that survival rests with a scale of economy (and operation) specific to their areas of specialization. In that sense, they could be harbingers of the recording industry’s future. With the number of Platinum album certifications declining during the past two years and rock’s dominance being eroded by the increased sales of country, black music, and other genres, the same narrow-market principles practiced by parts of the cable television industries loom as increasingly likely in music.

One of the newer entrepreneurs, thirty-year-old Jonathan Rose of Granavision, Inc., is quick to agree. His own adventurous three-year-old company has expanded from eclectic soundtracks into sacred music, new music, avant-garde jazz, and, most recently, pop/reggae. Each is marketed separately. "Narrowcasting is so efficient," says Rose. "One thing about any narrow musical genre is that you can easily find its market: There are only a certain number of writers who will write about it, only a few radio stations—if any—that will play it, and only a certain group of dealers who will sell it well. So there’s always an appropriate circle to be completed."

Alligator’s Iglauer, Windham Hill’s Ackerman, the founding triumvirate at Rounder, and the legion of brethren at other labels purveying everything from electronic music to ethnic, folk, comedy, and reggae rock, would all agree with Rose. For it is that “narrowcast” philosophy that has enabled them to turn a profit with far fewer sales than the typical major label project.

The break-even point for a new rock or pop album is conservatively estimated at 100,000 units. (One 1979 estimate was closer to 150,000.) But the small-fry companies say they can manufacture and market their well-recorded, well-packaged albums and turn a profit after selling only a few thousand discs. And as the majors find their available dollars for new artists shrinking, and their ability to sustain recognized constituencies.

The majors themselves haven’t entirely missed the wisdom of this “small is beautiful” philosophy. Warner Bros. has made ECM, an entrepreneurial jazz line, a prestigious complement to its jazz division. Rock indies are also being taken more seriously, as witnessed by big-league ties for Slash (with Warner) and 415 (with CBS), both coming in the wake of A&M’s success with Miles Copeland’s I.R.S. Meanwhile, numerous mass marketers are following previously untouched areas like exercise and gospel LPs into new types of retail stores, a mission that ironically makes them Johnnies-come-lately compared to their smaller cousins. Windham Hill started out by distributing its albums to health food and alternative book stores, simply because it was having problems securing satisfactory national distribution.

There’s even evidence that some indies are sitting on respectable growth areas. Chamber folk/jazz has reaped Windham Hill whopping monthly sales increases of as much as 600% during the first half of ‘82. A folk revival could spell paydirt for Rounder and Flying Fish and a soul revival would enrich Solid Smoke.

Less obviously, the conservative financial orientation of these maverick companies offers a timely lesson to the majors. Alligator’s Iglauer speaks for many of his peers when he asserts his accounting books would be the envy of the mainstream labels. Even in the wake of an admittedly disappointing ‘81, due to what he now feels was too rapid expansion, he states, “We’re always in the black, so we don’t have to count on our next release to make our money. And because we’ve chosen to market conservatively and stress catalog sales, we’re still selling records that broke even eight or nine years ago, with our only returns being defective.”

The horizon isn’t without threats—indies evince anxiety over their distributors’ long-range survival, particularly in the wake of current retail bankruptcies. But these labels are clearly offering better music, better packaging, and better business sense than they did a decade ago. For the music enthusiast who isn’t satisfied by the knee-jerk confections of the contemporary mainstream, these are gourmet trade-markets worth looking for.
Eric Clapton: Time Pieces/The Best of Eric Clapton
Various producers
RSO RX 1-3099

When Eric Clapton and Duane Allman's twin guitars ring off that familiar flurry of crisp, cascading notes on "Layla" at the end of this disc's first side, it's like being jolted awake by a sudden clap of thunder. Following four of Clapton's sleepy-time tunes—with their loping bass and drums, simple (lazy, perhaps?) guitar lines, and mumbling Clapton vocals—"Derek and the Dominos'" early '70s classic jumps out of the speakers in wailing splendor.

Which is not to denigrate the laidback, slow-motion approach that Clapton has taken through most of the last decade. When the former Yardbird and Cream superstar decided to become England's answer to the former Yardbird and Cream superstar, he probably could have done without the seven-minute-plus live reprise of "Cocaine" (although it does boast some sprightly lead guitar lines by Albert Lee), but the rest of the selections here bounce off of each other nicely. From the sweet Okie ditty "Promises" to the shuffling reading of Johnny Otis' "Willie and the Hand Jive," "Time Pieces" offers a solid retrospective of an enigmatic, reclusive pop star who also happens to be a major musical talent.

The Clash: Combat Rock
"Made by the Clash"
Epic FE 37689

Combativeness is so integral to the Clash that the title of the band's fifth album is almost redundant. Without its propensity for making songs that sound like leaflets (the LP's opening, and accurate, sally is "This is a public service announcement, with guitars!") and its absorption of non-Anglo musical forms, the Clash would be like the basic bash-'em-out, rough-hewn British blues/rock level of the Pretty Things, or the Sect, or any of a dozen other '65 U.K. outfits. It's as easy to imagine Joe Strummer's hoarse, mush-mouthed voice belting out some obscure Bo Diddley song as it is to hear his position papers on life and smack in the ghetto, or the American children of Ho Chi Minh City.

If that sounds like disapproval, be assured that it isn't. It's precisely the melding of fervent commitment to issue-oriented rock, Third World influences, and energetic bluster that makes the Clash so rousing. Its impact was diffused over the course of "Sandinista!," a sprawling three-record set with a large dose of instrumental, reggae-dub numboness. But "Combat Rock," its first single-disc album since "Give Em Enough Rope," is more compact and hits harder.

Except for Should I Stay or Should I Go?, which approximates the mainstream style and pop content that gave the band its only U.S. hit, "Train in Vain (Stand by Me)," "Combat Rock" always has its dukes up. The aptly titled Overpowered by Funk, a razor-sharp swipe from The Book of (Rick) James, and the reggae Red Angel Drug-net—which tosses in readings from the film Taxi Driver—cover aspects of the New York City transit system. The first contains a rap defending graffiti, the second is about the Guardian Angels, and they're both among the LP's best performances, with particularly hot drumming by Topper Headon. The Clash is the Clash-middle-eastern equivalent of "Storm the Bastille!" and Car Jamming somehow manages to take on Agent Orange and Lauren Bacall. How can you resist a combination like that?

The group still brings out the polemic sledgehammer too often: The ironies of Know Your Rights are thuddingly obvious, Straight to Hell contains yet another bitter reference to Coca-Cola (every Clash album seems to have one) as a symbol of callous Americanization, and special guest Allen Ginsberg recites laughable lines ("slander cosmopolis/enable the populace") on Ghetto Defendant. Once you get past the lyrical missteps, however, "Combat Rock" has an impressive share of wallowing rock, reggae, and funk. There is a lot of utter foolishness on the album—including a commercial for toilet bowl cleanser and the murky Death Is a Star—but when it cuts out the crap and cuts loose, the Clash justifies everything its most generous fans claim for it.

Marshall Crenshaw
Richard Gottehrer & Marshall Crenshaw, producers
Warner Bros. BSK 3673

Certain films that use period rock for their soundtracks—Diner. Who's That Knocking at My Door, American Graffiti—make it seem as though radio used to blast out one memorable song after another with no let up. Marshall Crenshaw's debut is a similar experience: He rarely misses his target, scoring with a series of brief, breezily melodic, and emotionally pinpointed tracks. Not for Me, The Usual Thing, There She Goes Again, and a number of other
Crenshaw compositions are reminiscent of the buoyant pop songs that Johnny & Dorsey Burnette wrote for Ricky Nelson, the Bryants for the Everly Brothers, and Buddy Holly for himself.

The LP sometimes sounds like a stylistic homage to those and other artists. The nonoriginal Soldier of Love is arranged as a dead-ringer tribute to the 1963 sound of the Beatles—right down to the “sha-la-la” background voices, klutzy drumming, and Liverpudlian lead vocal. (Crenshaw played Lennon in Beatlemania, but you won’t hold that against him for long.) There are familiar traces and touches all over “Marshall Crenshaw.” Yet he is no copying machine; his unassuming charm is his own, and his three-piece band, consisting of guitar, bass, and drums, is as lively as his songs are tuneful.

Crenshaw’s music hops, skips, and jumps. In a way, it’s an ’80s male equivalent of early ’60s girl-group rock, the musical genre that pinned its hopes on finding and holding that shy boy over in the corner. This album is mostly about his search for compatability, for a girl as quirky as he is, who hates TV and anything commonplace, who’ll go rockin’ around N.Y.C. and lay down her arms in surrender at the appropriate moment. His hymn to femininity in general (Girls ...) is one of the album’s least successful cuts, but Someday, Someway (earlier recorded by Robert Gordon), Brand New Lover (also on Lou Ann Barton’s debut album), and There She Goes Again are all wonderful songs about romantic entanglements.

The instrumentation remains sparse and basic throughout, with flourishes added when called for, such as Phil Spector-ish percussion on Cynical Girl and a multi-tracked swamp on The Usual Thing. Coproducer Richard Gotteher’s pop roots go deep (from the McCoys and the Strange- loves to Blondie and the Go-Go’s), and like Crenshaw he’s unabashed about digging into other people’s music for effects, or into his own past (the guitar lick on one song recalls the nearly forgotten Dirty Angels).

The message of “Marshall Crenshaw” is a hopeful one, perhaps most upbeat on She Can’t Dance, a number that both celebrates and captures the elemental rock spirit. So does most of the album, and considering the excellent songs that didn’t get on this album (But, But, Something’s Gonna Happen), there’s bound to be equally good things ahead from Crenshaw.

MICHTEL COHEN

Dreamgirls: Original Cast Recording
David Foster, producer
Geffen GHSP 2007

The Broadway musical Dreamgirls is about the meteoric rise of a black female vocal trio, the Dreams, to pop music superstardom in the ’60s and early ’70s. Though the fictional story loosely resembles that of Diana Ross and the Supremes, it deals first and foremost with the rigors and perils of show business, in this case in an era when black pop musicians were striving to connect with a larger, white audience. Director/choreographer Michael Bennett of A Chorus Line fame has once again put the inner workings of the entertainment trade in the spotlight and succeeded. Tom Eyen’s book and lyrics are caustic and probing. Henry Krieger’s music, far from sounding like watered-down Motown, draws on all forms of black music—including gospel, blues, and jazz—and casts them within the formal conventions of the Broadway score.

Most original cast albums are recorded live in one long session; this one was done over a period of more than a month, with all the advantages of multiple takes, multi-tracking, and overdubbing. Still “Dreamgirls” does not sound like a collection of #1 singles, and one never loses the story’s thread. Harold Wheeler’s sassy orchestrations and Clevaunt Derrick’s stunning vocal arrangements are faithfully reproduced, sounding particularly effective on Hard to Say Goodbye, My Love and One Night Only. Producer David Foster has even managed to capture the essence of the splashiest stage numbers. On Steppin’ to the Bad Side, for instance, where the businessmen behind the Dreams decide to use whatever corrupt tactics they must to succeed, the music and singing project a panoramic sleaziness. The show’s emotional blockbuster is And I’m Telling You I’m Not Going, sung by Jennifer Holliday as Effie Melody White, the trio’s original lead vocalist who is ousted in favor of a slimmer, sexier singer. Holliday’s heart-stopping gospel-meets-white, the trio’s original lead vocalist who is ousted in favor of a slimmer, sexier singer.

Holliday’s heart-stopping gospel-meets-white, the trio’s original lead vocalist who is ousted in favor of a slimmer, sexier singer.

While most of the songs here are closely associated with the show and aren’t necessarily designed to become pop standards, they are all consistently witty, engaging, and heartfelt. And ultimately it’s the merging of Broadway with #1 that distinguishes “Dreamgirls,” and makes it a potential classic of the modern American musical stage.

CRISPIN CIOE

Queen: Hot Space
Queen & Mack, producers
Elektra E 1-60128

Its first album arrived nearly a decade ago, trumpeting a quartet that surely was doomed at birth by rock evolution. Certain to sag under the weight of its Wagnerian guitar fanfares and searing cymbal flashes, Queen was dismissed then as perhaps the last of its breed.

Well, it’s no secret who’s laughing now. Even had Queen stayed closer to those incendiary stomping grounds, it might still be marketable, given the recent resurgence of hard rock. For this shrewd bunch, however, the secret to success has been a chameleon progression from power chords to pop and more recently to lean and surprisingly funky dance-rock. As a result, its huge constituency bridges black, pop, and rock audiences.

“Hot Space” continues that steady revisionism away from the once-dominant weight of guitarist Brian May’s textured guitar effects and even more toward the band’s rhythm section than on the crossover grooves of “The Game.” Most of Side I is propelled by the slippery synthesized bass of John Deacon and the drumming of Roger Taylor, whose hit-everything-in-sight technique of yore has given way to a leaner attack. On the opening Staying Power, Arif Mardin’s furious horn charts sizzle behind the band’s taut rhythms and Freddie Mercury’s typically leering vocal.

Queen’s enviously thick vocal harmonies are crafted seamlessly into this kinetic brew, almost obscuring the noxious mix of sexual manipulation and mean-spiritedness that pops up on Body Language and Buck Chat. Elsewhere, May’s brassy guitar fusillades make a brief, restrained appearance on Put Out the Fire, and Mercury flexes his sense of cabaret melodrama on Life Is Real (Song for Lennon) and the choral-harmony showstopper La Palabras de Amor.

The sense of craft throughout is evident, the compositional range impressive. Why, then, does Queen’s test-tube rock seem so chilly and calculated? The clue here is the rite Life Is Real, a eulogy for John Lennon cheapened by the precision with which Queen apes the vocal and keyboard timbres of Imagine. The song only underscores how little Mercury and friends have in common with the late Beatles and how insubstantial their concerns seem by comparison. Indeed, the gesture seems closer to grave-robbing than it does to sincere tribute.

At the other extreme is Under Pressure, a collaboration with David Bowie. Mercury’s vocal is as treacherously facile as ever, but his soul mannerisms seem more natural alongside the equally mannered readings Bowie offers. The song’s unveiling of a warilying old issue beneath its modern imagery—the risks of genuine care (“Love dares you to change our way of caring for ourselves”) and compassion—is closer to the heart of the matter than anything thing Queen has done. But then you can probably thank Bowie for that.

SAM SUTHERLAND

Otis Redding: Recorded Live
Nesuhi Ertegun & Ed Michel, producers. Atlantic SD 19346

If “Recorded Live,” subtitled “Previously Unreleased Performances,” were the only document of the late Otis Redding in con-
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ROXY MUSIC: AVALON
Rhett Davies & Roxy Music, producers
E.G./Warner Bros. 23686-1

"Avalon" is mood music for ultramoderns, a lush, richly textured, glossy bit of aural eiderdown. In spite of that—or because of it—Roxy Music's ninth album is also one of its best. Bryan Ferry, dapper crooner and pop aesthete, has fashioned a subtle, sublime collection of tunes, ripe with anguished cool and supersentimental notions, couched in oblique metaphors and half-twisted clichés that smack of diehard romanticism.

At one time, British singer/songwriter Ferry was so caught up in his Mr. Suave image that the music seemed secondary. But what has become more apparent with each successive Roxy Music LP is that he has managed to transcend that: Now the image has become the music. Ferry's astute synthesizer colorations, his dandy, dour lyrics and seductively melancholy vocals (Continued on page 82)

Jazz

Woody Herman Presents
Four Others, Vol. 2
Carl E. Jefferson, producer
Concord Jazz CJ 180

Few, if any ensemble jazz sounds have lasted as well as that of the Four Brothers, a three-tenor, one-baritone saxophone quartet that Woody Herman used in his 1947 Second Herd. The original, pre-Herman group was composed of four tenor players and came out of a band led by Gene Roland in Los Angeles. They took their name from Four Brothers, composed by Jimmy Giuffre—also one of the members. When three of the four joined Woody's band, baritone player Serge Chaloff—a holdover from the original Herman Herd—filled out the configuration. The three-plus-one blend has since become the quintessential Herman sound.

On "Four Others," Woody returns to the original concept of four tenors, played here by Flip Phillips of the original Herd, Al Cohn of the Second Herd, Bill Perkins of the early '50s Herd, and Sal Nistico of the '60s Herd. The tunes, which include Not Really the Blues, Four Others, and The Goof and I, are all out of Woody's copious repertory. The combination of Cohn's arrangements and Woody's sense of timing make them vivid settings for the four horns. Herman, modest as ever, appears only once, taking an alto solo on Tenderly. Cohn's introduction allows each player to make a brief and gracious bow to the Old Man.

No small part of the success of this set is due to its swinging rhythm section: drummer Don Lamond of the First Herd; George Duvivier, a non-Hermanite but a nonetheless ideal bassist; and John Bunch, a Herman pianist of the mid-'50s who gets a solo opportunity on The Goof and I and takes off like a rocket.

Indiana Ragtime
John Edward Hasse & Frank J. Gillis, producers. Indiana Historical Society IHS 1001 (two discs)
This two-disc set is most unusual. It focuses on Indiana as a center and source of ragtime. Indiana is normally little more than a ragtime footnote in comparison to such places as St. Louis, Chicago, or Sedalia, Mo. But with works here by Original Dixieland Jazz Band pianist J. Russel Robinson, Abe Olman, Jesse Crump, May Auferheide, Julia Niebergall, and even Hoagy Carmichael, the post-ragtime rag, it’s clear that the area had plenty to offer.

The recordings are of four types: piano solos, both current and old; performances by the Indiana University Ragtime Orchestra; recordings made from piano rolls; and old records by Arthur Pryor’s band, Vic Meyers’ 1920s dance orchestra, the New Orleans Rhythm Kings, Max Morath’s Ragtime Quintet, Tony Parenti’s Ragtime Gang, and the Bunk Johnson and Turk Murphy bands. The most interesting selections are the piano solos and the old band records. The piano rolls, by nature, don’t allow for much shading, and the University orchestra sounds somewhat tentative.

“Indiana Ragtime” is accompanied by an exceptionally attractive and informative booklet, filled with pictures, background on ragtime in Indiana, brief biographies of the composers, and detailed notes on the selections and the performers. Apparently many of the era’s successful rag composers were in their teens and early 20s; popular music was a young person’s game even at the turn of the century. Also gleaned from the notes is the fact that there were many black rag composers in Indiana, but since their work was rarely notated or published, most of it has disappeared. Only two pieces in this collection were written by blacks—Russell Smith’s That Demon Rag and Crump’s Mr. Crump Rag. The former was preserved because it was issued on a piano roll; the latter, which shows a ragtime musician moving into the Harlem stride style, because it was recorded by its composer in 1923. This beautifully prepared project should stir other historical and jazz societies to give their own local composers and performers proper due.

JOHN S. WILSON

Bud Powell: Inner Five
Bill Potts, producer
Musician E-1-60030

The Thelonious Monk Memorial Album
Orrin Keepnews, producer
Milestone M 47064

Bud Powell and Thelonious Monk were arguably the two most dominant influences in post-World War II jazz piano. In Powell’s case, it was obvious. He was the incredible, fiery genius—as much a determiner of bebop piano as Charlie Parker was of the saxophone. Today, it is virtually impossible to hear a jazz pianist who does not reveal a trace of Powell in his playing style.

This previously unreleased collection represents Powell in 1953, playing with the rhythm team of Roy Haynes and Charlie Mingus. “Inner Peace,” is a generous assortment of ten approximately three-minute pieces. (Lullabye of Birdland is heard in alternate takes.) It ranges from such standards as I Want To Be Happy and Nice Work If You Can Get It to bebop specials like Miles Davis’ Little Willie Leaps and Dizzy Gillespie’s Salt Peanuts.

Powell is at the top of his form, which, given the erratic quality of his performances in later years, is no small blessing. He plays in pristine bebop fashion, his improvisations unaffected by the somewhat grander pianistics that occasionally crept into his later work. What that means, of course, is that pieces like Little Willie Leaps and Woody n’ You are played with fleet, highly imaginative left-hand figures. At this stage, Powell used his right hand mostly as a percussive device.

Also here are two brief interviews conducted in 1963 in a French hospital, where Powell was confined for tuberculosis. I’m not sure why they’re included. His articulateness was musical, not verbal. And in any case, his epigrammatic remarks from 1963 have nothing to do with music recorded a decade earlier.

The Monk disc was assembled, appropriately, by Orrin Keepnews, the producer associated with Monk’s finest recordings. Keepnews is accurate in noting that this collection is not the “best” of Monk nor does it “come close to exhausting my own list of his most meaningful recorded performances.” It is, however, an extremely representative selection from what was one of the most creative periods in Monk’s life. For the uninitiated—or the misinformed—it should serve nicely as an introduction to one of the most eccentric geniuses in jazz history.

Among the highlights are Monk’s solo version of his now-standard ‘Round Midnight, a wonderful collaboration with Sonny Rollins on I Want to Be Happy (especially interesting since, in his later years, Monk rarely played anything except originals); Monk and Gerry Mulligan on I Mean You; Monk and Coltrane on the marvelous Ruby, My Dear, and Monk and Johnny Griffin on Nutty.

Perhaps most fascinating are the two versions of Little Rootie Tootie. The first was recorded by a Monk trio in 1952. Nearly seven years later, his solo from that first date was orchestrated for a ten-piece orchestra by Hall Overton. Incredibly, Overton managed to retain all the sheen, ingenuity and joy of Monk’s playing. And the band, which featured such stalwarts as Donald Byrd, Phil Woods, Pepper Adams, and Charlie Rouse, managed to stay within the Monk idiom (which is much more difficult than it seems).

The last date here is I’m Getting Sentimental Over You, recorded in 1960. It’s a curious choice for Monk and not one of his better outings. Shortly thereafter he signed with Columbia and embarked on a recording career that consisted mostly of repetitions of his past glories. The best and the brightest Monk took place on Prestige and Riverside, from whose catalogs this collection is drawn.

DON HECKMAN

Sippie Wallace: Sippie
Ron Harwood, producer
Atlantic SD 19350

When Bonnie Raitt was playing coffeehouses and folk venues at the start of her career, Sippie Wallace’s bawdy, teasing songs of loves and lovers were at the heart of her repertoire. Three of the tunes on “Sippie”—Women Be Wise, You Got to Know How, and Mighty Tight Woman—have been recorded by Raitt, who encouraged the blues singer to come out of retirement back in the Seventies, nursed her to good health when she was sidelined with cancer, and directed a documentary film on the life and times of the eighty-three-year-old, Houston-born singer/songwriter.

One listen through this funky, frolicsome LP is enough to show why Raitt (who guests on vocals and slide guitar) and a host of other American aficionados are ga-ga for this grande dame of the blues. On her first major label recording in decades, Wallace sounds forever young. She sings with sass and smart, her scratchy voice laden with wry nuances, booming with power, and marked by a quirky, personable sense of phrasing.

“Sippie” also boasts the ample, impassioned talents of Jim Darogny’s Chicago Jazz Band, whose rousing ragtime arrangements (by pianist Dagogny) frame Wallace’s jazzed-up blues in an authentic Roaring Twenties spirit, replete with warbling trombones, cool cornets, snaky saxes, honky-tonk piano runs, earth-pounding bass and tuba lines, and plucky banjo. The musicianship is consistently lively and inventive, in particular Peter Ferran’s loopy, lilting clarinet on Irving Berlin’s Say It Isn’t So.

Wallace offers a few other interpretations here—Everybody Loves My Baby and a “separation blues” titled Mama’s Gone. Goodbye—but the bulk of material has been wrought by her own wicked, winsome hand. She can be upfront and provocative (Won’t You Come Over to My House) or downcast and insecure (Suitcase Blues, A Man That Don’t Want Me). In either case her words and melodies ring true with an emotional verve seldom heard nowadays. As Raitt has been saying all these years, Sippie Wallace is indeed a national treasure.

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AUGUST 1982

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RETSSOFS REMEDIES
(Continued from page 14)

wires and sleeves entirely if either have been damaged. Even if you don't have this kind of system, you can usually buy extra headshells from the tonearm manufacturer. Then you'll always have wires and sleeves to work with. Never ever try soldering the wires to the cartridge pins. The heat can very easily destroy the cartridge.

One final possibility: If you've recently rearranged the components in your system and now have hum in the phono mode, the problem may be with the new setup. Most phono cartridges work on a magnetic principle and, to a greater or lesser extent, are prone to hum that's picked up from the magnetic fields that surround transformers, motors, or other electromagnetic devices found in a power amp or receiver. If your turntable is directly above or beneath one of these components, move it farther away or rotate it to a different orientation. If the hum level changes, you've found the culprit. Of course, cables from the tonearm to the preamp can also pick up hum if they're routed too close to power lines.

SONY PCM-F1/SL-2000
(Continued from page 40)

At home or in a studio, the two Sony units remain coupled and are as easy to use as any conventional tape machine. With Y connectors, the PCM-F1 can feed a videoformatted digital signal to several VCRs (to make multiple copies) or to your TV set (so you can watch the rows of digital pulses going by). And dubbing is as easy as it is with two ordinary audio cassette decks, unless the original cassette is copy-guarded, as most prerecorded digital software is.

The advent of digital recording has stirred controversy in some circles, but not at WFMT. Our production staff repeatedly compared analog tapes (recorded at 15 ips on either a Studer A-80 or B-67 two-track studio recorder using Dolby A noise reduction and Ampex 456 Grand Master tape) to digital tapes of the same event made on the PCM-F1/SL-2000 system. With synchronized playback and carefully matched levels, the digital received thumbs up every time. As James Unrath, WFMT production director and producer of the Milwaukee Symphony recordings, noted over a comparison of MSO tapes: "The analog tape sounds like a terrifically good recording, but obviously a recording. The digital tape doesn't sound like a recording."

This is not to say that digital recording is invariably flawless. On very rare occasions, error concealment is audible, and we are a little uncertain about the system's reproduction of ambience. A PCM-F1 recording may sound slightly drier than an analog version (an effect that can help clean up recordings made in a muddy-sounding concert hall). Whether the PCM-F1 substracts a little ambience or whether analog recorders add a little extra is not yet clear.

Although obviously not what one would call a shortcoming, it is also true that flaws in the recording environment become painfully evident on these Sony digital tapes. We recorded a folk music concert at Holsteins, a local folk club, and broadcast it the next day. Both our chief engineer and our acoustician phoned to marvel at the sound quality, but also to offer condolences for the hum on the recording. When we checked, the hum turned out to be the sound of the club's ventilating system, which was normally masked by tape noise in the analog recordings we made there. The other side of the coin is that recordings made in truly quiet environments become all the more impressive when the recording system adds no noise of its own. All digital recording formats have rock-solid speed stability, and the PCM-F1 seems to do as well as digital machines costing ten times as much when it comes to wow and flutter, which are below the measurement limits of virtually all test equipment. In fact, I think it is more this absence of wow and flutter than the wide dynamic range and lack of noise that makes PCM-F1 recordings sound unlike their conventional counterparts. Since the advent of recorded music, our ears have become accustomed to pitch variations caused by flutter. I suspect that the sudden total absence of flutter is the reason.

As with all other present-day digital cassette tapes, those made on this system cannot be edited physically, a disadvantage compared to the ease of editing analog open-reel tapes. Editing must be done by dubbing from one video cassette deck to another, which in turn requires a low dropout rate. This form of editing, though sufficient for most home recordists, does limit precision.

All things considered, the $3,000 PCM-F1/SL-2000 digital recording system is a bargain compared with an equivalent analog setup. High-end cassette decks sell for as much as $4,000, and a good semipro open-reel machine may list for as much as $2,000. (One of WFMT's Nagra/Dolby or Studer/Dolby open-reel combinations costs almost $10,000.) It's amazing that a self-contained digital system not much larger than an unabridged dictionary sounds better than a studio system the size of a washing machine—and does so at less than a third of the price.

The economics don't stop with the hardware. Tape expenses are also lower with the PCM-F1. A boxed reel of Ampex 456 audio tape (2,500 feet) costs about the same as a Sony L-500HG video cassette, except that you get twice the recording time (two hours) on the cassette. If you typically operate an open-reel recorder at 15 ips rather than 71/2, the digital format becomes even more economical. And video cassettes are better protected and smaller and easier to carry (Beta cassettes especially) than 10%-inch reels.

Many well-known producers and engineers claim that analog tapes made at 30 ips with Dolby A on a two-track system sound as good as, if not better than, digital recordings. But this approach raises analog costs even further and is totally impractical for home or semipro use. Although Sony's home digital system deliberately lacks such professional niceties as XLR connectors and balanced inputs and outputs, it sounds better than any consumer or semipro analog recording system on the market. And in the end, that's what really matters.

TEN HOT CASSETTE DECK FEATURES
(Continued from page 37)

TEN HOT CASSETTE DECK FEATURES
(Continued from page 37)
can be found only in some very expensive decks) are truly foolproof. The kind we are speaking of here need a brief absence of signal as a cue, but they often can be erroneously triggered by both very low signal levels and by high noise levels between selections. They are most reliable, therefore, in music of relatively restricted dynamic range that has been well recorded. And the utility of the feature depends in large part on your recording/listening habits: How often do you want to play just individual parts of your tapes?

Would that every deck had one of these! If you've ever indexed your tapes and then bought a new recorder whose counter didn't read the same way—or if you've ever wondered just how many minutes you've already recorded on your cassette side (and therefore how many are left)—you know why I say that. Real-time displays don't all work identically, and some are more useful than others. But all are a huge improvement over the arbitrary numbers of old-fashioned "turns counters," which don't even run at the same speed at the two ends of the tape.

The poshest real-time devices keep track of playing times even in the fast-wind modes. I believe most will in the near future. In the meantime, any calibration in true time values is welcome. In your hunt for a cassette deck, you'll undoubtedly encounter many features that I haven't mentioned. Still, if you use the ten basic ones listed here as a guide, you should be well on your way to finding the cassette deck that is ideally suited to your recording needs.
The rest of the releases in the series are more or less peripheral, though often enlightening. In the keyboard transcriptions (DSLO 552), one sees how Dowland's music was perceived by contemporaries whose improvisatory vision was not tied to the limitations of the lute. "A Miscellany" (DSLO 556) presents more alternative arrangements, including four more views of Lachrimae (to join another four from the keyboard works), and other arrangements for solo bandora, lute viol, and recorder, and lute duets and trios. A Muscall Banquet (DSLO 555), published by Dowland's son Robert in 1610, offers three of Dowland's finest songs, not included in any of the songbooks, along with works by Holborne, Martin, Hales, Batchelor, Guédron, Mogili, and Caccini; this excellent set is made all the more interesting by the surprise of several scholars that the selection of works was Dowland's own, not his son's. There is a competing Banquet recording, well played by Bailes (who, like Rooley, proves a better accompanist than soloist), Nigel Rogers, and Jordi Savall (Peters, deleted); but the new version's vocal variety was Dowland's own, not his son's.

One can quibble over a few aspects of the series' presentation. The lute solos and duets contained in the songbooks and Banquet have been lifted onto discs deemed more appropriate; it would have been nice to have them in their original settings, and given the number of lutenists involved in the project, straightforward duplication could have been avoided. Also, though Rooley's notes are often enlightening, particularly about the layouts of publications and his own scoring decisions, they sometimes skimp on pertinent information. For example, lists of sources would have been welcome for both the lute music and the Lamentations recording.

Rooley does, however, refer his reader to Diana Poulton's John Dowland (University of California Press, 1972) for such specifics, thereby acknowledging a debt to a musicologist whose research helped pave the way for a revival of Dowland's music. Her book, indeed a valuable companion to the record collection, not only contains a thorough biography and a work-by-work analysis, but reproduces a fascinating array of documents that brings Dowland and his age to life.

**DOWLAND: Henry Noell Lamentations (7): Psalms (7); Sacred Songs (3).**

Consort of Musickie, Amsterdam, Anthony Rooley, lute and dir. [Peter Wadland, prod.] OISEAU-LYRE DSLO 511, $10.98. Taped: KDSLC 551, $10.98 (cas-sette).

Psalms: All people that on earth do dwell (2); Praise ye the Lord, O Lord; God of our salvation; Behold, and have regard; O God of power omnipotent. Songs: I sing of love, my love is mightie. An heart that's broken. DOWLAND-WIGHTHORPE: Sorrow come.

**DOWLAND: Songbooks (4).**

Consort of Musickie, Anthony Rooley, lute and dir. [Peter Wadland, prod.] OISEAU-LYRE DSLO 508/9 (First), 528/9 (Second), 531/2 (Third), 585/6 (Pilgrimes), $21.96 each (two discs, manual sequence).

First Book: Unquiet thoughts. Who ever thinks or hopes. My thoughts are wrung with hopes; If my complaints. Come away, come weep; Rest awhile you cannot bear. Sleep when wayward thoughts. All ye whom love or fortune, Wilt thou unkind; Would my conceit; Come away; Would my conceit; Come away, come weep. I see you change; Burst forth my tears; Go after that I love; In my soul, when I am so sad. He is ready for you; I cannot help you. A shepherd in a shade; Tacet. Sorrow be to thee: How can I dwell in my heart chats broken. DOWLAND-WIGTHORPE: Sorrow come.

**DOWLAND: Lachrimae (7); Pavans, Almains, and Galliards (14).**

Consort of Musickie, Anthony Rooley, lute and dir. [Peter Wadland, prod.] OISEAU-LYRE DSLO 517, $10.98.

**DOWLAND: Lute Works (complete).**


**COLLECTOR'S GIOCONDA (Continued from page 49)**

A dramatic color in much of the playing. The woodwind commentary that winds through much of Act I, for example, is amply playful but not a touch ironic; brass chords are full and round but have no menace; the delicious strand of viola con sordino under the beginning of the second verse of the tenor aria is beautifully played but not at all mysterious or expectant. The second is a willingness to stir things up within a tempo, to create moments. There is a rhythmic literality to the reading that is, to me, quite against the nature of the piece, and when the singer shares the literal attitude (as Milnes, for one, tends to do), you can sense count on the forecast.

That, too, is Gioconda '80. This album is awfully well engineered: The sound has space and a much more natural balance than most recent recordings I've heard. The surfaces on my copy were perfect. Six manual-sequence sides of perfection! Can we stand it?

For the essential Gioconda, I heartily recommend ruminating about with historical excerpts and giving early Callas a spin. For an all-round performance in good sound that is at least superior to this one, you will do all right with the Tebaldi/London.

**PONCHIELLI: La Gioconda.**

CAST:

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<td>Avisse Badoero</td>
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**ENJOY!**

S1
BACKBEAT Reviews
(Continued from page 75)

complement the equally aloof, eloquent playing of reed man Andy Mackay and guitarist Phil Manzanera. Working in tandem with them are such ace rhythm augmenters as drummer Andy Newmark and bassists Neil Jason and Alan Spener. In toto, Roxy Music has attained a level of such high style that "Avalon" sounds substantial, even if it isn't.

The disc is a smooth cruise from beginning to end. More Than This is awash in Ferry's ardent keyboard motifs and spurred on by a beat-happy Newmark and Spener, The Space Between—an Angloized Boz Scaggs disco strut—takes on an eerie sheen from Manzanera's twangy guitar; the title track sounds like it was concocted in some opiated haze; Take a Chance with Me, the album's bounciest cut, sports a resilient guitar/oboe/harpsichord-like combo that is so dreamy that the song could be a dance anthem for sleepwalkers. Throughout, Ferry's vocals are deep, quavery, and tinged with that inimitable edge of insouciant flair.

In Arthurian legend, Avalon is the mythical paradise where Knights of the Round Table journey after death. Roxy Music's "Avalon" does indeed sound like paradise—a drippy, mildly decadent twentieth-century vision of it, but paradise nonetheless. STEVEN X. REA

Richard & Linda Thompson: Shoot Out the Lights
Joe Boyd, producer
Hannibal HNBL 1303

"Shoot Out the Lights" is filled with the threat of violence, with death, with communal tension, but the music is played and sung with an affirming passion that brings to mind a James Cain statement from Sere-nade: "True beauty has terror in it." This beauty/terror is in the way Linda Thompson sings about a young woman's questionable suicide on Did She Jump or Was She Pushed without stressing the melodrama; all the details are there—the glass, the blood, the fingerprints on the throat—but the song isn't ghoulish or flip. And it's in almost every one of Richard Thompson's guitar solos, which contain more logical force than entire songs by most composers.

The music on "Shoot Out the Lights" retains many of the traits that have been a part of Richard's work since his years with Fairport Convention. His melodic directness, the tonal purity of Linda's singing, and the stark contrast of their voices in harmony are anchored in folk tradition. For all that, this album has the jagged edges of rock & roll, often right alongside the folk elements. The title track, with its menacing lyrics and guitar slashings, is like some hybrid of Gordon Lightfoot and Warren Zevon; The Backstreet Slide couples a jaunty accordion with warnings about women who'll "stab you in the back with a kitchen knife"; and Don't Reneg on Our Love is a plea for marital conciliation set to a tempo that fairly gallops along.

All this may disconcert fans of such Thompson albums as 1976's shimmering "Pour Down like Silver." And one might wish for more songs in which the couple truly sang together rather than supporting one another in what are essentially solo vehicles. (The Wall of Death, a true duet, is one of the LP's most vibrant cuts.) But there are songs here that have a rare piercing accuracy. Walking on a Wire, about the woman's side of a marriage's pain, is not only hauntingly sung by Linda, but concludes with a guitar solo so vivid with anger and, finally, resignation (with one last, isolated note), as to act as a second voice. "Shoot Out the Lights" is a pessimistic album, but even its darkest moments are lit by musical clarity and integrity. MITCHELL COHEN

音乐和宗教信仰与引人深思与活力。可预见地，"True Democracy"是相当精炼的，从对反酒精饮料的Man No Sober到对警方派对的Blues Dance Raid。但Steel Pulse的音乐手法是这样的，这些信息声部新鲜且紧迫。当然"True Democracy"是其最优秀的专辑。
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