THE FUTURE OF MAGNETIC TAPE • HOW TAPE RECORDERS WORK
CONDUCTOR RICCARDO MUTI • FIRST VIDEODISC ON THE MARKET

EQUIPMENT TEST REPORTS: BI.C. FM-8 "Beam Box" FM Antenna
Design Acoustics D-12A Speaker System • Kenwood KT-917 Stereo FM Tuner
Philips AF 877 Record Player • Sansui AU-919 Integrated Amplifier

PORTABLE CASSETTE RECORDERS: GUIDE TO THE MARVELOUS MIDGETS

SOONER OR LATER, ALL CASSETTE DECKS WILL BE BUILT ALONG THESE LINES.
ONCE AGAIN, PIONEER BUILT IT SOONER

THE CT-F900 THE FIRST 3-HEADED, DUAL CAPSTAN CASSETTE DECK THAT OFFERS FLUROSCAN METERING, DOUBLE-DOLBY, A DIGITAL BRAIN AND BIASING BY EAR.

A METERING SYSTEM AS FAST AS THE SPEED OF SOUND.

Conventional cassette decks all playback with the same problem. Either you can record at the highest level possible without fear of overload, or you can record at the highest level possible without distortion. Less than 1.3%. And the first with a high power receiver. Sooner or later all cassette decks will be limited resolution.

A DIGITAL BRAIN WITH AN INCREDIBLE MEMORY.

All cassette decks have tape counters. Even the most respectable ones have mechanical counters you can't really count on. Pioneer's designed the most precise electronic way of keeping track of your tracks. As the take up reel rotates, pulses are fed to a microprocessor which provides a three digit readout on an electronic tape counter.

The terminology may be difficult to understand, but the benefit of all this is simple. Precision. Dependability. And convenience.

Many of these "better" cassette decks also claim they have advanced memories. But there are functions that even the best of them haven't been programmed to remember. The CT-F900 has three separate electronic memories of its kind that performs four different functions.

Memory Stop automatically stops the tape wherever you select. Memory

Play rewinds the tape to this spot and then automatically goes into the play mode. Counter Repeat rewinds the cassette when the end of the tape is reached. Then begins replaying the tape wherever you want it to begin. And when you can expect three heads from most repeatable cassette decks, you can also expect that they're either made of ferrite or permalloy.

The CT-F900 has recording and playback heads made of a newly developed Sendus Alloy. This remarkable bit of technology gives you higher frequency response (10-20,000 Hz) and lower distortion than ferrite. And better wear-resistance than permalloy.

BASING BY THE MOST SOPHISTICATED AUDIO EQUIPMENT KNOWN TO MAN. HIS EARS.

While many of today's equipped cassette decks let you monitor during recording, what they don't do is let you control what you monitor. The CT-F900 allows you to bias by ear. Which means you have almost as much control over your tape deck as you would over any other musical instrument.

By simply switching between the Source and Tape monitors and adjusting your bias control, you can make sure that what comes out of your deck is as clean and crisp as what went into it.

FEATURES OTHERS DON'T EVEN OFFER.

These are just a few of the features that set the CT-F900 apart from the competition. But even then there will be that fine line that has always separated Pioneer from the competition.

Value.

CIRCLE NO. 1 ON READER SERVICE CARD.

We bring it back alive.

©1978 U.S. Pioneer Electronics Corp., High Fidelity Components, 85 Oxford Drive, Moonachie, N.J. 07074

Mentioned optional.

THE CT-F900 sounds impressive. But it's not, half as impressive as what comes out of it. Given all this, it's no surprise that the CT-F900 is the first cassette deck that offers fluroscan metering, double-dolby, a digital brain and biasing by ear.

We were the first to introduce the high power receiver. Sooner or later everyone followed. We were the first to create the front loading cassette deck. And the first with a quartz lock loop tunable that was as easy on the ear as it was on the ear. Again, our competition had no alternative but to follow. Sooner or later all cassette decks will be limited resolution.

This is no small coincidence. And it's not nothing we've come accustomed to. It's a simple case of follow the leader.

Again, our competition had no easy on the budget as it was on the ear.

(Innovation is nothing new to Pioneer.)

The CT-F900 has the first electronic tape counter. As the take up reel rotates, pulses are fed to a microprocessor which provides a three digit readout on an electronic tape counter.

And the first with a high power receiver. Sooner or later all cassette decks will be limited resolution.

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Mentioned optional.
INTRODUCING THE EMPIRE EDR.9 PHONO CARTRIDGE.
IT SOUNDS AS GOOD ON A RECORD AS IT DOES ON PAPER.

It was inevitable...
With all the rapid developments being made in today's high fidelity technology, the tremendous advance in audible performance in Empire's new EDR.9 phono cartridge was bound to happen. And bound to come from Empire, as we have been designing and manufacturing the finest phono cartridges for over 18 years.

Until now, all phono cartridges were designed in the lab to achieve certain engineering characteristics and requirements. These lab characteristics and requirements took priority over actual listening tests because it was considered more important that the cartridges "measure right" or "test right"—so almost everyone was satisfied.

Empire's EDR.9 (for Extended Dynamic Response) has broken with this tradition, and is the first phono cartridge that not only meets the highest technological and design specifications—but also our demanding listening tests—on an equal basis. In effect, it bridges the gap between the ideal blueprint and the actual sound.

The EDR.9 utilizes an L. A. C. (Large Area Contact) 0.9 stylus based upon—and named after—E. I. A. Standard RS-238B. This new design, resulting in a smaller radius and larger contact area, has a pressure index of 0.9, an improvement of almost six times the typical elliptical stylus and four times over the newest designs recently introduced by several other cartridge manufacturers. The result is that less pressure is applied to the vulnerable record groove, at the same time extending the bandwidth—including the important overtones and harmonic details.

In addition, Empire's exclusive, patented 3-Element Double Damped stylus assembly acts as an equalizer. This eliminates the high "Q" mechanical resonances typical of other stylus assemblies, producing a flatter response, and lessening wear and tear on the record groove.

We could go into more technical detail, describing pole rods that are laminated, rather than just one piece, so as to reduce losses in the magnetic structure, resulting in flatter high frequency response with less distortion. Or how the EDR.9 weighs one gram less than previous Empire phono cartridges, making it a perfect match for today's advanced low mass tonearms.

But more important, as the EDR.9 cartridge represents a new approach to cartridge design, we ask that you consider it in a slightly different way as well. Send for our free technical brochure on the EDR.9, and then visit your audio dealer and listen. Don't go by specs alone.

That's because the new Empire EDR.9 is the first phono cartridge that not only meets the highest technological and design specifications—but also our demanding listening tests.

Empire Scientific Corp.
Garden City, N.Y. 11530
NEW PRODUCTS
Roundup of the latest audio equipment and accessories

AUDIO/VIDEO NEWS
Finally: A Videodisc Hits the Market

AUDIO QUESTIONS AND ANSWERS
Double Power Supplies, Amp/Speaker Fusing, FM Recommendations

AUDIO BASICS
Tape Bias: A Popular View

TECHNICAL TALK
Distortion—How Small Must It Be?

EQUIPMENT TEST REPORTS
Hirsch-Houck Laboratory test results on the Kenwood KT-917 stereo FM tuner,
B.I.C. FM-8 "Beam Box" FM antenna, Philips AF 877 record player, Design Acoustics
D-12A speaker system, and Sansui AU-919 integrated amplifier

PORTABLE CASSETTE RECORDERS
Field recording is a snap with the marvelous midgets

TAPE RECORDING: A SHORT PRIMER
Do you know just how your tape recorder does its job?

THE FUTURE OF MAGNETIC TAPE: TWO VIEWS
How goes it with "the writing paper of the electronics age"?

RICCARDO MUTI
A talk with the "heir apparent" to the Philadelphia podium

BEST RECORDINGS OF THE MONTH
Johnny Griffin’s "Live in Tokyo"
Orchestral Music of Zelenka
The Thompsons: "First Light"

CLASSICAL DISCS AND TAPES
PCM: Two Quartets
Beethoven String Trios
Bernstein’s "Songfest": Superb

POP RÖTGRÖVURE
Steve Simels

POPULAR DISCS AND TAPES
Superman
Stéphane: Greatest Hits, Vol. II
The Astaire Story

BULLETIN
William Anderson

SPEAKING OF MUSIC
Letters to the Editor
Going on Record
Advertisers’ Index

COVER: Design by Borys Patchowsky; photo by Bruce Pendleton. See page 72.
The first high-technology record cleaner was the Discwasher System. Four scientific revisions later, the Discwasher is literally years ahead of all other devices.

WITH PRIORITY TECHNOLOGY:
Discwasher D3 Fluid is proven by lab tests to be the safest active cleaning fluid for record care. But a good fluid is not enough. The Discwasher System is also a precision removal system that uses capillary action with slanted micro-fibers to lift dust, dirt, and dissolved debris off the record, rather than pushing them around like “dry” and “constant humidity” methods. The real dimensions of record care are safety plus integrated function.

WITH PROVEN VALUE:
The uniquely styled Discwasher handle is constructed of hand-rubbed walnut which will long outlast “plastic wonders”. This easily held handle is lightweight because of an integral cavity which conveniently holds the D3 Fluid bottle. A special brush to clean the directional-fiber Discwasher pad is included without charge, and also fits inside the handle cavity.

WITH GENUINE SATISFACTION:
Only Discwasher gives immediate performance, long-term record safety, pleasing physical characteristics and a price that hasn’t changed in five years.

Seek out the Discwasher System, by name. Only Discwasher delivers technology, value and satisfaction.

CIRCLE NO. 20 ON READER SERVICE CARD

YOUR RECORDS DESERVE SUPERIOR CARE: SEEK OUT THE DISCWASHER® SYSTEM
NOTED AT LAS VEGAS' WINTER CONSUMER ELECTRONICS SHOW: much activity on the metal-particle-tape front, with introductions of metal-particle-compatible decks (or retrofit programs for current decks) by nearly a dozen manufacturers and announcements of availability of blank metal-particle tape by at least two others....More cassette decks that electronically test each cassette inserted into their wells, then automatically adjust bias, equalization, and other parameters for best performance.... First appearance of electronic components that adjust themselves automatically for various a.c. line voltages worldwide....

Carver Corporation's 200-watt-per-channel, 13-pound power amplifier in a 6 3/4-inch cube with highly unusual circuit design to sell for about $300....First large-scale introduction of cigar-box-size mini-components to the U.S. market.

REVISED STANDARDS FOR DISC RECORDINGS have been issued by the Recording Industry Association of America. Although the revisions are not extensive, they do include increasing the frequency range covered by the RIAA standard: formerly 30 to 15,000 Hz, it is now 20 to 20,000 Hz. Copies of the revision (Bulletin E-1) are available free from the RIAA, 1 East 57th Street, New York 10022.

A LIQUID-COOLED AMPLIFIER using a tubular heat-exchanger filled with a special fluid has been shown in Japan by Sony. The novel technique is said to permit a more compact layout through better heat dissipation in critical output stages. This could mean more widespread use of pure Class-A amplifier designs, which up to now have generally had low power outputs because of the need for massive heat-sink assemblies.

A TECHNICAL BREAKTHROUGH IN AUTO STEREO, or perhaps just the ultimate vibrator, has been announced by Pioneer of America. Their Bodysonic seat cushion transmits bass vibrations of music played on the car stereo directly to the body of the person sitting against the cushion. A separate amplifier with a control labeled "intensity" affords adjustment of the degree of vibration. Pioneer advertises it as the first product "that allows the listener to feel the music."

WORKS IN PROGRESS: Harry Nilsson is at Cherokee Studios in Los Angeles completing his first album for United Artists; Memphis legend Steve Cropper (fresh from backing the Blues Brothers) is producing. Power pop-sters the Knack are also in L.A. recording their Capitol debut, which will include yet another giveaway song (Rendezvous) by the magnanimous Bruce Springsteen. Gary Brooker, the voice and piano behind the now defunct Procol Harum, is readying his first-solo effort in collaboration with Beatles producer George Martin for a tentative April release on Chrysalis. Founding Father Chuck Berry, newly signed to Atco, may be produced by Keith Richards. And the Rolling Stones are following Dire Straits (who've just wrapped up their second effort, with Jerry Wexler at the helm) into the Bahamas' Compass Point Studio to work on the follow-up to "Some Girls," also scheduled (but don't hold your breath) for April.

March 1979
9.4 MILLION AMERICAN HOUSEHOLDS have component stereo systems with a value of $600 or more, according to a recent survey conducted by Opinion Research of Princeton, New Jersey, for STEREO REVIEW. This figure represents about 12.3 per cent of all American households having telephones, according to the pollsters. The survey is the first nationally projectable measurement of audio-component popularity in the U.S.

RCA'S SELECTAVISION VIDEODISC SYSTEM will be introduced to the consumer market with "maximum speed," according to RCA president Edgar Griffiths. Industry observers view this announcement as a reaction to the introduction of the Magnavox videodisc system last December (see this month's Audio News, page 30). The RCA disc player, which operates on a capacitance principle and is incompatible with the Magnavox system, is projected to sell for about $400, the discs to cost between $10 and $17.

PIONEER has demonstrated an industrial videodisc player that is compatible with MCA's videodiscs. Pioneer manufactures the player in a joint venture with MCA, the supplier of discs for the Magnavox system. The Pioneer unit is intended primarily for commercial and educational use, and it was shown to demonstrate the company's capability in this field. Pioneer's intentions in the consumer videodisc area will be revealed, the company says, by October 1979.

BEETHOVEN'S NINE: Herbert von Karajan's award-winning recording of the complete Beethoven symphonies with the Berlin Philharmonic, released by Deutsche Grammophon in a boxed set in 1977, is now available on single discs. Lorin Maazel has just recorded the symphonies with the Cleveland Orchestra for Columbia, and his de luxe eight-record set should be in stores by March 1.

A SPECIAL PILOT-TONE SYSTEM for Dolbyized broadcasts will automatically switch in the noise-reduction system of properly equipped FM receivers. The system, to be submitted to the FCC this year for approval, was demonstrated at the recent Las Vegas Winter Consumer Electronics Show.

CAR-STereo AMPlifier-POWER RATINGS in general are as untrustworthy (or at least noncomparable) as home-stereo amplifier ratings were before the Federal Trade Commission brought everyone into line. Discussions have taken place among the IHF Standards Committee members on the question and at least one manufacturer (Pioneer) has called for standardization of specifications.

CARVER CORPORATION is the name of the new hi-fi manufacturing company established by Bob Carver, founder of Phase Linear. The name was chosen in a contest first announced in these pages in July 1978, with a prize of Carver Corp. equipment to go to the person whose entry was chosen as the most suitable. Only seventy people had the wit and imagination to suggest Carver Corporation. The winner, who was chosen by lot from among those seventy, is STEREO REVIEW reader Tony Rank, of Tulsa, Oklahoma.
Infinity makes a small contribution to the state of the art.

**InfiniTesimal**

Here's everything you'd expect from Infinity. (Except the size, 11 x 6½ inches.)

Here's the unparalleled clarity, warmth and smoothness of our larger speakers; inner details you never heard before from favorite recordings; and imaging so accurate you could actually place where people are coughing in the audience.

**The dual-voice-coil advantage in an advanced 5-inch woofer.**

Our exclusive Infinity/Watkins Woofer uses dual-voice-coils to smooth out and extend bass response. And it lets your amplifier develop more power at low frequencies than any other mini speaker. All this—and our highly-acclaimed EMIT™ Electromagnetic Induction Tweeter, too!

**The end of paper cones and their distortion**

Because paper and exotic plastic cones create vibrations of their own, adding unacceptable colorations to the music, InfiniTesimal introduces a superior new cone material: polypropylene.

It adds essentially no sound of its own, being almost perfectly acoustically inert. Its low mass and ideal damping characteristics result in dramatically improved musicality.

InfiniTesimal. In total—a small, magnificent 2-way system with unusual musical warmth, focus and transient attack. At about $175* each, a mini-speaker of uncompromising quality and accuracy for your home or vehicle.

True Infinity sound. From a definitely finite space.

*Manufactured by Infinity under license from Watkins Engineering, Inc.
*Suggested retail price, optional with dealers. Slightly higher east of the Mississippi.

We get you back to what it's all about. Music.

A toll-free call to (800) 423-5244—or from California, (800) 382-3372—will get you the nearest Infinity dealer’s name and address.


CIRCLE NO. 28 ON READER SERVICE CARD
POLITICAL MUSIC/MUSICAL POLITICS

Politics and poker, according to the Jerry Bock/Sheldon Harnick musical Fiorello, go together as naturally as, say, grits and red gravy. There are those who claim to see a similar affinity between politics and music, but the evidence is, I think, overwhelmingly against them. Trying to get music to snuggle up to any kind of ideological message, either implicit or explicit, is like trying to teach a nightingale to sing stock market reports. But people continue, ingeniously, to try.

One such attempt arrived on my turntable just in time to be decisively refuted by the evening news. I had, in fact, scarcely finished listening to a two-disc Angel release (SB -3865) called "Treasures of the Baroque Era" and featuring the National Iranian Radio & Television Chamber Orchestra when I was treated to the TV spectacle of 2,000 Iranian "students" mounting a flaming assault up a Beverly Hill-side to communicate their dis-pleasure to Tadj ul Moluk, the ninety-year-old wheelchair-bound mother of Iran's Shah Mohammed Reza Pahlavi. Others, including President Jimmy Carter, have commented on that persuasively sophisticated "political statement," so let us return to the "Treasures of the Baroque." The NIRT Chamber Orchestra, founded in 1967, has developed a repertoire that ranges from the Baroque to the twentieth century and includes commissioned works by Iranian composers. It plays a regular concert season under Bulgarian-born conductor Emil Tchaikowsky (who has conducted in Minneapolis and at Tanglewood) and tours both at home and abroad (Paris, Brussels, Amsterdam, Moscow). The Angel release is a kind of sampler, containing works (and parts of works) by Vivaldi, Handel, Rameau, Bach (the Allegro from the Brandenburg No. 3), Marcello, Corelli, Albini (yes, the Adagio in G Minor—some of these works are perilously, surprisingly close to becoming warhorses already), and Boccherini. The playing, though competent, is uninspiring—rather like the "Baroque" music we used to hear a lot about fifteen years ago. It is note perfect, but disturbingly lacking in affect. A good example would be the metronomic Bach; perhaps a better one the Boccherini Musica Notturna di Madrid—pretty, but with none of the electric atmosphere, the almost palpable Iberian air that suffuses the version by Karajan and the Berlin Philharmonic (DG 2530 247).

Why would anybody go to the trouble of releasing internationally two discs full of provincial music making? Because the message is not the music but the musical organization itself, a kind of status symbol meant to suggest partial membership in the cultural community of modern nations in a way mere Cadillacs and Mercedes-Benzes never could. Unfortunately, it works neither as politics nor as music, and the reason has nothing to do with the bad timing. Iran, formerly Persia, has a proud five-thousand-year history and perfectly respectable music to go with it. The vocal music is filled with a kind of melismatic cantillation (ululation?) reminiscent of Spanish flamenco, the instrumental with echoes of Indian ragas (check "The Persian Santur," "Nonesuch Explorer Series H-72039"). There is, significantly, none of it on the Angel discs, and if there are many more such unbridged chasms separating the modern and traditional cultures in Iran, little wonder that the country's leap into the twentieth century fell short.

Another such leap is about to take place in China, and we have already heard the phonographic curio—the Yellow River piano concerto by Marchen (April 1974 Stereo Review)—that may be its theme song. It remains to be seen, however, just how this cultural wrench will be handled in the years to come. As Cole Porter observed in Come to the Supermarket (In Old Peking), the Chinese are tremendous merchandisers; perhaps even the most exotic of Western music will not be too much for them.

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Member Audit Bureau of Circulations
Try the solution.
Camel Lights.

Camel Lights solves the low tar/low taste problem. A richer-tasting Camel blend does it. Delivers satisfaction at only 9 mg tar. For taste that's been missing in low tars, try Camel Lights.

Satisfaction. Only 9 mg tar.

Dear Record Company
- January's article on record quality control by "Engineer X" is one of the most novel and informative pieces on the subject that I have read. The author seems to be doing his job with the utmost accuracy, and I hope that what he has said will help readers understand the plight of the quality-control people at record companies and appreciate what they are doing for audiophiles. I am an audiophile and owner of a small music-production company; I have the finest equipment and a record collection that I am proud of. I handle my records by the edge (the more valuable ones with gloves on), and I am happy to report that out of close to 1,500 that I have purchased I have had to return only about ten because of defects, mostly warps. Damn few have had anything that I would call a manufacturing defect. Moreover, I have never had any difficulties in returning defective records. I feel that the quality of record manufacturing today is great and getting better all the time. "Engineer X" should be proud of his product!

Joseph J. Jahrling
Kan sa City, Mo.

- The author of "Dear Record Company" should know that the Postal Service no longer has a mailing category called "Educational Material." Materials sent to and from the audiovisual center in the school where I work are now marked "Library Rate." For the ordinary person who does not qualify for this category, the words "Special 4th-Class Rate-Sound Recordings" should be used on parcels of phonograph records or audio tapes. I guess the form letter that "Engineer X" used was wrong both for the customer who wrote to protest it and for the Postal Service.

Dick Thomas
Phoenix, Ariz.

Mt. Rodrigues
- All right, wise guys! What's the point of Rodrigues' "Anechoic Mountain" cartoon on page 56 of the January issue? There are probably, in these United States as well as elsewhere in the world, more awful eminences (or considerable protuberances) that go by the name Echo Mountain than there are mountain ranges to accommodate them. Mr. Rodrigues, however, is the first in our limited knowledge of the subject to put a name to one of that considerably larger group of convexities-mountains that have no echo... They're never as good when they have to be explained, are they?

Rick Anderson
Flint, Mich.

Recording Costs
- A most enthusiastic Bravo! for Norman Mendenhall's excellent article, "How to Make Good Records," in the January issue. Those of us who have for years been going through the sheer hell of trying to make top-quality records appreciate any effort to enlighten consumers about the problems and costs involved.

It should be emphasized that the base figure of 1,000 copies used in the production-costs table on page 80 is not so fictitious. Many classical recordings are manufactured in that category, mountains are not manufactured in that category, mountains that have no echo... They're never as good when they have to be explained, are they?

Rick Anderson
Flint, Mich.

David Bowie
- I'm sure that plenty of David Bowie's fans will write vicious replies to Steve Simeis' review of Bowie's "Stage" album in the January issue, but I won't bother waiting to see them before writing to defend Steve in the names of God and Lou Reed. That review was mild in comparison with some of those of some past Bowie fiascos. In one memorable critique, Steve took on not only Bowie but also Mel Torme and Franco Zeffirelli. And then there was his column (back when he was Pop Music Editor) about Bowie's acting... I'm from Michigan, and I lean against the clown because of his recent work with—or, rather, on—Iggy Pop (hmm, "Iggy," "Ziggy"—makes you wonder, doesn't it?). If it were up to me, all of Bowie's followers would have to listen to Velvet Underground albums until they realize what suckers they've been.

Jim McDonald
Binghamton, NY

McIntosh Laboratory Inc.
Box 96 East Side Station
Binghamton, NY 13904

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Address
City State Zip

If you are in a hurry for your catalog please send the coupon to McIntosh. For non-rush service send the Reader Service Card to the magazine.

CIRCLE NO. 34 ON READER SERVICE CARD

LETTERS TO THE EDITOR

McIntosh C 32

"More Than a Preamplifier"
McIntosh has received peerless acclaim from prominent product testing laboratories and outstanding international recognition! You can learn why the "more than a preamplifier" C 32 has been selected for these unique honors.

Send us your name and address and we'll send you the complete American FM directory. You will understand why McIntosh product research and development always has the appearance and technological look to the future.

Keep up to date.
Send now...
4-head cassette recording is here.

(1) Erase head  (2) Record head  (3) Playback head  (4) Your head

Give us your head, we'll supply the other three. You'll end up getting exactly what you want on tape. The first time. Because our new A-300 3-head cassette deck lets you hear your recording while it's being made.

The A-300 gives you full frequency response when monitoring. Our Dolby* NR circuit lets you record encoded and monitor decoded so you hear exactly what you have on tape. And each head is designed to do only its own job. You'll get the best audio results in each mode.

To give you some creative flexibility, the A-300 lets you mix mic and line inputs. There's memory rewind for fast program location. Output level controls for easy level matching. A removable cassette compartment lid for easier head cleaning and demagnetizing. And a price tag considerably smaller than you'd expect for all this.

So let's put our heads together. And get it right the first time. See your TEAC dealer for a hands-on demonstration of the A-300. For our new brochure write TEAC, 7733 Telegraph Road, Montebello, CA 90640.

*Dolby is a trademark of Dolby Laboratories.

TEAC®

CIRCLE NO. 57 ON READER SERVICE CARD
The Bose 901 Series IV: A new approach to room acoustics creates a major advance in performance.

It's well known that living room acoustics are a major factor in how any speaker will sound in your home. Recently, an ambitious Bose research program analyzed speaker performance in dozens of actual home listening rooms. The study showed that, while rooms vary greatly, their principal effects can be isolated to specific types of frequency unbalances. Based on this research, the electronic Active Equalizer of the new Bose 901 Series IV speaker system has been totally redesigned. New controls allow greater capability for adjustment of room factors than conventional electronics, and make possible superb performance in almost any home listening room.

These new room controls also let us develop a basic equalization curve with no compromises for room effects, allowing still more accurate tonal balance. In addition, an important improvement in the design of the 901 driver makes possible even greater efficiency and virtually unlimited power handling.

These innovations combine with proven Bose concepts to create a dramatic advance in performance: in practically any listening room, with virtually any amplifier, large or small, the 901 Series IV sets a new standard for the operable, spacious, life-like reproduction of sound that has distinguished Bose Direct/Reflecting® speakers since the first 901.

The Mountain, Framingham, Mass. 01701
bothered to run an article on them, I was usually critical of something or other, range able. In comparison, Devo’s lyrics, which are inspired, not to say fast ‘n’ bulbous. The Cap- it is also funny, sincere, and sometimes in- spired. I envy her guy!

MARCH 1979

I envy her guy!

The speaker shown above is the New Advent Loudspeaker—a new version of the system that has been this country’s best-selling and most imitated speaker for several years. If you have been thinking of getting, or improving on, a stereo system, the New Advent Loudspeaker can give you performance that’s clearly in the “best” category for the price you would normally pay for “something pretty good.” Its price is $139 to $169*, depending on cabinet finish and how far we have shipped it.

For full information, including a list of Advent dealers, please send us this coupon at the address below. Or call (toll-free) 800-225-1035. In Massachusetts, the non-free number is 617-661-9500.

Thank you.

Name ____________________
Address ____________________
City ____________________
State — Zip ____________________

Advent Corporation
195 Albany Street,
Cambridge, MA 02139

*Suggested prices, subject to change without notice.
imagined was deceiving me. I put on a stereo record and asked my wife to listen and tell me whether it was stereo or quad. She said it sounded quadraphonic! Here is a bonus—Mr. Hodges seems not to have considered—but to get the effect it is critical to balance the relative loudness levels of all four speakers.

Now, I have a question: if the Hafler hook-up is good for rear speakers, wouldn’t it also help the “pseudo time-delay” effect to use it for the front speakers as well? If so, just how should the wiring be done?

Ralph Hodges replies: The Hafler system was originally conceived as a quadraphonic matrix system, and at least one demonstration record was produced by Dynaco to exhibit its potential. But its ability to “enhance” many stereo recordings, making them sound quadraphonic, was considered one of its strongest selling points.

And, yes, logically you’d expect time delay to be appropriate for the front speakers as well, since reverberation impinges on a listener from all directions. Most time-delay devices do in fact provide switches to inject some delay into the front channels. Interestingly enough, this is not their usual mode of operation; employing the front delays is left as a user option. In any case, the Hafler system itself involves no time delay but simply provides some of the subjective effects that time delay affords. No processing of the front-channel signals is necessary or appropriate.

Reviewer Ratings

Ever since I started reading STEREO REVIEW in February 1976, I have noticed, on the average, at least one letter per issue either attacking or defending the record reviewers. As my interest in hi-fi equipment has grown, I have used the reviews to expand my record collection, often adding records by artists I would ordinarily have paid little or no attention to without STEREO REVIEW’s critics’ endorsements. About a month ago I had fantasies of writing the definitive letter on the ability and integrity of these reviewers; however, Larry Winter’s letter in the December issue says just about what I wanted to say. I would like merely to add some statistical support. Since the February 1976 issue I have bought sixty-four albums reviewed in STEREO REVIEW, those receiving positive reviews that I also liked number fifty-five, or 78 per cent; favorably reviewed records that I did not like number five, or 8 per cent; records receiving negative reviews that I happened to like make up the remaining nine, or 14 per cent. Although liking a particular record is a purely individual matter, STEREO REVIEW’s critics and I agree much more often than not.

Unemployed Discs

My wife and I do volunteer work at a home for retarded adults, and we have found that it is an excellent place to donate used discs. Many of the residents have a real love for music and have their own record players. Perhaps other STEREO REVIEW readers might be interested in this use for their old records. It certainly beats letting them sit on the shelf gathering dust.

The Ultimate Insult

A friend of mine was in church one recent Sunday, head devoutly bowed, listening fervently to the benediction being delivered over the P.A. system (as it now is in many large holy edifices), when suddenly to his amazement and to the utter chagrin of the priest the services were rudely interrupted by a sharp crackle and then the words, “Breaker one-nine, breaker one-nine . . .”

My first impulse on hearing this story was to laugh, but then I thought of the terrible implications. I mean, is nothing sacred? How often have we prayed to the Great Spirit to banish this pernicious plague from our transistors forever? This incident seems to be a dark augury that our prayers may never be answered. If God can’t stop RFI, what chance have we?

Perhaps He allowed it through that once to demonstrate His sense of humor, or maybe to deflate any possible pomposity in the delivery of the P.A. system; interestingly to the benediction being delivered over the P.A. system (as it now is in many large holy edifices), when suddenly to his amazement and to the utter chagrin of the priest the services were rudely interrupted by a sharp crackle and then the words, “Breaker one-nine, breaker one-nine . . .”

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Perhaps He allowed it through that once to demonstrate His sense of humor, or maybe to deflate any possible pomposity in the delivery of the lesson. But, brethren audiophiles, I beg ye, tell me true and without dissembling: God is on our side, isn’t He?

Peter Tocci
Leominster, Mass.
AR ENTHUSIASTICALLY INTRODUCES THE NEW AR90.

Bookshelf speakers, even the biggest and best of them are (let's face it) designed for bookshelves.

They perform best when they're positioned well off the floor with plenty of wall around them. On the floor, they become a compromise.

And that's where the brilliant new AR90 comes in.

It's only a hair taller than a good-sized bookshelf + stand combination. And it's only a shade more expensive.

But you won't have to re-arrange all the furniture to fit it into most listening rooms. And in terms of performance it is simply not in the same league with any bookshelf speaker. Even ours.

The AR90 is a four-way floor standing system which incorporates most of the refinements we introduced recently in the fantastic AR9.

With a pair of 10” floor level, side-firing woofers, you can place it almost anywhere in the room, even in a corner, without a performance penalty.

The crossover is very sophisticated, with crossover points at 200Hz, 1200Hz, and 7000Hz, which does dramatic things for bass and midrange performance.

The Acoustic Blanket™ which AR invented, patented and introduced on the “9,” plus a vertical array of mid- and high-range drivers, contribute to smooth response and sharpened stereo imagery. And there's a lot more.

It all adds up to the first exotic floor-standing speaker that will fit comfortably into most rooms and isn't priced too exotically either. As of now you can hear one.

If you love music we think you'll be just as enthusiastic about it as we are.

THE NEW AR90, LIKE ALL AR SPEAKERS, COMES WITH A FULL 5-YEAR WARRANTY ON CONSTRUCTION AND PERFORMANCE. YOUR AR DEALER HAS DETAILS AND A BROCHURE. OR WRITE FOR ONE TO US AT THE ADDRESS BELOW. ABOUT $550 EACH.

TELEDYNE ACOUSTIC RESEARCH
10 AMERICAN DRIVE, NORWOOD, MA 02062 USA IN CANADA: A.C. SIMMONDS & SONS © 1978 TELEDYNE ACOUSTIC RESEARCH CIRCLE NO. 3 ON READER SERVICE CARD
Killer!

That's a Jensen car audio system.
That's the thrill of being there.

You've got to want the best. The max in music. The Killer. Then there's only one way to go.
The Jensen R430 car stereo receiver teamed with a Jensen Separates speaker system.
It all starts with the R430 Receiver. The AM/FM Stereo/Cassette unit that rivals many home receivers. Feather-touch electronic switches control Dolby Noise Reduction, Loudness, Interstation Muting, and Local/Distance FM tuning.
A separate, trunk-mounted Power Amp gives you up to 60 watts RMS when you need it. The Bi- amplification mode distributes that power perfectly for knock-out realism.

More? Lots more. But look what the R430 teams up with.
The Jensen Separates. The revolutionary car speaker system that gives a flawless interpretation of everything the R430 sends it. Imagine individual woofers, tweeters, and midrange units custom positioned throughout your car...for unparalleled sound reproduction. Coupled with an under-dash control unit that lets you balance the music to your personal taste. That's the Separates.

Touch the "Bi-Amp" switch on the R430 Receiver and each individual woofer, tweeter and midrange gets the precise frequency range and power to put you right in the concert.

This system's a killer. That's the Jensen R430 Receiver and Separates. That's the thrill of being there.

JENSEN
The thrill of being there.

For more information, write Jensen Sound Laboratories, 4136 N. Wauwatosa Parkway, Wauwatosa, WI 53222.

-- Dolby and "Dolby System" are registered trademarks of Dolby Laboratories, Inc.

CIRCLE NO. 29 ON READER SERVICE CARD
**New Products**
latest audio equipment and accessories

**Flew Products**
latest audio equipment and accessories

and two AM stations to be preset and selected. The tuner stage also uses a phase-locked-loop multiplex decoder and ceramic i.f. filters. Front-panel controls include a low-cut filter that rolls off signals below 60 Hz per octave and two high-frequency filters that may be used separately or in combination. Price: $275. The front-loading CD cassette deck has a record-playback frequency response of 30 to 16,000 Hz with ferrichrome, chromium-dioxide, or high-output ferric tape, and 30 to 15,000 Hz with “standard” tape. With the CD circuits operating, the SN is 64 dB with ferrichrome or chromium-dioxide tape and 61 dB with standard ferric tape. Wow and flutter (weighted) are rated at 0.06 per cent. Price: $275. The KA-907 is rated at 150 watts per channel at 8 ohms. Dimensions: 17 x 15 x 8 inches. The Kenwood KA-907 integrated amplifier uses the same basic circuit techniques that were employed in the design of Kenwood’s esoteric series of single-channel amplifiers. The point of these techniques is said to be to reduce transient forms of distortion by increasing bandwidth, and is achieved by using four bias circuits for the Model 907, and improving the amplifier’s reaction to complex, rapid waveforms. The KA-907 is rated at 150 watts per channel with both channels driven into 8 ohms from 20 to 20,000 Hz. Total harmonic distortion under these conditions is no greater than 0.01 per cent, and intermodulation distortion is no greater than 0.0005 per cent. Signal-to-noise ratio for the moving-magnet phono stage is 96 dB or greater, and for the moving-coil phono input it is 76 dB or greater. RIAA accuracy is within 0.2 dB of the ideal, and phono overload at 1,000 Hz is 230 millivolts.

**SAE Introduces Mid-price Components**

The SAE Two series of electronic components include the T3U tuner (top), the C3A integrated amplifier (center), the CD3 cassette deck (bottom), and the RSC high-fi (not shown). The AM/FM receiver is rated at 30 watts per channel with total harmonic and intermodulation distortion of 0.09 per cent or less. The phono section has a signal-to-noise ratio (SNR) at 78 dB, an overload point of 125 millivolts (mv) or greater, and an RIAA frequency-response accuracy of ±0.5 dB. The tuner section of the RSC has a usable sensitivity of 11.2 dBm or 2 microwatts, a sensitivity of 40 milliwatts (37.3 dBm) for 50-dB quieting in stereo, and a capture ratio of 1.5:1. Alternate-channel selectivity is 80 dB, and harmonic distortion in stereo FM is 0.25 per cent or less. Price: $335. The C3A integrated amplifier is rated at 50 watts per channel with a total harmonic and intermodulation distortion of 0.05 per cent or less. Its phono section has a SNR of 85 dB, frequency-response accuracy of ±0.25 dB, and an input overload greater than 150 millivolts. The C3A is equipped with front-panel power meters, two tape-monitor circuits with full dubbing in both directions, and an audio-frequency response of 10 to 30,000 Hz. Price: $325.

The KA-907 is rated at 150 watts per channel with both channels driven into 8 ohms from 20 to 20,000 Hz. Total harmonic distortion under these conditions is no greater than 0.01 per cent, and intermodulation distortion is no greater than 0.0005 per cent. Signal-to-noise ratio for the moving-magnet phono stage is 96 dB or greater, and for the moving-coil phono input it is 76 dB or greater. RIAA accuracy is within 0.2 dB of the ideal, and phono overload at 1,000 Hz is 230 millivolts.

**Wide Bandwidth in “High-speed” Amp From Kenwood**

The worst of these techniques is said to be to reduce transient forms of distortion by increasing bandwidth, and is achieved by using four bias circuits for the Model 907, and improving the amplifier’s reaction to complex, rapid waveforms. The KA-907 is rated at 150 watts per channel with both channels driven into 8 ohms from 20 to 20,000 Hz. Total harmonic distortion under these conditions is no greater than 0.01 per cent, and intermodulation distortion is no greater than 0.0005 per cent. Signal-to-noise ratio for the moving-magnet phono stage is 96 dB or greater, and for the moving-coil phono input it is 76 dB or greater. RIAA accuracy is within 0.2 dB of the ideal, and phono overload at 1,000 Hz is 230 millivolts.

**CIRCLE NO. 21 ON READER SERVICE CARD**

**CIRCLE NO. 22 ON READER SERVICE CARD**
6 records have never been lowered, lifted, programmed and played like this before. Even remotely.

You touch a few buttons. A record lowers gently on to the platter. The tonearm lifts, glides silently over the record. Past the first track, the second track, the third track, and lowers to play the fourth track. The music you wanted to hear first.

The quality of the sound is something you’ve never experienced before. Suddenly, with the Accutrac® +6, you enter a whole new world of music enjoyment.

Because when you’re at the computerized feather touch controls of the Accutrac +6 you’ll realize it’s more than just a turntable.

It’s an experience.

Its features go far beyond your imagination.

A computerized track selector lets you hear the tracks you like, in any order you like, even skip the tracks you don’t like, on all six records.

The Accuglide® Spindle is like a record elevator. It doesn’t drop your records, so there’s "no plop." It even raises all six back up when you’re through playing.

And the Accutrac +6 is available with a remote transmitter which lets you control everything from across the room. On some models, there’s even remote volume control. The specs are also remarkable. Rumble is better than -66dB (Din 45539B). Wow and flutter are less than .04% WRMS.

With the computer technology of the Accutrac +6, the operation of a turntable has never been easier. And the micro-electronics eliminates hundreds of mechanical parts to achieve new levels of reliability and performance.

Experience the Accutrac +6 at your Accutrac dealer. You’re not going to believe your ears or your eyes.
The Acoustic Research AR90 is a four-way columnar loudspeaker system incorporating many of the same design characteristics as AR's top-of-the-line AR9. The AR90 uses two 10-inch bass drivers side-mounted in an acoustic-suspension enclosure (system resonance is 32 Hz), an 8-inch lower-mid-range driver (also mounted in a sealed sub-enclosure), a 1½-inch upper-mid-range driver front-loaded by a shallow "semihorn," and a 3½-inch dome treble unit. As in the AR9, an "acoustic blanket," a sheet of dense felt said to reduce cabinet-diffraction effects, covers the area of the front panel surrounding the upper three drivers. Crossover frequencies of the system are 200, 1,200, and 7,000 Hz, with three-position level-control switches for adjustment of all drivers except the bass units. Nominal impedance is 4 ohms, with a minimum impedance value of 3.2 ohms. Power-handling capability is specified as 300 watts continuous (with the amplifier clipping no more than 10 percent of the time), and minimum recommended power is 50 watts. The enclosure, which is finished in oiled walnut with a black front panel and grille material, has approximate dimensions of 43½ x 14½ x 15¾ inches. Weight is 82 pounds. Price: $550.

Audio Pulse has introduced its second ambiance-synthesis system, the Model Two, which was developed to provide a complete time-delay system with built-in amplifier and optional low-cost secondary speakers. The Model Two contains reverberation-simulating circuitry very similar to that of the company's Model One, including facilities for initial delay times ranging from 19 to 103 milliseconds and a reverberation decay time variable from 0.1 to 0.6 second. Additionally, the Model Two has bass and treble controls for adjusting the rear-channel balance (the bass can be varied from +2.5 to -12.5 dB at 70 Hz, the treble from +4 to -7 dB at 7,000 Hz). There is a 25-watt-per-channel amplifier to power both rear speakers. The amplifier section has a total harmonic distortion rating of 0.5 percent or less; signal-to-noise ratio for the unit is rated at -80 dB for the direct output and -72 dB for the delayed output. An auxiliary line-level output that is variable from 0 to 1.5 volts is on the rear panel. Dimensions: 16 x 3½ x 10½ inches. Price: $359.

Designed specifically for use as a secondary speaker in time-delay applications, the Audio Pulse AP52 is a two-way vented-enclosure design with a 5½-inch bass driver that crosses over to a 2-inch cone-type treble unit at 9,000 Hz. Frequency response is specified as 80 Hz to 20,000 Hz ± 3 dB, nominal impedance is 8 ohms, and maximum input power is 25 watts on musical program material. The drive units are mounted on a slanted top panel, and the enclosure is finished in walnut-grain vinyl. Dimensions are 19½ x 11 x 7 inches. Price: $100 per pair (sold only in pairs).

(Continued on page 28)
WHICH NEW HIGH BIAS TAPE WINS WITH MAHLER'S FOURTH SYMPHONY?

Choose eight measures of Mahler's Fourth that are really rich in the high frequencies. The type of passage that high bias tapes are designed for.

Record it on your favorite high bias cassette, using the Chrome/CrO₂ setting. Then again on new MEMOREX HIGH BIAS.

Now play back the tapes.

We're convinced you'll have a new favorite.

New MEMOREX HIGH BIAS is made with an exclusive ferrite crystal oxide formulation. No high bias tape delivers greater high frequency fidelity with less noise, plus truer response across the entire frequency range.

In short, you can't find a high bias cassette that gives you truer reproduction.

MEMOREX Recording Tape and Accessories. Is it live, or is it Memorex?

CIRCLE NO. 35 ON READER SERVICE CARD
Yamaha goes its separates performance,

We’ve never done things the conventional way. Witness our legendary B-1 and C-1 separates. These components, utilizing Yamaha-developed Vertical-FET technology, brought into being a new level of natural, accurate sound, advanced features and dramatic styling. Our new C-4 and M-4 separates follow in this tradition, while doing some precedent setting of their own.

C-4 We were determined that the performance of the C-4 should put you in touch with the outermost limits of the audio art. So it has the most advanced circuitry imaginable to give you sound so real and true, you’ll swear it’s live. State-of-the-art DC circuitry in the phono preamp section reduces distortion to a miniscule 0.0035% at 2V output. Signal-to-noise ratio has been tamed to the virtually inaudible level of 97dB at 10mV. Plus we’ve added an exclusive Current Noise Reduction Circuit to maintain this high S/N ratio regardless of varying impedances caused by using different cartridges. But the sound of the C-4 goes beyond super specs and state-of-the-art circuitry. You have to hear the sound to believe such pure, musical tonality could pass through a piece of electronics.

The C-4’s features put you in total command of its superb sound. Unheard-of tone control is yours with the exclusive, continuously variable turnover frequencies for the bass and treble controls. No need to hook up an expensive outboard parametric or graphic equalizer to make meaningful tone adjustments. The C-4 gives you the best of both at the twist of a finger. And with the C-4, you don’t have to settle for anything less than the absolute optimum performance from your choice of phono cartridge. Select from five ranges for both capacitance and resistance to perfectly match the amp’s load resistance to your cartridges’ characteristics. You also have the luxury of indulging in the beautifully transparent highs available from a moving coil cartridge, because we’ve outfitted the C-4 with its own head amp. It provides the boost necessary for a moving coil cartridge, saving you the expense of buying a separate head amp or transformer. Completely independent Input and Output selectors give you the freedom of listening to a signal from one source while recording a signal from another. Features like these make the C-4 a super-sophisticated device whose possibilities and applications are limited only by your imagination.

With graceful, yet bold styling, executed with ease-of-operation in mind, the C-4 is a marvel of modern technology leaving nothing to be desired but its ownership.
way. With unprecedented features and price.

M-4 Our passion for pure tonality reaches toward perfection in the M-4. To deliver the cleanest, most musical sound possible, we built it with DC circuitry in a dual mono amp configuration, each with its own signal path from input to output. The input section consists of dual-FET’s in a differential configuration with a cascode bootstrapping circuit. So you get the unbeatable advantages of DC circuitry—minimal low frequency phase shift and maximum low frequency accuracy and musicality—while beating the inherent instability of DC circuitry.

The M-4’s specs are nothing short of spectacular. THD takes a bow at an incredibly low 0.005% at rated output of 120W per channel into 8 ohms, 20Hz to 20kHz. Signal-to-noise ratio is, (please hold the applause) an utterly silent 118dB.

Again though, specs can’t do the sound of the M-4 justice. When it comes to doing justice to amplifying a signal from a preamp (especially the C-4) we feel the M-4 deserves a standing ovation. If you love musically accurate sound coming from your speakers, you will be equally enthralled with the sound of the M-4.

And with its functional features.

Visually arresting LEDs monitor your amp’s power output, while overload indicators allow you to see when you’re pushing it beyond its intended limits. The M-4 is a musical experience you participate in. Drive two sets of speakers independently or simultaneously with the simple push of a computer-grade switch, as well as select the DC or AC operating mode with the back panel switch.

And while you are driving your M-4, its drilled metal-mesh top allows the amp to “breathe.” It’s just one example of the unique design philosophy of form-follows-function in styling, features and performance.

And that’s what our new separates are all about. Unprecedented performance, features and styling.

And price? Well, you can benefit from what we learned with our cost-no-object B-1, C-1. Without paying the price. Audition our new, rack-mountable (with optional kit), super separates, the C-4 and M-4, for yourself. It’s an ear-opening experience you won’t want to miss. For the name of your Yamaha Audio Specialty Dealer, check your Yellow Pages or write us.

From Yamaha, naturally.
We build a speaker that sounds like music

It can accurately reproduce the 120+ dB peaks that are found in some live music. That's more than just being able to play music loud. It can accurately reproduce the music bandwidth - from below 25Hz to 20kHz. And the Interface:D's vented midrange speaker reproduces midrange sounds with the clarity and purity that allows precise localization of sound sources - both lateral and front-to-back.

The Interface D is the only commercially available speaker we know of that can meet these criteria. Audition them at your Interface dealer.

New Products
latest audio equipment and accessories

Teac Offers Primer On Multitrack Recording Technique

Teac Corporation is making available a forty-six-page booklet written by tape specialist Dick Rosmini. The Multitrack Primer covers all phases of multitrack recording technique: setup and layout, impedance matching, cable connections, studio acoustics, cueing systems, and microphones. The booklet will be sold through Teac dealers and can also be ordered by mail from Teac's advertising department (7733 Telegraph Road, Montebello, Calif. 90640). Price: $4.95 (add $1 postage and handling for mail orders).

Bang & Olufsen's New High-style Cassette Deck

The B&O Beocord 5000 is a two-motor, top-loading cassette deck with a low-profile design and a Sendust-alloy record/play head. The transport mechanism of the deck is of the dual-capstan type and employs an a.c. motor regulated by a servo-loop and two heavy (325 gram) capstan flywheels to reduce tape-speed variation. A second, d.c. motor serves to wind the take-up spool and fast-wind the tape. Transport functions are controlled by "light-touch" keyboard switches that activate full logic-governed solenoids. A special circuit automatically eliminates magnetization of the tape head by reducing the bias current supplied to the record head in a gradual manner rather than switching it off suddenly. The deck has peak-level indicators consisting of two vertical rows of numerical readings, from -25 to +3 dB, that are illuminated from the rear and disappear when not lit. Additional top-panel features include a control that permits smooth fade-ins and fade-outs, bias switches for chromium-dioxide and conventional ferric type tapes, and a smoke-color acrylic panel that closes to cover the cassette well, meters, and status lights. A headphone jack with volume control and a DIN-style dual microphone input with a stereo/mono switch are found on the lower left side of the front panel. (The 4C-4650, an accessory adapter to convert this input for use with two ¼-inch microphone plugs, is available for $9.) Frequency response of the Beocord 5000 is 30 to 15,000 Hz ±3.5 dB with either chromium-dioxide or ferric tapes. Signal-to-noise ratio is 65 dB with either type of tape. Dolby circuits operating. Weighted rms wow and flutter is rated as 0.1 per cent or less, and fast-winding time is 60 seconds for a C-60 cassette. Dimensions of the enclosure, which is finished in rosewood and brushed steel, are 18⅞ x 3⅞ x 11 inches. Price: $595. Circle 131 on reader service card

High-power Receiver From H. H. Scott

H. H. Scott's new top-of-the-line receiver, the Model 390R, is a 120-watt-per-channel unit that heads up their new series of electronic components. The 390R incorporates a high degree of tonal and control flexibility. Bass and treble controls each have two switchable turnover points (bass at 200 or 400 Hz, treble at 2,500 or 5,000 Hz), as do the high- and low-cut filters (low at 18 or 40 Hz, high at 8 or 12 kHz). Additional front-panel controls include a mid-range tone control, two tape-monitor and dubbing circuits, and a tone-control defeat switch. Two banks of LED's indicate peak power levels.

The FM tuner section of the 390R has an IHF sensitivity of 1.7 microvolts (9.7 dBf); sensitivity for 50-dB quieting in stereo is 33 microvolts (36.5 dBf). Capture ratio is 1 dB, alternate-channel selectivity is 80 dB, and FM distortion in stereo is below 0.2 per cent. The receiver can be switched to operate on any of the power-line voltages in use throughout the world. Dimensions are 22⅞ x 6⅞ x 15¾ inches; weight is 49 pounds. Price: $775. Circle 132 on reader service card

NOTE: All product descriptions and specifications quoted in these columns are based on materials supplied by the manufacturer. Recent fluctuations in the value of the dollar will have an effect on the price of merchandise imported into this country. Please be aware that the prices quoted in this issue may be subject to change.
This 4-speed has something no other 4-speed has.

Stick shift fanciers. Economy car devotees. You're both going to love this one. It's called TWIN-STICK. Devilishly clever. And exclusively yours when you choose the Mitsubishi-built 1979 Dodge Colt or Plymouth Champ Hatchbacks. Here's how it works. Release the clutch and push the lever into ECONOMY mode, and you've selected the four-speed range designed to deliver optimum fuel efficiency. Choose POWER, and you get livelier performance. For running through the gears, you use the regular H-pattern lever. Averaging the mileage achieved in both POWER and ECONOMY ranges resulted in EPA estimates of 32 EST. MPG, 44 EST. HWY. with the 1.4 liter MCA-Jet engine. Use the EST. MPG number for comparison purposes. Your mileage may differ depending upon speed, weather and trip length. Actual highway mileage will probably be lower than the HWY. EST. Calif. estimates are lower.

TWIN-STICK is standard on the new 1979 Dodge Colt or Plymouth Champ Hatchbacks. You get the benefit of a total of eight speeds to play with. Which means you can get the optimum gear for just about any driving situation that comes along. City or country. Uphill or down. Or passing gas stations.

Mitsubishi cars and pickup trucks are sold in the U.S. by Chrysler Corporation.

CIRCLE NO. 36 ON READER SERVICE CARD
Every wire, every connection in your stereo system is a source of trouble, a chance for losses which can keep your system from achieving its full potential.

Introducing three new Vital Link wire sets from Audio-Technica—each a positive step toward ideal performance and trouble-free operation.

Start at the cartridge with the AT609 Head Shell Wire Set. Color-coded, insulated wires with 14 strands of pure silver Litz wire, terminated in corrosion-free gold terminals. No losses, no intermittents. Easy to install. Just $6.95 and worth every penny.

Between turntable and amplifier (or any two stereo components) use new AT610a High Conductivity Cable. A stereo pair 60" long, plus an independent ground wire with lugs. Each gold-plated plug is color-coded. Both resistance and capacitance are far below ordinary cables. Only $7.95.

For the most critical installations use our AT620 Superconductivity Cable Set. Two individual cables, each 48" long, with heavily gold-plated plugs. Inside the wire shield is a second conductive layer of polypropylene shielding. Special foam dielectric keeps capacity low, while superb conductivity is assured by using Litz-wire inner conductors with maximum surface area which reduces high frequency losses. The set lists for $29.95.

From phonograph cartridge to loudspeaker, each audio system is a chain, no stronger than its weakest link. Connect your system with Vital Link cables from Audio-Technica. At your A-T dealer now. Or write for our complete audio accessory catalog.

FINALLY: A VIDEODISC HITS THE MARKET

This month’s big news is that the videodisc has arrived as a commercial product. The world has waited close to ten years for the "new era in home entertainment"—the era of selectable TV programming—as ballyhooed in countless press conferences, demonstrations, and Sunday newspaper supplements. Now, finally, after a long stalemate during which a number of manufacturers have demonstrated ingenious (and incompatible) videodisc systems but never brought any to market, Magnavox is the first company to make both a videodisc player and a substantial catalog of feature-length discs available to the public.

On December 15 last year, four Atlanta department and appliance stores began selling the "Magnavision" system; the player itself costs $695 and the discs between $6 and $15, depending on content and length. According to industry sources, Magnavox intends to make about 20,000 players in the first year, with a decision on whether to invest in large-scale production to follow. Both Magnavox and MCA, the firm making and distributing the program discs, are betting heavily that the Atlanta marketing program will verify their predictions of an American public hungry for personally programmable video entertainment at modest cost—this despite the relatively lukewarm consumer response thus far to the one other form of selectable video available, the videocassette recorder.

The basic theory of the Magnavision system—and the corporate rivalries that have spawned at least four distinct and separate videodisc formats—has been detailed in these pages previously (see "Audio/Video News," August 1978, page 26). To review briefly the technical aspects of the system, Magnavision uses an optical approach to "reading" what might be described as an "outside-in" disc. A laser beam of minute power is directed through a series of prisms and mirrors up through the player’s transparent platter and the disc’s transparent-plastic outer layer to be (Continued on page 32)

Shown below is a much-simplified diagram of how the Magnavision videodisc system works. A laser beam passes through a lens which narrows the beam width. This beam is then reflected from and modulated by tiny pits impressed in the disc’s inner surface, back through the same lens to a beam-splitting prism that separates the input beam from the reflected light. The reflections pass finally to a photosensor that "reads" the pattern and converts it to audio and video.
Sophisticated simplicity.
The new Sansui TA rack-mountable receivers.

The new Sansui TA rack-mountable receivers offer both rack-mounting sophistication and all-in-one-unit simplicity. High performance and attractive pricing make them unmatched values.

The TA-500 receiver delivers a comfortable 50 watts per channel, min. RMS, both channels into 8 ohms from 20-20,000Hz, with no more than 0.05% total harmonic distortion. The DC power amplifier configuration, with wide frequency response and very low TIM distortion, ensures clean and true-to-life music reproduction.

The tuner section of the TA-500 performs better than most separates in a comparable price category. With a sensitivity of 10.8dBf (1.9μV IHF T-100) and a S/N of 75 dB, FM reproduction is of the highest quality.

Also available in the TA series is the new TA-300, providing 30 watts per channel, with no more than 0.06% THD, under the same conditions. Offering specifications and features that are highly competitive with other receivers in the power/price class, and with the extra benefit of rack-mounting convenience, the TA-300 receiver will surely be one of this year's most popular components.

To find out about this exciting Sansui innovation and many others, visit your nearest authorized Sansui dealer and ask him for a demonstration.
Audio/Video News . . .

reflected from its aluminum-coated inner surface and back to a photoelectric sensor. The sensor responds to the reflections that distinguish between the presence or absence of tiny "pits" (millions of them) pressed into the plastic disc's inner surface by means of an extrusion-molding process. These pits are digitally encoded representations of the screen image and the soundtrack that have to be decoded by the player's electronic circuits into suitable audio and video electronic signals. The disc revolves at 1,800 rpm, and one revolution corresponds to each "frame" of the video program.

If such a thing as a "visual metaphor" exists, the videodisc itself is it. Held in the hand, it appears to be a circular slice of opal, changing color with each new angle. Spinning on the player, it takes on some of the qualities of a Steven Spielberg UFO—shimmering, distant, apparently immaterial. The purely technical, workaday reason for this brilliance is the light-diffracting grid formed by the microscopically pitted inner surface of the plastic and its mirrorlike aluminum coating; it would be difficult to conceive of any other object whose sheer physical beauty contains more promise of an exciting two hours of entertainment locked inside.

In terms of picture quality, the Magnavision system reproduces as clear an image as cable-transmitted television programming. Its audio section, which is two-channel (stereo TV is coming!), has a bandwidth and dynamic range about as wide as a normal FM broadcast, and it can be connected to the auxiliary input of a receiver or amplifier for playback through wide-range electronics and speakers. The total impact of the system, particularly with well-produced and interesting source material (such as the Elton John performance that was shown at the New York demonstration), is closer to that of a movie showing than to ordinary television—evidence, perhaps, of the significance of high-quality audio to a convincing total presentation. Indeed, the two-hundred feature programs scheduled to be available shortly in disc format draw heavily from the ranks of older "blockbuster" feature films—Jaws, The Godfather, and The Ten Commandments among them. A fairly broad spectrum of other materials is represented too: children's cartoons, theater productions (The Man in the Glass Booth and A Delicate Balance), vintage sports events, and instructional programs on cooking, athletics, and self-improvement.

The Magnavision introduction does not by any means decide the issue of which is to be the dominant, accepted videodisc format. It is rather the first round in a commercial struggle for the favor of the American public, a struggle that may well prove to be more extended and bitter than the one that decided the standard format for the long-playing record. Industry observers feel that a combination of player cost, extent and nature of the software catalog, and large advertising budgets will resolve the question within the next several years. At least two other well-financed competing formats—from RCA and Sony—are technically ready for introduction at any time, though neither company has yet responded to Magnavox's opening move.

On an entirely separate topic, an isolated incident in a West Coast retail store has triggered a controversy over the flammability of open-cell foam loudspeaker grilles. As reported originally in the audio-trade press, the incident involved a foam grille ignited by a voice coil that had overheated due to a malfunctioning amplifier. Although the only immediate effect of the fire has been a re- call of foam grilles on two brands of loudspeakers—Quadraflex and TransAudio (the manufacturers are offering replacement fabric grilles)—the larger implications of the incident have set off a wave of rumors and uncertainty over the safety of foam grilles in general.

STEREO REVIEW's investigation of the question, which involved discussion with foam manufacturers, the retail store involved, Consumers Union, and Underwriters Laboratories, has disclosed the following:

1. The incident is the sole reported instance of a grille fire to have occurred since the introduction of open-cell foam as a grille material about eight years ago.

2. A substantial number of manufacturers, both foreign and domestic, manufacture foam grilles of various types, and therefore no single definitive statement on the flammability of foam grilles is possible. Further, no Underwriters Labs or federal standards for testing or specifying loudspeaker flammability exist. However, UL has recently opened an inquiry into extending UL flammability testing of stereo components to encompass all types of speaker grilles—both fabric and open-cell foam manufacturers, the retail store involved, Consumers Union, and Underwriters Laboratories, has disclosed the following:

3. The sequence of events that led to the fire in the West Coast incident is an unusual one in that voice coils generally open up safely long before reaching temperatures capable of igniting cones or grilles. This can further be effectively prevented simply by fusing the loudspeakers, a step that does not significantly affect speaker performance (and one that should be taken to protect speakers in any event). Plastic in-line fuse holders that are "pigtail" connected to the speaker wires are available from most radio-supply stores. The exact game values of fuses are best decided by the manufacturer. They may be given in the speaker's instruction manual, or they can be obtained by writing or calling the manufacturer of the speaker. By far the more likely cause of such a fire, however, would be a defective cable and dropped match, and of course reasonable caution should be exercised when using such items around speakers or any flammable material.

CIRCLE NO. 56 ON READER SERVICE CARD
We'd sell even more Dual turntables if they didn't last quite so long.

At a time when "planned obsolescence" is an unhappy fact of life, it may be reassuring to know that Dual turntables continue to be produced with the same dedication and manufacturing precision that has made Dual so highly respected throughout the world.

Dual turntables are made in the legendary Black Forest where meticulous craftsmanship remains a way of life. And the company is still owned and personally managed by the family that founded it more than three-quarters of a century ago.

But more than tradition is responsible for Dual's leading position in a lineup of some fifty competitive brands. The performance provided by Dual's precision engineering has always exceeded the demands of either the record or cartridge.

For example: the tonearms of every current model, including our least expensive one, are mounted in four-point gyroscopic gimbals, a design widely acknowledged as the finest suspension system. Bearings are machined and finished to specifications that exceed the demands of aerospace components. And frequently ignored problems such as those caused by resonance are solved by our exclusive anti-resonance filters. (Dual engineers have earned more than seventy international patents related to record playback equipment.)

The manufacturing process is of the same high order. For example: every fifth step is a quality-control check. Fully assembled turntables undergo separate and lengthy mechanical, electrical and acoustical examinations. Later, quality-control auditors open and recheck one out of ten packed and sealed models in order to inspect the quality of the quality control.

Perhaps this explains why such Dual classics as the 1009 and 1019 (produced in the early 1960's) are still in service. If you still own one of these models, you may find it's worth more in trade today than you originally paid for it.

If you insist on the finest in turntables—as we do—ask your audio dealer to demonstrate one of our new Duals. He will be pleased to do so. After all, reliability is as important to him as it is to you.

The Dual CS1237, illustrated, is priced at less than $180. Other Dual turntables are priced up to $440.

For the life of your records

United Audio, 120 So. Columbus Ave., Mt. Vernon, NY 10553
Amm/ Speaker Fusing

Q. I have a 15-watt unit with 3-channel amplifier. My speaker manufacturer recommends a 3-amp fuse for each channel. Why? John, Elmsford, N.Y.

A. Your question is much more complicated than it appears on the surface. First, as far as the point of safety, I agree with your speaker manufacturer's recommendation. However, there are additional factors to consider.

1. **Current Limiting:** A fuse with a rating higher than the current of the amplifier's power supply will limit the maximum current that can flow through the fuse, reducing the risk of damage.

2. **Safety Considerations:** In case of a power surge, a higher-rated fuse may not blow, allowing the damage to occur. A lower-rated fuse, however, may blow immediately, protecting the equipment.

3. **Power Supply Design:** Some amplifiers may require tighter current limits to prevent overloading, especially when used with high-output speakers.

4. **Speaker Protection:** Some speakers require a specific fuse rating to prevent damage. Always refer to the manufacturer's recommendations.

5. **Cost Considerations:** While it may be more expensive, a lower-rated fuse may save you from damage in case of an overload.

In summary, while a 3-amp fuse might not be strictly necessary, it is often recommended for safety and to prevent damage. Always consult the manufacturer's recommendations for the best fuse rating for your system.
AKAI's GX Head is guaranteed for over 17 years. What you're looking at is AKAI's exclusive GX Head. A technical departure from any other recording/playback head design on the market today. Its composition: glass and crystal ferrite. Imagine, if you will, a virtually wear-free head with a smooth glass face that doesn't allow dust to collect. A head that AKAI guarantees to perform for over 150,000 hours. That's over 17 years of continuous, superb play. It's a head that many audiophiles feel has set the industry's performance and durability standards. And you'll find it exclusively in AKAI cassette and reel-to-reel decks. All of which means that to get the clean, crisp sound your head deserves, use ours. AKAI's GX glass and crystal ferrite.

For details, see your AKAI dealer or write AKAI America Ltd., P.O. Box 6010, Emerson, CA 90244.

AKAI

You never heard it so good.
Why is the Fisher ST430 one of the world’s best-selling new speakers?

Probably not because of its looks (although it is unusually handsome). Probably not because of the Fisher name (although millions of people know and trust our reputation for quality). And probably not because of its reasonable $219.95* price (although you could spend a lot more and get a lot less).

No, what sells a speaker is sound, pure and simple. And the ST430 was created to sound better than any speaker in its class. How Fisher did it is the subject of this ad.

We began with our own Model 1050 10" woofer. By itself, it does a creditable job of reproducing bass. But we added our Model 800 passive bass radiator. It’s computer-tuned to the woofer and enclosure parameters, and effectively doubles bass output while reducing distortion, giving the ST430 low-end “sock” rarely found in a speaker of its size.

A Fisher Model 500 high-flux cone midrange driver delivers smooth, uncolored response in the all-important mid frequencies, and the Model 301 3" low-mass tweeter provides excellent dispersion and precise transient response for brilliant, “live” sound.

But just as important as the quality of the individual drivers in the ST430 is the way they are matched and interfaced. There’s no “textbook formula” for this phase of speaker design; it takes decades of experience, tireless experimentation, and hundreds of hours of evaluation with trained ears and sophisticated equipment to produce an optimum design. Most speaker companies simply don’t have these resources available (which accounts for the dozens of high-priced speakers on the market that can’t match the ST430’s sound).

So if you’re looking for outstanding value in a medium-sized, medium-priced speaker system, by all means listen to the Fisher Studio Standard® ST430. You’ll find it at selected audio dealers or the audio department of your favorite department store. A few minutes of listening will show you why it’s one of the most successful new speakers in Fisher’s 42 year history.

*Manufacturer’s suggested retail value. Actual selling price determined solely by the individual Fisher dealer.

New guide for buying high fidelity equipment. Send $2.00 with name and address for Fisher handbook to Fisher Corporation, Dept. H, 21314 Lassen Street, Chatsworth, CA 91311.

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chosen so that, whenever possible, the fuse gives out before the speaker voice coil. The trick, however, is to choose fuses that will not blow out on very loud "normal" program material but will nevertheless protect the various drivers in a system—all of which have different damage points.

Old-timers will also need to help in determining the proper fuse value for a speaker. Unfortunately, trial-and-error testing with a variety of pulsed, pink, and clipped audio signals is needed to arrive at optimum and practical fuse values. The fuse's response time and current rating are juggled to find the type and value that will protect the most fragile member of the system's driver complement without blowing out on loud material.

Incidentally, speaker manufacturers report that the majority of voice coils are burnt out by overdriven underpowered amplifiers (which provide a destructive clipped signal to the speakers) rather than by super-power amplifiers played loudly.

**FM Recommendations**

**Q.** I am trying to pick up a station situated north of me using a receiver with the following specifications: FM sensitivity (IHF), 1.7 microvolts; signal-to-noise ratio, 70 dB; alternate-channel selectivity, 65 dB; and capture ratio, 1.9 dB. There is an adjacent station located to the east and at a higher altitude that creates a lot of interference ranging from a slight background hiss to total takeover of the station I want, depending on the weather situation. What type of tuner or receiver do you recommend that I use in order to pick up the desired station without the interference?

**Shang-Wang Chang**

Modesto, Calif.

**A.** The tuner specifications you list are quite good, and it's anyone's guess as to whether any improvements in them would solve your problem. It is possible—but by no means certain—that a tuner with a higher alternate-channel selectivity rating may alleviate the interference problem, but such tuners tend to be quite expensive. A much cheaper and sounder approach would be to invest in a high-gain FM antenna (the more elements, the better). If possible, it should be installed on a high tower with a rotator. Since your two stations are at an angle of 90 degrees to each other, it should be possible to orient the antenna to give maximum discrimination against the unwanted signal while receiving a usable signal from the other station.

**System Lisp**

**Q.** I have a high-power integrated amplifier, feeding a pair of good-quality, floor-standing speaker systems. When played at, say, 40 watts, some DJ's sound like they lisp. Which product needs replacing? Any idea?

**Timothy Long**

Brooklyn, N.Y.

**A.** Assuming that the DJ's in question are not in need of an improved dental-plate adhesive (even when they are played at 40 watts) and that there isn't something wrong with their microphones or the way they use them, I'm at a loss to explain a "lisp." However, if I assume that some other listeners (or speech therapists) would describe what you are hearing as excessive sibilance, then I have some ideas on the matter.

Harsh "sss" sounds in reproduced vocal music or speech can occur for any of a very large number of reasons. The list of possible causes that follows is probably not complete, but it should provide clues as to where to look for the source of your high-frequency breakup problem—for that is what it probably is.

At the record-playing end of things, lots can go wrong. For example, right at the beginning, a fault may develop somewhere in record-mastering and/or production steps that will ultimately be heard as high-frequency breakup. Or your phonograph cartridge may be mistracking because of some defect in it, your using too low a tracking force, or some fault in the record player itself.

There isn't too much that can go wrong in your amplification equipment to cause such high-frequency problems except, possibly, overload of the magnetic phono-input circuits. (A high-output cartridge playing a "hot" record feeding a phono input with inadequate dynamic range can sound spitty or "raspy.")

At the speaker end of things, a defective or peaky tweeter, or excessive high-frequency boost from your amplifier or speaker-level controls, can also cause a spitty quality in the sound. And, finally, to return to your DJ, your FM tuner may need alignment, the specific station(s) you listen to may be overmodulating, or your reception may be troubled by intermodulation products.

Listen to a friend's system to determine if his DJ's are troubled by the same sort of speech impediment. In any case, your problem is probably a rare one; certainly my throat is free of such defects.

**Two Kinds of Time Delay**

**Q.** I've just finished reading Peter W. Mitchell's October feature article on time delay. Why weren't there any comments on the time-delay-compensated speakers available from Leak, B&O, Technics, and others? Certainly they must be worth discussing.

**Carlin Carr**

New York, N.Y.

**A.** The term "time delay" has confused Mr. Carr. The electronic accessory devices listed and described in the October issue were designed to add time delay to program material fed to the back channels of a four-speaker system as a means of simulating the naturally delayed reverberant sound energy normally reflected from the walls and ceilings of an actual concert hall. Time-delay-compensated speaker systems, on the other hand, are physically and electrically designed to eliminate the differences in time of arrival at the listener's ear of parts of a signal reproduced separately by the various drivers of the system. Obviously, the two techniques have different purposes, achieve their ends in different ways, and share nothing except the term "time delay," if that. For that reason, many of the manufacturers of such speaker systems prefer such descriptions as "time-compensated" and "phase-coherent."
Audio Basics
By Ralph Hodges

TAPE BIAS: A POPULAR VIEW

In 1962 the eminent Marvin Camras, then editor of the Institute of Radio Engineers' Transactions on Audio, wrote a brief editorial on the role of bias in tape recording. He began by characterizing the popular conception of bias in these terms: "... the high-frequency bias shakes up the magnetic domains and loosens them until they can be molded by the audio signal." He then plunged deeply into the various then-current engineering theories and models dealing with the precise action of bias, exploring them this way and that, rejecting hits of some and adopting parts of others, until he came to a grand conclusion: "... the high-frequency bias shakes up the magnetic domains and loosens them until they can be molded by the audio signal." Seventeen years later we flatter ourselves that we have arrived at a somewhat better understanding of bias than that—or at least we have come to appreciate its complexity and to honor that complexity with an appropriately complex technical description. Nevertheless, for the home tape recordist who feels he wouldn't dream of suggesting that it is a standard element of bias, it is instead a popular view, designed to give us enough of a glimmer as to what's going on to treat bias with appropriate respect and appreciate its benefits. Here's what Mr. O'Kelly has to say about bias:

"Bias is a four-letter word that is used more often than it is understood. It appears on most of today's cassette decks associated with a switch bearing the labels "Fe" or "Normal," "High," "CrO2," "FeCr," and so forth. Some decks' switches have two positions, others have three. What they are all trying to do is to provide several fixed bias settings to accommodate the different types of tape available, because different types need different amounts of bias.

"Bias is a steady signal at such a high frequency that it cannot be heard. It is usually at least five times higher than the highest frequency a tape deck can reproduce. If a cassette recorder can handle an audio signal as high as 20,000 Hz, the bias should be at least 100,000 Hz. Increasing the bias (as is called for by certain types of tape) does not raise its frequency; it raises the strength or amplitude of the bias. Its frequency stays the same.

"Although the bias signal cannot be heard, it helps those signals that can be heard by eliminating some of the distortion in the tape-recording process (bias is present only during recording, not during playback, and the position of a bias switch—provided it controls only the bias—is irrelevant when a tape is played).

"The signals that music or voices set up in a magnetic tape or recorder will not be the same as combinations of sine waves. These sine waves travel up and down in positive and negative excursions. Curve 1 shows a single complete positive-and-negative "cycle" of a sine wave. As the wave is passing from positive to negative (or negative to positive) it crosses the zero point shown in the center of the curve. At this zero point, distortion can occur when recording on tape because the tape does not become properly magnetized there (see curve 2). Technically, we might say that the tape-recording medium is nonlinear for weak values of the recording signal. "Like the audio signal, bias is itself a sine wave. But since it has so many more cycles per second than any audio signal (at least five times more, remember), when the audio signal is mixed with the steady bias signal there is always a strong element of bias present to 'influence' the tape magnetically even when the audio waveform is at a very weak point or actually at zero. The distortion that would otherwise occur is greatly reduced when the proper amount of bias signal is added (see curve 3). The proper amount is essential, because too little bias would not get rid of enough distortion and would permit the high frequencies recorded on the tape to be exaggerated as well; too much bias would get rid of distortion as well as much of the high-frequency content of the signal that we want to keep. As it happens, different tapes need different amounts of bias owing to the differences in their magnetic characteristics."

Thank you, Mr. O'Kelly. Even the best tape can and does sound bad when the amount of bias signal applied to it is too great or too little. High frequencies fade on the one hand and increase on the other, and eventually the point is reached where distortion can be heard (it can be measured as increasing at a much earlier point). In the cassette format, tapes that we tend to consider as providing the highest level of performance generally require the strongest bias signal. They are hard to magnetize to begin with, and hence they can be thought of as being more resistant to the effects of bias. The high-performance tapes of the future, such as the metal-particle tapes discussed elsewhere in this issue, will require more bias still—even, perhaps, challenging our technical ability to apply such a large amount of signal to the tape that we want to keep.

Bias should not be considered essential to tape recording. It isn't. You could disable the bias oscillator in a tape recorder (or leave it out entirely, as has been done in some toy recorders) and still make a recording of, say, a speaking voice, and on playback you would be able to make out the words amidst the rasp of distortion and the rush of tape noise. But the experience would not be a pleasant one.

The first magnetic recorders employed no bias, and they were so unsatisfactory as to be useless except as stepping stones for further research. Very soon it was discovered that a strong d.c. bias—not a high-frequency a.c. bias such as we use today—applied to the tape along with the signal improved matters considerably. Unfortunately, d.c. generates an enormous amount of noise in the tape-recording process, and although recorded voices could be made intelligible, they were still in danger of being buried in hiss. Finally, the beneficial effects of a.c. high-frequency bias were discovered and applied to recording equipment with enthusiasm. And that development essentially set tape recording on the road that has led to its present refinement.

The three curves show (1) a normal sine wave, (2) a sine wave with distortion at its zero-axis crossing, and (3) the effect of adding a high-frequency bias signal to the audio signal at the time it is applied to the tape.
February and March are be-kind-to-your-records/check-your-stylus months...

**FREE! Stylus inspection and cleaning wherever you see this sign:**

A cartridge is forever—your stylus isn't! Even though you can't see stylus wear, it affects the performance of your entire hi-fi system. A worn stylus could even ruin your records! We urge you to have your stylus professionally inspected no less than once a year.

During February and March, audio dealers displaying this sign will have trained personnel and the equipment necessary to examine your stylus for wear or damage. They'll professionally clean your stylus and tell you if it's time to replace it.

Stylus replacement is very simple and requires no tools or special skills. To remove, grasp the stylus grip between the thumb and forefinger. Gently withdraw the stylus by pulling it forward out of the cartridge.

To replace, grasp the stylus grip between thumb and forefinger and insert into stylus socket. Press the stylus into the socket until the molded housing of the stylus touches the cartridge case.

To prevent damage to the stylus tip or shank, be careful not to allow the finger to slip off the stylus grip.

NOTE: Stylus guard when present should be in "down" position when replacing stylus.

**FREE!**

**stylus cleaning brush**

A practical and safe way to clean your stylus! Synthetic bristles with the right amount of stiffness to remove dust and lint buildup efficiently without damaging the stylus tip. Free when you have your stylus inspected at a participating Shure dealer.

**Bring your cartridge back to original specs**

The performance of your cartridge depends largely on the stylus assembly and only a genuine Shure replacement stylus can restore your cartridge to its original performance! Give your record collection the protection it deserves, insist on the words "This Stereo Dynetic® stylus is precision manufactured by Shure Brothers Inc." on the box, and the name SHURE on the replacement stylus you buy. Don't settle for substitutes—your record collection is too valuable!

---

**Replacement styli by SHURE**

Genuine Shure replacement styli are available for virtually all Shure stereo magnetic cartridges—whatever their age. If your dealer doesn't have yours, write to us.

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Manufacturers of high fidelity components, microphones, sound systems and related circuitry.

CIRCLE NO. 44 ON READER SERVICE CARD
NAKAMICHI 1000II, Front-access 3-head 2-motor Stereo Cassette Deck.

THD: Less than 1.5%
Wow & Flutter (WRMS): Less than 0.05%
S/N Ratio (Dolby on): 65 dB
Frequency Response (CrO₂): 35-20,000 Hz
Double Dolby™ Noise Reduction System, plus Nakamichi N/R System
MPX Filter
Separate Bias, EQ Controls
Solenoid Logic Controls
Auto Rewind, Memory Rewind
Playback Pitch Control
Extended-Range VU Meters
Azimuth Control for Head Alignment
Screwdriver-calibrated Dolby Circuit
Extra Input for Premixed Program Sources

PIONEER CT-F1000, Front-access 3-head 2-motor Stereo Cassette Deck.

THD: Less than 1.5%
Wow & Flutter (WRMS): Less than 0.05%
S/N Ratio (Dolby on): 64 dB
Frequency Response (CrO₂): 30-17,000 Hz
Double Dolby™ Noise Reduction System
MPX Filter
Separate Bias, EQ Controls
Solenoid Logic Controls
Memory Rewind
Playback Pitch Control
Extended-Range VU Meters
Hand-calibrated Dolby Circuit

$1,650*
$650*
Either they’re charging too much, or we’re charging too little.

Kenwood KT-917 Stereo FM Tuner

© 1979 Marantz Co., Inc. 3 subsidiary of Superscope, Inc. 20925 Nordhoff St., Chatsworth, CA 91311. *Dolby is a trademark of Dolby Laboratories, Inc. *Manufacturer’s suggested retail prices are informational only. Actual prices set by authorized dealers.
the lowest possible distortion in actual use as well as under laboratory conditions. To this end, it incorporates a very sophisticated and costly automatic-tuning system called the "Distortion Detection Loop" (DDL). To the user, it appears to work like an automatic-frequency-control (AFC) mechanism, despite the fact that the detector is different. In other words, the DDL is an AFC system that operates by using the second-harmonic distortion of its own internally supplied signal, rather than detector d.c. output, as an indicator of correct tuning. Tuning aids aside, the circuits of an FM tuner, which is as accurate as a quartz crystal, is inherently the most linear form of FM demodulator. For best signal-to-noise ratio it should operate at a relatively low frequency, and in the KT-917 the 10.7-MHz i.f. frequency is transformed down to 1.96 MHz by a second conversion stage before detection of the selective elements in the 10.7-MHz i.f. amplifier are Surface Acoustic Wave (SAW) filters. These are a form of highly refined ceramic filter which has superior group-delay characteristics compared with the inexpensive ceramic filters used in most FM tuners. The number of SAW filters in the set is controlled by the band-width switch; one filter is used for wide, two for normal, and four for narrow.

The front end of the Kenwood KT-917 uses seven cascaded tuned circuits for maximum selectivity and image rejection. The nine-section variable capacitor is the largest component in any tuner that we know of. The channel-center meter's center reading is zero; ideally, this occurs when the signal is in the center of the i.f. passband. However, discriminators are not necessarily linear, and they also may not be tuned accurately to the center of the i.f. passband (which in itself is not symmetrical). The result is that minimum distortion is rarely obtained at the same tuning point that gives a zero d.c. detector asymmetry of that type in any tuner that we know of (most use no more than five sections). Two sections are used in the local oscillator; one of these tunes the oscillator and the other tunes a buffer amplifier that isolates the oscillator from the rest of the tuner. The mixer is also unusual in being a double-balanced circuit with four Schottky diodes for maximum immunity to overload from strong signals. The KT-917 is a relatively large, heavy tuner. The slide-rule dial is calibrated every 200 kHz, and a large knob at the center of the panel operates a very smooth flywheel tuning mechanism. Above the dial are four red lights that glow to indicate the operating mode of the tuner (muting, auto mono/ stereo switching, stereo reception, and activation of the DDL circuit). The DDL light comes on a few seconds after the tuning knob has been released when a station is tuned in. A group of small green lights forms a horizontal line whose length is proportional to the selected i.f. bandwidth. At the upper left of the dial area are two large illuminated meters. One reads signal strength directly in dBf and is calibrated at 0 to 90 dBf intervals from 0 to 90 dBf. Next to it is a conventional channel-center tuning meter. At the right of the dial is another meter that can be switched by a button on the front panel to read either modulation percent (from 0 to 120 percent) or multipath distortion.

Across the lower portion of the panel are three small knobs that control the output level, the muting threshold (with positions for off, 20 dBf, and 40 dpf), and the wide/narrow bandwidth (normal, narrow, wide). To the right of the tuning knob are three small pushbuttons: a zimmer (for the dial lights), an antenna switch that connects either of two sets of antenna inputs to the tuner, and the meter switch (deviation or multipath). The remaining control is a knob labeled "Monitoring Control"; it is actually a mode selector with positions for mono, auto, and stereo only.

On the rear of the tuner are coaxial inputs for two 75-ohm antennas (A and B). There are also two sets of binding-post terminals for antennas B, for both 75- and 300-ohm systems. The front-panel switch selects either the A or the B system, giving considerable flexibility in the installation of the tuner. There are two sets of audio outputs, one of them at a fixed level (nominally 0.75 volt) and the other adjustable by the front-panel control, which may have been called the "level control." There are also outputs for driving vertical and horizontal oscilloscope inputs to display multipath distortion. The Kenwood KT-917 is 184 inches wide, 184 inches deep, and 69 inches high. It weighs 33 pounds. Price: $1,000.

Laboratory Measurements. From the outset it was obvious that we would not be able to confirm all the claims of the technical specifications of the Kenwood KT-917, because our Sound Technology signal generator is rated at 0.1 per cent distortion and stereo separation of 50 dB, whereas the tuner rating is only 40 dB for separation and as low as 0.02 per cent for distortion. Although we know the generator to be much better than our measurements in that range would be of doubtful validity. We also knew that the generator's intrinsic noise level was higher than the -90 dBf claimed for the tuner. Because the i.f. bandwidth can affect many of a tuner's properties, we had to test the KT-917 three times, using each of the bandwidth settings. With normal bandwidth, the measured IFH usable sensitivity was exactly the rated 10.3 dBf (it was 10.3 dBf in the narrow and 70 dBf in the wide). The 50-dB quieting sensitivity was 17 dBf (mono) and 36 dBf (stereo) for all three bandwidths. The signal-to-noise ratio was 84 dBf in mono and 70 dBf in stereo, again for all three bandwidths. As expected, the distortion was a function of bandwidth. The normal and wide modes gave identical readings of 0.064 per cent in mono and 0.062 per cent in stereo. These are approximately the residual distortion levels of our signal generator. (The few occasions we have measured lower distortion have been due to cancellation between the distortion of the generator and that of the tuner.) With narrow bandwidth, the mono and stereo distortion readings were 0.09 and 0.17 per cent. Channel separation is also a function of bandwidth—to some extent. In measuring separation, we encountered a peculiarity that may have been a property of the test sample (a very early production model). When the signal was tuned in the normal manner, the channel separation range of 30 to 43 dB, depending on bandwidth. These are perfectly good figures (the FCC requires only 30 dB from the broadcast stations), but not as good as claimed or at least 35 dB as we would expect from the measured figure. (Continued on page 46)
Only the most sophisticated research and development in this industry could create

Two sources of perfection in stereo sound!

Pickering’s patented Dustomatic Brush keeps records free of dust and damps low frequency tonearm resonance.

It takes real effort and skill to become the acknowledged leader in the industry, and even more to stay ahead.

Pictured above are just a few of the advanced electronic devices that Pickering employs in product research and custom-designed development. At left above, the XYY plotter on Pickering’s Real Time Analyzer and, at the right above, Pickering’s remarkable Scanning Electronic Beam Microscope capable of 160,000 times magnification.

Pickering’s engineering department is responsible for creating these two outstanding cartridges that, as one reviewer stated: “The XV-15/625E offers performance per dollar; the XSV/3000 higher absolute performance level.”

Both the XSV/3000 with its trademarked Stereohedron Stylus tip for the least record wear and the longest stylus life achievable so far... and the XV-15/625E... represent best buys at their price levels. Audition them today at your Pickering Dealer.

For further information write to Pickering & Co., Inc., Dept. SR, 101 Sunnyside Blvd., Plainview, N.Y. 11803
through electronic circuits. Two of them turn the motor, at either 3 31/2 or 45 rpm, and adjacent red LED's show which speed has been selected. Touching the STOP contact shuts off the motor and touching REJECT causes the arm to lift and return to its rest before the motor is shut off (this also happens automatically at the end of a record). This is the only automatic feature of the AF 877, since the initial cueing of the pickup must be done manually. Next to the two on contacts are small knobs that vary each speed, individually, over a nominal range of ±3 per cent. The speed is monitored by a linear array of nine LED's instead of the usual stroboscope markings. The center LED lights when the speed is exact, and the others come on at 1 per cent intervals over a range of about ±± 4 per cent about the nominal value.

Forward of the speed indicator is the tracking-force scale. This unique Philips feature has been used on some of their earlier record players. A mechanism built into the arm-rest post is so arranged that whenever the arm is on its rest, the scale shows the force that would be exerted on the record surface. The tracking force is adjusted in the usual manner by turning the threaded counterweight at the rear of the arm (except that, unlike other tone arms, no initial balancing is required). The scale is calibrated from 0.5 to 3 grams at intervals of 0.25 gram.

The Philips AF 877 is furnished on a handmade brown base with a hinged, tinted-plastic dust cover that remains open at any angle. With the cover closed, the record player measures 16 1/2 x 13 3/4 x 5 1/2 inches; it weighs 12.8 pounds. Price: $239.95.

Laboratory Measurements. We tested the Philips AF 877 with a Sonus Red Label cartridge installed in its arm. The installation was simple and straightforward because of the open design of the head shell and the easy-to-use plastic positioning jig. The tracking error was less than 0.4 degree per inch for record radii from 2.5 to 6 inches (this is about as low as can be measured with a protractor). The tracking-force gauge of the AF 877 was very accurate when checked against our balance-type gauge. When the tip of the indicating line just reached the scale line, the error was less than 0.1 gram (usually much less) over the entire 0.5- to 3 -gram range of the scale.

The arm and cable wiring, measured at the end of the signal cables, had a very low capacitance of 70 picofarads. The arm mass, including the cartridge, was only 16.5 grams, indicating a net effective mass of only 11 grams for the arm (one of the lowest figures we have measured on any tone arm). With the very compliant Sonus stylus, the arm resonated at an ideal warp-insensitive frequency of 10 Hz with an amplitude of only 3 to 4 dB.

The flutter was 0.09 per cent in an unweighted peak (DIN) measurement and 0.07 per cent unweighted rms (JIS) using a DIN 45-545 test record. Both figures, though slightly higher than the Philips specifications of 0.05 and 0.03 per cent, represent good turntable performance. The major flutter components were in the 15- to 18-Hz region. Rumble was very low, -34 dB unweighted and -66 dB with ARLL weighting. The latter ranks with the lowest rumble readings we have ever obtained, being matched by only a couple of very expensive turntables. The principal rumble frequency was 8 Hz, with a much smaller component at 30 Hz.

The antiskating dial calibration was essentially correct for the elliptical stylus on the Sonus cartridge. The outward drift of the arm during its descent under the control of the cueing lift was very slight, usually no more than a groove width. The automatic shut-off cycle, from the time the REJECT contact was touched until the motor shut off, required 12 seconds. The operating speed was essentially accurate to within ±0.1 per cent, although some care was needed to set the vernier speed control to the center of the small range (about ± 0.3 per cent) through which the center LED remained lit.

The isolation of the pickup from base-conducted vibration was very good. Not only was the Philips AF 877 much better than most direct-drive turntables in this respect, but it was also noticeably better than the average belt-driven turntable. Shaking the turntable or its support while playing a record rarely caused the pickup to lose contact with the groove; however, it did tend to cause a transient "wow" (an effect we have noticed on earlier Philips record players using the same type of suspension). With normal handling, there is no tendency for this to occur.

Comment. The Philips AF 877 is a refreshingly "different" record player. And, best of all, its features are functional and genuinely useful rather than "gimmicky" in nature. Despite its unconventional aspects—or perhaps because of them—we found the AF 877 to be unusually easy to set up and operate. As our tests showed, its performance, without regard to its features, ranges from good all the way to outstanding.

The low-mass tone arm proved its worth when we played our growing collection of severely warped records. Very few conventional tone arms can play any of these discs without jumping out of the groove; the Philips managed to play all of them, with no more than a brief "wow" or "thump" as its stylus passed over the crest of a warp. The AF 877 was almost unique among the integrated record players we have used in its ability to "stay with" badly warped records. The touch controls worked very well (similar controls have been used on other Philips record players for some years). They are powered from a separate power supply that is always on when the player is plugged into a "live" outlet (there is no power switch on the AF 877), so perhaps it would be best to plug the unit into a switched outlet on an amplifier or receiver. However, we left it energized for long periods of time with no problems (the standby power consumption is negligible). The built-in stylus-force gauge is such a simple and effective device that we wonder why no one else has adopted it. It is apparently more accurate, and certainly much easier to set up, than most conventional balance-and-adjust systems, if for no other reason that there is no ambiguity about the arm-balance.

(Continued on page 52)
THE BETTER YOUR HIGH FIDELITY SYSTEM, THE NOISIER IT WILL SOUND.

It's a strange, but true fact—the better your hi fi equipment, the more hiss, hum and rumble you will hear. Just as a quality high fidelity system provides richer music through its wide frequency response and greater dynamic range, it also has a better ability to reproduce irritating flaws contained in the source material. You can make a major improvement in your system by eliminating much of the hiss, hum and rumble that's inherent in the source material itself.

Many noise reduction systems have some success, but only one can silently remove 10dB of the hiss, hum and rumble that is contained in unencoded records, tapes and FM. That one system is the Phase 1000 Series Two.

As you reproduce recorded music, the 1000 Series Two analyzes the millions of incoming waveforms to find signals similar to a sine wave—a highly "correlated" waveform with periodic repetition. Like a guitar note. Or a piano note. Or a vocal note.

The 1000 Series Two electronically analyzes the signal to find fundamental musical tones, and their harmonics. Where these are missing, there is no music. The 1000 can then safely assume there is no other single component you could add, regardless of the quality or price of your hi fi system. The 1000 is an improved version of the Phase Linear Autocorrelator, row with second generation, low noise, high slew rate integrated circuitry for quiet, distortion-free performance. It's easy to utilize with any stereo receiver, integrated amp or preamp/amp, and is a valuable addition to Dolby® and dbx systems. (These systems are very effective in preventing noise from being added in the re-recording stage, but don't reduce noise in the original recording.)

When you play conventional records through the 1000, you cut tape hiss. (Expensive direct-to-disc records are cut directly onto a master, primarily to avoid the "cutting" stage with its inherent hiss.)

The Phase 1000 Series Two may very well improve your sound more than any other single component you could add, regardless of the quality or price of your hi fi system. The 1000 is an improved version of the Phase Linear Autocorrelator, row with second generation, low noise, high slew rate integrated circuitry for quiet, distortion-free performance. It's easy to utilize with any stereo receiver, integrated amp or preamp/amp, and is a valuable addition to Dolby® and dbx systems. (These systems are very effective in preventing noise from being added in the re-recording stage, but don't reduce noise in the original recording.)

When you play conventional records through the 1000, you cut tape hiss. (Expensive direct-to-disc records are cut directly onto a master, primarily to avoid the "cutting" stage with its inherent hiss.)

Ask your Phase dealer to play any record, tape or tuner through the 1000 Series Two. Then listen to the music. Not the noise.

Phase Linear
THE POWERFUL DIFFERENCE
condition. Over the years, we have come to expect (but never to accept) a number of clicks and other mechanical sounds during the cycling of any record player with some automatic features. The virtually total silence of the AF 877 came as a welcome surprise—it appears to be as quiet mechanically as it is electroacoustically.

The "Direct Control" feedback system appeared to work well, and we found no undesirable side effects from its use. Its ability to restore correct speed under the added load of a record-cleaning brush was dramatically demonstrated by the way the speed-indicator LED's dropped to their lower limit when the brush was pressed firmly against the record and then returned to a center reading in a couple of seconds. The torque of the drive system appears greater than that of most belt-driven turntables.

Philips has done a fine job of engineering value as well as performance into their new record players. The AF 877 is not only one of the better semi-automatic record players we have seen, but it is priced very competitively. According to the manufacturer, the same basic quality and drive mechanism are incorporated in the lower-price models of the new line.

Circle 135 on reader service card

**Design Acoustics D-12A Speaker System**

*Today*, some six years after the introduction of their D-12 speaker, Design Acoustics has replaced it with the D-12A, a totally redesigned system whose major kinship to its predecessor is its dodecahedral (twelve-sided) construction. Like the D-12, the new D-12A is virtually omnidirectional, radiating energy through most of the sphere surrounding the speaker. However, in the physical distribution of its drivers, and in their individual characteristics, the D-12A is very different from the D-12.

The D-12A is about 25 inches in diameter and is mounted on a stubby chrome pedestal that raises its top about 26 inches from the floor. Most of its visible surface is finished in walnut-veneer particle board accented by circular black grilles on the pentagonal faces of the dodecahedron (this speaker could be an excellent educational aid for the student of solid geometry!). The top surface of the system is solid and is thus able to support a lamp, vase, or similar object.

The bass frequencies are radiated by two 8-inch woofers. They face generally forward, their individual characteristics, the D-12A is about 25 inches in diameter and is mounted on a stubby chrome pedestal that raises its top about 26 inches from the floor. Most of its visible surface is finished in walnut-veneer particle board accented by circular black grilles on the pentagonal faces of the dodecahedron (this speaker could be an excellent educational aid for the student of solid geometry!). The top surface of the system is solid and is thus able to support a lamp, vase, or similar object.

The bass frequencies are radiated by two 8-inch woofers. They face generally forward, with amplifiers delivering from 25 to 200 watts per channel. The D-12A weighs 70 pounds, and special provisions are available for hanging it from the ceiling. Price: $675; in the optional rosewood finish, $850.

The crossover frequencies of the three-way system are 650 and 2,000 Hz.

The system's binding posts are located underneath the pedestal on a formed-plastic panel which is part of one of the lower rear facets. There are also three toggle switches that adjust the levels of the bass, mid-range, and treble drivers over a ±2 dB range, a 5-ampere fuse to protect the speaker against excessive power levels, and an additional pair of toggle switches that convert the speaker's spherical radiation to a pattern covering only the forward hemisphere. It does this by switching off the pairs of rear-facing drivers (two mid-range and two tweeters).

The D-12A has a nominal impedance rating of 4 ohms and its power response is rated at 30 to 18,000 Hz ±2 dB. It is suitable for use with amplifiers delivering from 25 to 200 watts per channel. The D-12A weighs 70 pounds, and special provisions are available for hanging it from the ceiling. Price: $675; in the optional rosewood finish, $850.

**Laboratory Measurements.** Since we use a specially calibrated Design Acoustics D-12 as our omnidirectional reference system, we were able to measure and listen to the new D-12A in a side-by-side comparison with the older version.

The composite and corrected frequency response of the D-12A, combining a close-miked bass measurement with a reverberant-field measurement at mid and high frequencies, showed a slightly rising output above 6,000 Hz (to a maximum of +6 dB at 15,000 Hz) and below 200 Hz (to +4.5 dB at 65 Hz). When we switched the dispersion from spherical to hemispherical, the high-frequency response flattened out considerably, since the rear radiation was no longer being reflected from the wood-panel wall behind the speaker and contributing to our measurement in the reverberant field of the system. In the hemispherical mode, the response was within ±2.5 dB from 100 to 20,000 Hz (the bass response was not affected by the dispersion change).

Our bass-response measurement must be interpreted properly, however. The Design Acoustics D-12A, like any other rear-radiating, dipolar, or omnidirectional system, is quite dependent on room acoustics and speaker placement for optimum results. Normally the speakers will be installed at an unpredictable distance from a back wall (probably in the range of 1 to 3 feet) and an equally uncertain distance from a side wall. These distances can have a significant effect on the lower mid-range and bass response. We measured the speaker's response with 1- and 3-foot spacings from the back wall, with little difference in the reverberant-field measurement. There was some effect on the audible balance of lower and middle frequencies, however. Since these effects will be different in every room, it is unwise to take the measured low-frequency response too literally. It indicates the potential bass performance of the speaker, but the actual response in any specific room and at any given listening position can be determined only by experiment. We found little difference in the bass response when the plastic plug was removed from the port. We were told that this was a minor fault in the woofers in our early test samples. The current systems provide a bass increase of up to 3 dB in the 20- to 50-Hz range when the plug is removed.

When we measured the old D-12 in the same manner, we found it to have a somewhat smoother overall response, sloping slightly downward with increasing frequency, and with maximum output in the 70- to 80-Hz range. It could be described as having slightly less output at the extreme low and high frequencies. (Continued on page 54)
Cassette recording takes a giant step forward with the new series of JVC cassette decks. Each is designed to give you everything you need to get the most out of any tape. And there are totally new features to help you make better-sounding cassettes.

**Exclu. Spectro Peak Indicator System.** With almost recording studio vigilance, 25 instant-responding LED indicators offer fail-safe protection against distortion produced by tape over-saturation. For the first time, you can constantly visually monitor the levels of five low-to-high musical frequency ranges. Then, on playback, the Spectro Peak Indicator actually lets you see how accurately the deck has performed.

**Expanded Dynamic Range and Better Noise Reduction.** Our Super ANRS circuitry applies compression in recording and expansion in playback to improve dynamic range at higher frequencies. So distortion is eliminated in sudden high peaks of any musical program. Super ANRS also reduces tape hiss by boosting the deck’s signal-to-noise ratio by as much as 10dB over 5000Hz.

**New Head Design.** Our refined Sen-Alloy head gives you the sensitive performance of permalloy head construction, combined with the extreme longevity of ferrite, for bright, full-sounding recordings.

**Get the most out of any tape**
Because whichever type you select, you’ll extract the most from it with our special recording equalizer circuit that lets you “fine tune” the high frequency response of the deck to the exact requirements of the tape. These innovations alone set JVC cassette decks apart from all the others. Then, when you consider our other refinements, like precision-ground capstans, gear/oil-damped cassette doors, multi-peak LED indicators, independent drive mechanisms, plus top performance specifications, you can understand why we say that JVC gives you more of what other decks wish they could. Visit your JVC dealer and you’ll hear why.
The tone-burst response of the Design Acoustics D-12A is illustrated at (left to right) 100, 1,300, and 10,000 Hz. The upper trace is the input signal.

...quencies than the D-12A, but with a slightly smoother overall response.

The bass distortion of the D-12A was unusually low—and might be even lower with the current woofers. At drive levels of either 1 watt or 10 watts into its 4-ohm rated impedance, the distortion was under 1 per cent (and typically about 0.3 per cent) down to 50 Hz. It increased only gradually at lower frequencies, to 3 per cent at 30 Hz and 10 per cent at 20 Hz (1 watt). At a 10-watt level, the distortion was about 7 per cent at 30 Hz. The impedance of the D-12A was approximately as rated, measuring about 5 ohms at most frequencies and reaching a minimum of about 3 ohms at the bass resonance of about 30 to 40 Hz. However, the impedance drops to only 3 ohms at 1,500 Hz, so care should be taken to use an amplifier that can operate properly into that impedance. We measured a sound-pressure level of 83 dB at a distance of 1 meter from the front "point" of the cabinet when it was driven by 2.83 volts of random noise in the octave centered at 1,000 Hz. In this respect, it was similar to some of the better acoustic-suspension systems despite its ported design. When examining the tone-burst response of the D-12A, we had to use close microphone spacing to minimize interference from adjacent drivers. Generally speaking, the tone bursts were reproduced well, with no serious ringing or aberrations despite the multiple drivers.

Comment. We found our listening tests of the D-12A to be at least as interesting and informative as our measurements. This was partly because we had previously found the original D-12 to be an exceptionally fine-sounding system and were curious to hear how the D-12A compared with it.

The first installation of the D-12A's was in an acoustically "hard" room, where we found the sound too bright for our taste. The location of the D-12A is a bit more obvious to the ear, though not nearly to the extent shown by conventional forward-facing speaker systems.

Although we normally prefer not to become involved in matters of styling and visual aesthetics, it is unavoidable with the D-12A. We find it strikingly handsome, and it is one of the few recent top-quality speakers as pleasing to our eyes as to our ears. (In this case, the "our" includes my wife also!) It is deceptive-ly small looking, and hence does not visually dominate even a fairly small room. However, anyone attempting to pick this speaker up will be convinced that it is a true heavyweight (or at least a "light heavyweight").

A final word on how it sounds compared to the D-12: it is obviously a very close relative, but by no means a twin brother. The wide bandwidth and the smooth and well-dispersed sound of the older speaker are very much present in the D-12A, but there is a slightly distant quality (compared with the D-12) that we believe D-12A is a hands-down winner, and that of our regular speakers (very good acoustic-suspension systems with excellent forward dispersion) was unmistakable. No doubt most people will choose one or the other type of sound. We tend to agree with George Sloes, designer of the Design Acoustics systems, who conjectures that the optimum radiation pattern for any speaker may be a function of the type of music being heard and (as we found out) the acoustic properties of the listening room.

In a large concert hall, with a sizable group of instrumental or vocal performers, the sound is a broad panorama. In reproducing such a performance, the added diffusion afforded by a spherical- or other wide-dispersion speaker can do much to enhance the naturalism of the reproduction. On the other hand, smaller-scale performances can sometimes sound poorly focused with omnidirectional reproduction, and in such a case the ability to restrict a system's radiation pattern to the front hemisphere (as with the D-12A) can be very useful.

We found that the D-12A is not quite as sonically "invisible" as the D-12, probably because of its different driver configuration. With the D-12, it is usually necessary to stand directly over the mid-range driver to be sure it is playing (when it is among a group of speakers). The location of the D-12A is a bit more obvious to the ear, though not nearly to the extent shown by conventional forward-facing speaker systems.

...
When it comes to turntable speed accuracy, we agree with our competitors. You can't beat quartz-locked direct drive. But when it comes to total turntable performance, many professionals agree. You can't beat Technics. That's why so many radio stations and discos use Technics quartz-locked turntables. Because they need performance like wow and flutter of 0.025% WRMS, rumble of only –78 dB (DIN B), and speed accuracy of ±0.002%. Those are impressive specs. And if you've wondered why you don't see specs like these in our competitors' ads, it's usually because you won't find them in our competitors' turntables.

You will find these specs in Technics new 5000 Series: the SL-5100 manual, the SL-5200 semi-automatic, the SL-5300 automatic (shown below) and the SL-5350 changer. Along with a lot more.

Like a full-cycle detection servo system packed into three high-density IC "chips;" it assures proper rotational speeds, even under heavy loads. And TNRC, a unique Technics Non-resonant Compound virtually eliminates feedback.

At the same time, a highly sensitive statically balanced "S"-shaped tonearm drastically reduces friction to only 7 mg on both vertical and horizontal planes.

Each turntable features a prism-stylus illuminator to help prevent misces. While front-panel controls with damped cueing make operation easy, even with the dust cover closed. There's also an anti-skating control. And pitch controls variable by ±6%.

Now you know what many discos and radio stations already know: Quartz isn't the last word in turntables, Technics is.

**Many hi-fi buffs think quartz is the last word in turntables. Technics knows it's just the beginning.**
Sansui’s most powerful integrated stereo amplifier, the AU-919, is rated to deliver 100 watts per channel to 8-ohm loads from 20 to 20,000 Hz with no more than 0.008 percent total harmonic distortion. It is a “fast” amplifier, even by today’s standards, with a slew-rate specification of 200 volts per microsecond. The direct-coupled power-amplifier section has a rated frequency response of +0.3 dB from d.c. to 0.5 MHz.

The AU-919 has five power supplies using two power transformers. Separate rectifier and filter systems are used for the output stages of the two channels, and another pair of electronically filtered supplies powers the driver stages. A separate highly regulated power supply serves the various low-level stages in the amplifier. The circuits of the phono-preamplifier and power-amplifier driver stages are not shown in the schematic diagram that accompanies the amplifier. In each case, the circuit is indicated by a box marked “Diamond Differential DC Circuit,” which is apparently a proprietary Sansui development whose details they do not wish to disclose at this time.

An elaborate protection system senses overloads, output short circuits, or the presence of a c.¢ potential at the speaker outputs and shuts down the amplifier instantly with a relay if any of these conditions is detected. A red light on the front panel blinks when the circuit operates (the protective system also provides a turn-on time delay of several seconds, during which time the light blinks). Under normal conditions, the light is steady and serves as a pilot light.

In many of its control features and circuit details, the AU-919 is unlike most other integrated amplifiers. It has a built-in head amplifier for moving-coil phono cartridges which can be connected to one of its two phono inputs. The input-selector switch has three phono positions: PHONO 1 for either moving-magnet (MM) or moving-coil (MC) cartridges, and PHONO 2 for MM cartridges only. There are two high-level inputs, which are marked TUNER and AUX.

The tone controls appear conventional, with eleven-position stepped controls for bass and treble. Next to each is a pair of pushbuttons that select its turnover frequencies (3,000 or 6,000 Hz for the treble, and 150 or 300 Hz for the bass). However, the range of the control action is considerably less than that of typical tone controls, being rated at ±6 dB maximum at 50 and 15,000 Hz.

Toggle switches control some familiar functions, such as tone defeat, subsonic filtering (a 6-dB-per-octave slope below 16 Hz), and muting (a 20-dB level reduction). A fourth switch is marked JUMP. This rather cryptic term is explained in the instruction manual; the switch not only eliminates the tone controls from the circuit (as the TONE DEFEAT switch does) but removes all active circuitry between the inputs (or outputs of the phono preamplifier) and the power-amplifier input. Operating this switch also reduces the amplifier gain by 16 dB.

The volume control is a large knob that is detented at intervals of from 1 to 6 dB over its range of 70 dB. A small center-detented balance knob is located below it. The tape-recording and monitoring facilities of the AU-919 are unusual in being divided into recording and playback functions. There are three TAPE PLAY buttons, only one of which can be engaged at a time. When the source button is pressed, the selected program is heard through the amplifier. The TAPE 1 and TAPE 2 buttons connect the playback outputs of either of two tape decks to the amplifier. Working in conjunction with the TAPE PLAY buttons is a separate COPY knob, with positions marked TUNER, OFF, SOURCE, and two during positions that connect the two tape decks for copying a tape from either one to the other.

In its SOURCE position, the COPY switch supplies the selected program to the recording inputs of both tape decks. In TUNER, the tuner program is delivered to both decks regardless of the setting of the input-selector switch, and what is heard through the speakers). Regardless of what is being recorded at any time, the output of either tape deck can be heard by pressing the appropriate TAPE PLAY button. The OFF position of the COPY switch disconnects the tape-recording outputs of the amplifier from all signals.

The remaining front-panel features of the AU-919 are the SPEAKERS switch, with positions for connecting either, both, or neither of two pairs of speakers to the amplifier; the phones jack; the power switch; and the pilot light (marked PROTECTOR). On the rear apron, in addition to the various signal-input and output terminals, there are two high-level input and power-amplifier-input jacks normally joined by a slide switch. Insulated spring connectors are used for the speaker terminals. One of the three a.c. outlets is switched. The Sansui AU-919 is a moderately large and surprisingly heavy amplifier. It is 17 inches wide, 16¾ inches deep, and 6½ inches high, and it weighs about 47 pounds. It is finished entirely in black and is furnished with accessory rack-mounting adapters and handles. Price: $800.

Laboratory Measurements. The one-hour preconditioning period left the top of the Sansui AU-919 moderately warm over the power transistors (which are aligned from front to rear within the cabinet). The outputs clipped (Continued on page 58)
BOB LIFTIN THINKS YOU ARE READY FOR GRAND MASTER™ TAPE. ROY CICALA HAS HIS DOUBTS.

"Who wouldn’t be knocked out by a tape with specs like Grand Master?"
—Bob Liftin

"Sure, they’ll know Grand Master sounds better. But not how much better, unless they actually test it."
—Roy Cicala

We asked Bob Liftin and Roy Cicala if home audio buffs were ready for tape as sophisticated as Grand Master. They should know. They’re both nationally famous recording engineers who’ve been using Grand Master in the studio since 1973.

Bob said, “Sure they’re ready. Grand Master’s dramatic 4 to 8 dB improvement in signal-to-noise ratio allows a guy to hit the tape 3 to 6 dBs harder and still get better distortion figures.”

Roy wasn’t so sure. “Of course, Grand Master’s lower distortion and higher output mean a lot to pros. But how many home systems are sensitive enough to pinpoint the improvement?”

Noting the difference of opinion, we asked other top engineers.

Most agreed with Bob. [Sorry, Roy.]

They felt Grand Master’s sensitivity would yield a realistic, cleaner sound.

So now we make 4 new versions of Grand Master. Cassette. 8-track. Open reel. And a new Grand Master II high-bias cassette.

And we think you’re ready for them. Even if Roy Cicala isn’t sure.

GRAND MASTER BY AMPÈRE. WE THINK YOU’RE READY FOR IT.
Ampex Corporation, Magnetic Tape Division, 401 Broadway, Redwood City, California 94063, 415/367-3887

CIRCLE NO. 6 ON READER SERVICE CARD
at 119 watts per channel into 8 ohms for an IFH clipping-headroom rating of 0.76 dB (the 4- and 16-ohm clipping outputs were 177 watts and 70 watts per channel, respectively). The IFH dynamic headroom was 1.02 dB, corresponding to a short-term clipping output of 126 watts.

The distortion of the AU-919 was literally unmeasurable over much of its operating range. Using our new H-P 239A low-distortion audio oscillator, whose inherent distortion is less than 0.0018% per cent, we measured a total harmonic distortion of 0.002% per cent or less at 1,000 Hz from about 0.1 watt to well over 100 watts output, and it was only 0.007% per cent at the clipping point of about 120 watts. For reasons that are not clear (they are probably related to the ground paths that existed in our test setup), the intermodulation distortion (IM) was slightly higher than Sansui's 0.008% per cent rating, although an IM level of 0.01 to 0.02% per cent over the rated power range of the amplifier can hardly be considered a serious fault!

At its rated power output and at lower power levels, the harmonic distortion (THD) of the AU-919 was typically about 0.002% per cent between 25 and 5,000 Hz. It rose slightly to almost 0.005% per cent at 20 Hz, and it reached its maximum of 0.01% per cent in the 10,000- to 20,000-Hz range. The minute discrepancy between our reading and Sansui's 0.008% per cent rating is again probably due to a combination of test-setup factors we are currently investigating. In any case, exact duplication of distortion measurements in this very low range is difficult even with the same instruments—and in a totally different test setup the difficulty is compounded.

The Sansui AU-919 reached a reference output of 1 watt with an input of the high-level jacks of 15 millivolts, or a phono input (MM) of 0.215 millivolt. The corresponding signal-to-noise ratio, with a weight- ing, were 81.8 and 79.5 dB referred to a 1-watt output. The phono preamplifier overloaded at an extraordinary 460-millivolt input. Its input impedance was 47,000 ohms in parallel with 220 picofarads.

Although there are no universally accepted standards for measuring slew rate, we attempted to verify Sansui's 200-volt-per-microsecond rating. We didn't quite achieve that figure, but the 120-volt-per-microsecond measurement we did record would have to be considered quite remarkable for an amplifier with a 100-watt output rating. The IFH slew factor was in excess of 25, which is our measurement limit.

The phono equalization was within +1, -0 dB of the extended RIAA characteristic from 20 to 20,000 Hz, referred to the 1,000-Hz level. Measuring it through the inductance of a phono cartridge, we found the response up slightly less than 1 dB in the 10,000- to 15,000-Hz range, which would probably tend to flatten out the total response (subjectively) for those few people who can hear such a minute effect.

The tone controls had the specified characteristics, although the differences between the families of bass-control curves using the 150- and 300-Hz turnover frequencies were so slight as to be hardly measurable. As might be expected from a total control range of ±5 to ±6 dB, these controls are very subtle in their effect. They can be heard, however, and no doubt will appeal to those people who prefer to make only very slight adjustments to tonal balance. There is no possibility of creating any serious sonic imbalance with these tone controls, and even at their extreme settings the sound quality was never unnatural.

Comment. Sansui has obviously chosen to follow their own careful path in the design of the AU-919. No matter how similar most integrated amplifiers may be (and most are more alike than different), the AU-919 provides a distinct alternative to the general run of amplifiers. Those who rarely, if ever, use tone controls probably will not care one way or the other about Sansui's choice of tone-control curves. However, these controls are more likely to enhance the total sound quality than to degrade it, which is more than can be said about most tone controls we have seen (and heard).

To us, the most unusual thing about the AU-919, in view of its position as the leading integrated amplifier of a high-quality component line, is its conceptual approach to various features. Take filters, for example. Sansui chose to leave them out entirely, perhaps because filters are not a part of their design philosophy (the "subsonic" filter does not fall into this category, being an inherently inaudible filter that serves merely to prevent grossly improper operation of the amplifier or speakers with certain program inputs). We also note that the AU-919 does not have a control for paralleling the channels to form a mono signal (or to cancel vertical rumble when playing mono records).

On the other hand, the tape-recording and monitoring facilities of the AU-919 are certainly among the most versatile we have seen from the standpoint of giving the user complete control over his recording activities. And the inclusion of a moving-coil-head amplifier must not be overlooked in light of the current and apparently growing popularity of that type of cartridge. (Expensive as it is, the cost of a moving-coil head cartridge must be more than doubled by the addition of an external transformer or head amplifier, and it makes good sense both technically and economically to build the necessary gain into the system amplifier.) We listened to both Ortofon and Nagatron low-output cartridges through the AU-919 head amplifier with perfectly fine results. At any reasonable listening level, one can lift the pickup from the record and experience total silence from the speakers, even at close range.

In regard to the "jump" feature of the AU-919, inasmuch as our minuscule distortion readings were obtained through the complete amplifier we cannot imagine how any improvement can result from bypassing the 16-dB gain stage and tone-control circuits (which are readily bypassed with the defect switch). We could not hear any effect from the jump switch other than the gain change.

To summarize, the Sansui AU-919 is an amplifier with exceptionally robust construction, more than ample power for most listeners, fantastically low distortion (quite literally unmeasurable under any realistic use conditions), extremely fast response at all power levels, inaudible noise levels, and a built-in head amplifier for moving-coil cartridges. Clearly, this is a superb amplifier meant to be used with the finest ancillary equipment to bring out the best in top-quality sound sources. For that purpose, it could hardly be surpassed, and its fairly high price is well justified.

Circle 137 on reader service card
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Like the AD-6900U, the AD-6800 offers its own Flat Response Tuning System, and with AIWA's 36-Pulse F.G Servo-Motor, speed deviation is kept to a minimum. The AD-6800 also has Double Needle Meters and proven Peak Hold facility. A WOW and FLUTTER of 0.05% (WRMS), a Frequency Response of 20 to 19,000 Hz, and an S/N Ratio of 65 dB using FeCr tape with Dolby on all mean a superior performing deck. The AD-6800's piano key controls respond smoothly and instantly to the lightest touch. The AD-6800 also features Memory Rewind, Auto Cassette Loading and Limiter.

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AIWA

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Going on Record

By James Goodfriend

VOX POP

Everyone professionally involved in the classical-record industry ultimately discovers that his task is a dual one. The first part involves presenting his own particular product—selling it, that is—whether that product is a performance, a record, a critique, or something else. The second is selling classical music in general to an audience, most of whose members have never recognized it as a necessity of life nor even as a highly desirable luxury. Every record company has had its own way of approaching this dual problem, and a change in the management of a company has usually led to changes in that approach. Vox Productions (Vox, Turnabout, Candide) is one long-established company that changed hands in the past year, and it is of some interest to look at that company and its catalog again, at least partially through the eyes of the new management.

Vox was, under the long-time direction of the sophisticated and creative George Mendelssohn (short for George H. de Mendelssohn-Bartholdy), a fascinating company and catalog for a number of reasons. Primarily it was a repertoire-oriented company, by definition one that looks first for interesting and salable repertoire to record and then for the proper artists to do it (rather than looking, like most of the majors, for interesting and salable artists and then trying to decide what to record with them). Not that Vox was ever oblivious to performing talent. Such major figures as Otto Klemperer, Alfred Brendel, and Guiomar Novaes made their initial recorded reputations on Vox recordings, and a host of other estimable musicians have recorded for the label.

A second characteristic of a repertoire-oriented company is that its catalog is designed to be active for many, many years. There is minimum duplication of repertoire, there are relatively few cutouts, and the plan is to have available at least one of practically everything at all times. Many a record buyer searching for one particular piece has found that his specific desire can be accommodated only by a single available recording, and as often as not it is on Vox, Turnabout, or Candide. As of this moment, one might cite as examples the Albeniz Piano Concerto, the Beethoven Quintet in E-Flat, Op. 4, the Buxtehude Magnificat, Spohr’s Violin Concerto No. 8 (the only one of his violin concertos currently on records), the Franz Biber “Mystery” Sonatas, Bloch’s Suite Hebraique, and, coming shortly, Smetana’s The Bartered Bride. There are many other such examples, and in many cases where multiple recordings of works do exist, Vox’s was often the first.

It is interesting also that when representation of American orchestras on records had fallen to an all-time low, it was Vox that stepped into the breach, arranging workable contracts with the St. Louis Symphony, the Minnesota Orchestra, the Cincinnati Symphony, and others. Similarly, when certain classic historical recordings were withdrawn from circulation by the companies that originally issued them here, it was frequently Vox that rescued them, arranging licensing and putting them back in the active catalog.

As a final point, all Vox’s recordings have been available for a price—that is, a low price. The current list price for a Candide or Turnabout is $4.98, for a Vox Box (three records), $11.95. Vox is now a division of the Moss Music Group, Inc., headed by Ira Moss. Though Vox will continue to expand its catalog in directions similar to those it has taken in the past, Moss’ preoccupation is not with expansion of catalog but with expansion of audience, basically the second part of that dual record-business task discussed above. Moss’ background is with mass distribution and sales. Though classical music interests him, it is not his creative area as it was George Mendelssohn’s. Why, then, did he take over the company?

Largely, I think, because one can be creative in the marketing of a product as well as in its conception and production. Moss’ current marketing ideas go considerably beyond those of most classical companies. For example, there have been, in the past, highly successful merchandising schemes involving extensive sets of records offered, one or two at a time, through supermarkets. There are two distinct characteristics of these schemes: first, the costs are high and the unit profit small, but the quantities sold are enormous; and second, those who imitate such successful ventures too soon afterwards lose their shirts.

The extensive Vox catalog has been called on in the past to supply material for some of these ventures (including a very recent one), but, frankly, Vox has sufficient material to do the whole thing itself. It is far too soon to do so again domestically, but who says that all the supermarkets are in the United States? The record business today is international, and no one realizes the market significance of that more than Ira Moss. Mexico, to begin with, can expect such a campaign.

The very word “classical” is anathema in many sections of the country. To buy a record that can be distributed where classical records are, in one way or another; we differ merely in background is —most of the majors, for interesting and salable department stores.) Rack jobbers have become among the most important factors in the entire record business because they buy in huge quantities, their market penetration is both broad and deep, and they can work fast. They generally will not buy classical, but they might well buy MOR mood music of thrice-familiar “favorites.” Many of those thrice-familiar favorites are out-and-out classical music, and Vox has them all in its catalog. Creative cutting and assembly means, so other designs, suggestive album titles, and the playing down of the classical element to the point where not even the artists are named result in a record that can be distributed where classical records never are and that will be bought by people who never buy classical music. The profit margin is small and the aesthetic value, as we ordinarily calculate it, is nil, but the audience and the potential sales are of pop dimensions.

Obviously, we are entering the territory of selling the right things for the wrong reasons. But consider this: There are two ways for an elite art form to survive in an egalitarian society. One is for it to command general respect for its quality and rarity, so that even those who do not partake of it agree on its value and importance. That is getting harder and harder to maintain. The second is for it to become, through every available medium, so insidious and ubiquitous that it is absorbed by huge masses of people as an essential part of life. I am temperamentally an elitist—we all are, in one way or another; we differ merely in what we are elitist about—but I want great art to survive and I’ll take that survival any way I can get it. So here’s wishing Vox all the luck in the world.
So cool, you can feel it.

Smooth and crisp. Cool and satisfying. When you feel it, you know it's KOOL. Nothing satisfies like America's most refreshing cigarette.


Kings, 17 mg. "tar", 1.4 mg. nicotine, 1.8 mg. "tar".
1.3 mg. nicotine avg. per cigarette, FTC Report May '78.
DATSUN ASKS: WHY PAY THE DIFFERENCE IF YOU CAN'T TELL THE DIFFERENCE?

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From the glow of its new dual rectangular headlights to the comfort of the deeply-padded rich cloth upholstery, the new Datsun 810 Sport Coupe surrounds you with luxury.

Settle into the fully reclining bucket seats (the driver's adjusts six ways) and lift the steering column 'til it feels just right. Convent 4-speaker stereo with ragtop 'phone. Pull away with nimble power steering and push the Sport Coupe's 5-speed through its paces (automatic available). All of these driving pleasures are standard.
Compare the luxurious new Datsun 810 to the other luxury sedans on the chart. Surprise! You can hardly tell one from the other. Many key engineering and performance features are virtually identical.

In fact, in some respects, the Datsun 810 is actually a lot more car than some of these famous European sedans. The Datsun 810 sports a powerful fuel-injected 6-cylinder engine and fully independent suspension. Some of the others don't. Look again at the braking and acceleration figures. The 810 outperforms some of the others there, too.

Now for the most startling comparison of all: the price. You can buy a Datsun 810 for up to $10,000 less than the other luxury sedans. Hard to believe? Test drive the new 810. Then price the new 810. And believe.

Another luxury most of these other cars don't offer: the cavernous cargo capacity of a 5-door station wagon. Its split fold-down rear seat accommodates both skis and a skier.

Like the other new 810's, the 4-door sedan boasts the fit and finish you'd expect from a company that's been dedicated—driven—to build quality cars for nearly half a century: Nissan Motor Company, Ltd.

NISSEKAN
NOBODY DEMANDS MORE
WE ARE DRIVEN
RICCARDO MUTI
“The conductor must be Number One....
That is the lesson of Toscanini”

By Roy Hemming

Muti as in muted or as in silent? Isn’t that an
ironic name. I asked, for an Italian conduc-
tor who’s been making a big noise interna-
tionally with recordings of such splashy, large-scale
works as Prokofiev’s Ivan the Terrible, Verdi’s Aida
and Macbeth, and the Tchaikovsky symphonies?

“No, no,” the intense, darkly handsome, thirty-
seven-year-old Riccardo Muti replied, with a warm
smile, in his fluent, lightly accented English. “You
see, my name is not from the root for mute—but
from the Latin mutus, meaning mutual.” And that,
he promptly added, is pretty much how he views mu-
sic-making—as a mutual experience of all the per-
formers in a specific work. He paused briefly, look-
ing me straight in the eye. “But the conductor must
be Number One—especially in opera. That is the les-
son of Toscanini.”

We were talking backstage in Philadelphia’s
Academy of Music following a rehearsal for a Phila-
delphia Orchestra concert Muti would lead the next
evening. In 1977, to the surprise of many, Muti was
named principal guest conductor of the orchestra,
the first so-named leader the Philadelphians have had
since Eugene Ormandy became their music director
in 1936. Actually, there had been earlier “heir appar-
ents” to the solidly entrenched, popular Ormandy,
but Muti is the first to be given an
official title—and, with it, the oppor-
tunity to record regularly with the or-
chestra over the next three years. (Re-
corded last year for Angel, and just re-
leased: Stravinsky's Firebird, the Mou-
sorsgsky/Ravel Pictures at an Ex-
hibition, and Beethoven's Seventh Sym-
phony—see review on page [02].)

There is little doubt in Philadelphia
about Muti's popularity with au-
ciences, with the Philadelphia manage-
ment, and with Ormandy himself. Ev-
everyone in Philadelphia I talked to
spoke of his magnetism on the podium
and his warm, Italianate charm off it.

It was Ormandy who invited Muti to
come to Philadelphia for the first time
in 1972, after Ormandy heard him con-
duct a concert in Europe. But outside
of Philadelphia and New York (where
Muti has led regular Philadelphia sub-
scription concerts for the past two sea-
sons), few Americans have yet had a
chance to see and hear Riccardo Muti
in person. "I prefer to conduct often in
a few places, not the other way around,
et cetera, et cetera," he says, using the
phrase he is almost as fond of as was
the King in Anna and the King of Siam.

SUCH independence has marked much
of Muti's life, and today it distinguishes
him from most of the jet-hopping con-
ductors of his generation. Born in Na-
ples in 1941, he divided his education
between Naples and Milan. He started
out as a piano and composition student,
working his way through the conserva-
tory in Milan as a rehearsal pianist for
vocal students. An unexpected oppor-
tunity to conduct a student orchestra
changed his entire musical course. In
1967 he won the prestigious Guido Can-
telli International Competition, and
with it came an invitation to conduct at
the Maggio Musicale in Florence. His
performances there were such a suc-
cess that in 1969 he was invited to be its
music director, a position he still holds.

Muti's 1972 debut with London's
New Philharmonia Orchestra made a
similar impression, and when Otto
Klemperer died the following year,
Muti was named to succeed him as the
Philharmonia's principal conductor
(another position he still holds). Mean-
while, Karajan invited him to conduct
in Salzburg and Berlin. Before long, he
was also a favorite at the Vienna State
Opera and London's Covent Garden.

As invitation after invitation poured
in, Muti decided to dig in his heels
and say no to most of them. His strong
sense of perfectionism led him to
choose the path, rather, of doing a few
things well in a limited number of
places. He has made it clear to his rec-
ord producers, for example, that he
will not record any work—especially
an opera—that he has not previously
performed in public. He objects strong-
ly to the way many conductors and
singers learn works only for record-
ings, having no identity with the works
other than those recordings.

"For an opera recording, in particu-
lar," he says, "I think the experience
of the theater is essential. You need to
experience the audience reaction,
know the scenery, the staging, et cet-
era, et cetera, to create the right atmo-
sphere, the right drama, even the right
tempi. When singers don't know an op-
era, they are so busy with the score in
their hands that they lose eye contact
with the conductor. In a recording, just
as in a performance, it's very important
that the singers have their eyes fixed on
the eyes of the conductor all the time.
Not just to follow, but to understand
the conductor's ideas and feelings. The
eyes tell it all.

"Only once have I come close to re-
cording an opera I had not previously
done in a theater," Muti admits. "I was
asked to do Verdi's Nabucco, and I
kept saying I'd never done it. The rec-
cord company kept insisting it was a
work we should do, so I finally said
maybe. But first I went to work to
change my schedule at the Maggio Mu-
sicale so it would be possible for me
to give eight performances of Nabucco
in Florence. After those performances,
I felt right about making the recording—
and we did so. I believe the theater still
has the most to say to a conductor. Too
many recordings just aren't theatrical
because the conductor or leading sing-
ers have not had experience with that
opera in a theater. You can always tell.

You can hear the difference right
away."

How does Muti feel about the fact
that he will be recording with an or-
chestra (the Philadelphia) that has al-
ready recorded virtually all of the ma-
jor concert repertoire over the past
fifty years, first under Leopold Sto-
kowski and then under Ormandy? "I have
no problems about this," he re-
plied. "I don't want to seem arrogant,
but any conductor has a personal view
of Beethoven, Brahms, Tchaikovsky,
Prokofiev, et cetera, et cetera. So each
new recording is, I think, to be different.
And, frankly, I don't care so much
about comparisons. I think some critics
spend too much time comparing and
not analyzing performances. When you
do Brahms with the Berlin Philhar-
omic, if you worry about how you'll be
compared with Furtwängler or Bruno
Walter, or if you do Brahms with the
Vienna Philharmonic and you remind
yourself that this orchestra gave the
first performance of this work—well,
that's no good. The fact that the Phila-
delphia Orchestra has recorded all of
Beethoven's or Brahms' or any other
composer's major works with Stokow-
ski and Ormandy is not a problem for
me because, after all, some conductors
have already recorded the same works
themselves two or three times. There is
always something new to say about a
great work. That doesn't mean it's al-
ways better, of course. But I think it is
not right to listen to any performance
only to compare it with a memory of
other performances."

Of his recordings to date—almost all
with the Philharmonia—Muti admits "a
special sympathy" for the Mendels-
MUTI...

"Today, for Verdi, you have in the world only two possibilities for recording casts."

[speech]

...sohn Third Symphony (the Scotch) and Verdi's Macbeth, both on Angel. "With Macbeth," he noted, "the balance between the orchestra and the singers is the nearest to my ideal. It's not a case of the singers being the stars and the poor orchestra just accompanying. The Aida recording is also a good performance, but the sound favors the singers more than I prefer. The one recording I'm least happy about is Un Ballo in Maschera..." [speech]

What kind of a say does a young, still rising conductor like Muti have in the casting of his opera recordings? Can he control who sings major roles, or is it pretty much up to his recording company and its contracts with principal singers? "With Angel [Angel's English-based parent]," he answered, "I'm happy to say we always discuss this before I agree to record an opera. But let's be candid. Today, for Verdi, for example, you have in the world only two possibilities for great recording casts. By that I mean a choice from among two sopranos, two contraltos, two tenors, two baritones, two bassos. No, please don't ask me to tell you the names, because that wouldn't be fair to them or to other singers. It's only my view. Everybody at Angel and in the opera houses in which I conduct knows my views on this, but it would not be right to say the names publicly. My point is that casting for an opera recording today is indeed a problem. The singers must not only have good voices and good musicality, but must also be the right persons to understand the conductor's concept.

What about the charge of some singers—such as Shirley Verrett in a Stereo Review interview several years ago—that it's not singers who don't understand the conductor but more often vice versa: conductors who understand only the orchestra, and not the voice? Muti smiles, and plunges in without hesitation. "This is a very fair question, because it is true today that some very active conductors don't understand much about the voice. When I say that the conductor must be the center, must be Number One, I mean he's the one with the unifying musical concept. He must seek to realize his ideas with the orchestra, the chorus, and the singers. But that doesn't mean killing the personalities of the singers. You can't use singers as opera like clarinets or oboes in a symphony. But using their personalities, you must bring them to realize your—the conductor's—overall musical concept.

"It's true that some conductors of my generation say, 'Today I conduct a symphony, tomorrow I conduct an opera.' Opera is another world; you cannot conduct opera like a symphony. It's completely different because the words and the action, not just the musical notes, are important. You must know and understand the technical problems of the voice in achieving all that."

As Muti spoke, I couldn't help but notice the rapt attentiveness of his wife. Muti also noticed and explained. "My wife is a singer, a soprano lirico. We met when we were both students in Milan. But she gave up singing when our children came."

The attractive Mrs. Muti added a telling point. "We met in a vocal class," she noted.

"Yes," Muti continued, "as a student I spent five years as an accompanist in a singing class—to earn money. I heard singers—good singers, bad singers—for six hours a day. I came to understand their vocal problems and all the business about singing technique."

Muti carefully limits himself to three opera productions a year, and the rest of the time to orchestral work. He believes that the public today is prepared to recognize and accept more types of music than previous generations, and that recordings have had a lot to do with this. "The culture keeps going up compared with forty or fifty years ago. For example, in my first concerts with the Philadelphia Orchestra as their principal guest conductor, the first work on the program was Penderocke's Symphony No. 1. It's a fantastic piece, but hardly a standard. At first there were a few murmurs in the audience, even some laughs. But after a few minutes I was aware that everyone was listening—they had gotten involved in the emotion of the score, in its message. At the end there was much applause. Twenty or thirty years ago people wouldn't have been leaving the hall."

In addition to championing new music (besides Penderecki, his Philadelphia programs have included Ligeti, Britten, Rota, and Ghedini), Muti believes there are many neglected works from the past that deserve a hearing. "One composer I believe is particularly underplayed and underrated is Cherubini," he declared. "He is one of the greatest composers. Beethoven had great admiration for him, and says so in his letters. Toscanini often played Cherubini's D Major Symphony, but not other conductors any more. I hope I can do something in the future to make Cherubini more popular." Muti's first recording for Angel a few years ago, was the Cherubini Requiem in D Minor. "It won a Grammy nomination in America," he noted proudly, "which wasn't a bad way to start."

When his tripartite conducting schedule doesn't keep him in Philadelphia, London, or Florence, Muti prefers to spend as much time as he can with his family at their home in Ravenna. "I like to fish—but not because the fish are mute like you thought my name means," he said with a broad smile. "Also, I inherited from my late father-in-law a fantastic collection of puppets, one of the best collections in Italy. I enjoy working the puppets together with my wife, sometimes for people in the hospital, sometimes for the children, and sometimes just for our own amusement, et cetera, et cetera."

As I left I couldn't help but wonder how this might some day influence a Muti performance of Stravinsky's Petrouchka, or Delibes' Coppélia, or the Rossini/Respighi Boutique Fantasque, et cetera, et cetera.

STEREO REVIEW
"a professional studio recorder with a handle"

"ReVox new B77 is long on performance and short on Mickey Mouse features."

That's what Herb Friedman said about the ReVox B77 in Hi-Fi/Stereo Buyers' Guide.* If you're a serious audiophile or location recordist, you'll be interested in what Herb has to say.

In addition to evaluating products for Hi-Fi/Stereo Buyers' Guide, Herb Friedman is Chief Engineer for Tridac Electronic Laboratories and a major New York radio station. As such, he produces taped programming and he knows the real differences between truly professional recorders and others that claim to have "professional features."

Differences like 18dB record headroom, flat response with no low-frequency "head bumps", the highest usable dynamic range and the lowest noise of any audiophile recorder. Add to these such features as all-digital-logic-control of tape motion, large meters with LED peak level indication, self-contained tape splicer, and a rugged 37-pound package with a handle and you've got the best recorder in the world.

If you'd like to know what else Herb Friedman thinks about the B77, please circle reader service number or write to us for complete information including a reprint of his article and a list of dealers where you may see and hear the ReVox B77 demonstrated.

REVOX
Studer ReVox America, Inc., 1819 Broadway, Nashville, Tennessee 37203 (615) 329-9576
In Canada: Studer ReVox Canada, Ltd.
CIRCLE NO. 54 ON READER SERVICE CARD
*Copyright 1978 Davis Publications, Inc. Quoted from Hi-Fi/Stereo Buyers' Guide, July/August 1978, by permission. All rights reserved.
Not a cassette recorder, to be sure, but one of the few top-quality alternatives for convenient recording in the field. Depending on which features you choose, the open-reel Stellavox SP-6, shown here with its 10½-inch-reel adapters in use, will run you about $2,000 (cigar not included). For more on open-reel portables, see the box on page 73.
A guide to the marvelous midgets that have revolutionized serious field recording

By Ivan Berger

PORTABLE CASSETTE RECORDERS

All the world is a recording studio, full of sounds and music worth preserving, if you can only get a good recorder out to where those sounds and music are. In the fifteen years or so that I’ve been taping live shows, folk concerts, street performers, and sound effects, I’ve found that getting recording gear to a location and making good “remote” recordings once I’m there have both gotten easier and easier. And it’s a good thing, too, since after fifteen years I’ve gotten less eager than I used to be to lug a 75-pound, open-reel recorder up four flights of stairs to a choir loft.

The big differences between today’s portable recorders and those of yesteryear are owing to two inventions: the transistor and the cassette. Transistors made portability more practical for every kind of electronic device. Not only were transistor circuits smaller and lighter than their vacuum-tube ancestors, but they were also designed to operate on the low voltages easily available from batteries—and their low power consumption meant that those batteries could be smaller, lighter, and longer-lasting as well. The next stage of development, today’s integrated-circuit construction, cut recorder size and weight still further.

The tape cassette was, of course, designed from the start with portability in mind. (In fact, for the first year or two after cassettes were introduced, only portable machines were available to use them.) It was immediately obvious that cassettes had a lot to offer the walk-about recordist. Their small size, portability, and ease of loading made them ideal for taping spontaneous events. All told, we’ve come a long way from the days when a portable recorder had tube circuits, a battery-saving clockwork motor, and at least 15 to 20 pounds of weight. Today’s lightest portable stereo cassette deck, the Uher CR 210 (only 4½ pounds without batteries!), gets better performance at 1½ ips with narrow (¼-inch) tape than the early open-reel portables got at 15 ips with standard ⅛-inch tape. And, in addition, it has a host of operating features that users of those early models never dreamed of—though some of today’s bigger portable cassette decks of course offer still more features and even better performance. (And there are some high-performance open-reel portables as well; see the box on page 73.)

The better cassette portables are, in fact, true component decks, and they should not be confused with cheap pocket- or book-size recorders or the ones built into portable radio/cassette combinations. Thanks to servomotors, often controlled by frequency-stable oscillators, the speed constancy (absence of wow and flutter) of the better portables is nearly as good as that of similarly priced a.c.-powered decks. (Most line-powered decks now use servomotors too, so any differences with respect to wow and flutter are very likely due to the less massive flywheels often used in portables to save on weight.) Special “anti-roll” measures have been taken in most portable-cassette designs to prevent the tape speed from varying if the deck is held at an odd angle or even moved about while recording.

Comparable portable and non-portable decks generally have similar electronics, so other aspects of their performance are fairly similar also. Actually, there’s one way a portable’s performance might even be superior: with power coming from batteries (or, sometimes, from an a.c. adapter placed well away from the deck) there’s far less chance of getting 60-Hz power-line hum or buzz in your recordings. On the other hand, noise-reduction devices are not as nearly universal among portables as they are among stay-at-home decks. Of the fourteen cassette models examined for this article (two each from JVC, Nakamichi, Sony, Technics, and Uher, plus four from Superscope), only eight have Dolby circuits; the JVC models are equipped with ANRS and Super-ANRS circuits, bringing the built-in noise-processor tally up to ten. Only one stereo model, the Uher CR 210, has no noise-reduction system at all, but two of the three mono models (one each from Sony and Superscope) lack it, and the remaining mono deck, Superscope’s C-205, has an “ambient noise control” system that is apparently similar to a filter.

If you buy one of the better-quality portable cassette recorders, therefore, you won’t be missing much, if anything, in terms of performance; the measurements may seem a little less impressive than those of the stay-at-homes, but when you listen to these
PORTABLES...

"... compare the total cost of the units when they're fitted out with everything you'll need to operate them."

portables through a wide-range audio system, they sound good. What you trade for portability, though, is a long string of features—any one of which you may or may not miss. (There are also a few well-conceived features in some portables that are uncommon in non-portable decks, perhaps because you're less likely to need them when you're taping quietly at home.) It's easy to decide whether you need a portable deck; what's hard to decide is which one to get. As is usual in hi-fi, the answer to that question depends on your special needs and intended uses.

How Portable?

In one sense, a "portable" recorder is any machine that can run off batteries (even with that definition, the Nakamichi 350 on our list just sneaks by; it was designed for automobile use and its portable power pack is in the optional carrying case, not in the recorder itself). But there are degrees of portability. Relative sizes and weights are a big factor, and weights are the harder of the two to compare. Astonishingly, not all specification sheets list a weight, and some of those that do give a figure that includes the batteries, and others don't. There's no question, anyway, that in our group the previously mentioned Uher CR 210 (4½ pounds, 116 cubic inches) is both the smallest and the lightest, and the Technics 646DS (12½ pounds, 666 cubic inches) is the biggest and the heaviest.

If you plan to record "on the run," you'll have some specialized requirements, such as controls and meters you can easily see and use while walking and good vibration and tilt resistance. You can check these qualities out in the store by taping a guitar or a piano record as you walk about with the machine slung from your shoulder.

Other portability factors are equally important whether you make walkabout recordings or just want a portable because it's small, light, and able to be used in places that extension cords won't reach. For instance, consider the batteries. Virtually all portables will run off the kind of replaceable batteries (usually D cells) you can buy almost anywhere, and nearly all of them also have rechargeable (usually NiCad) batteries available. The latter can be a big money saver if you record with batteries a lot, as you'll have a chance to recharge them (which sometimes takes quite a while) between tappings, but it's a costly extra otherwise. Some of these batteries are rechargeable while they're in the machine, some must be removed; most decks have accessory cords (sometimes supplied, usually extra) to take power from a car's cigarette-lighter socket.

Battery life is another important but frequently unstated specification for a portable deck. When they're given, the ratings are in terms of the life of a full complement (from four to six cells, depending on the machine) of standard alkaline batteries. At the long-life end of the scale are the Sony TC-158SD (10 hours), the JVC KD-1636 Mk II (12 hours), and the Nakamichi 550 (15 hours); at the other end are the Technics 686DS (4 hours) and 646DS (8 hours), all four Superscope models (5 hours each), and the Nakamichi 350 (2 to 3 hours—but remember that this is really more a car unit than a true, general-use portable).

The JVC KD-1636 Mk II, the Nakamichi 550, and the Sony TC-158SD can credit some of their long battery life to circuits known as d.c.-to-d.c. converters. These boost the batteries' low d.c. voltages to slightly higher ones. Feedback keeps the output voltage constant as the battery voltage falls.

All of the decks considered here can also be powered by the a.c. line by using an a.c. adapter. The adapter for the Uher models can be set to operate at either the European standard voltage (220 to 240 volts) or the U.S. standard (110 to 120 volts), but if you go abroad you can probably find adapters available locally to use with any of the other units. Some of the list prices quoted for these decks include batteries, car lighter-socket cords, and/or a.c. adapters, but others do not. So, when comparing prices, compare the total cost of the units when they're fitted out with everything you'll need to operate them.

Still another aspect of portability to bear in mind is how well a machine's controls are protected both from accidental damage and unintentional operation. Few things are more frustrating than to have your deck's record button break off when you're miles away from a repair shop. And it's almost as bad to hit an on/off switch or the record button accidentally and either lose a recording you wanted to keep or drain your batteries while recording only ambient noise. JVC's KD-1636 Mk II, Technics' 646DS, and Sony's TC-158SD all have protruding grab rails that give some protection to the controls, and the control keys of the Nakamichi 550 are well recessed.

Live Taping

Since live recording necessarily lets you in for the unexpected, your recorder should be designed to help you cope swiftly and easily with whatever happens. Ideally, the human-engineering aspects of the machine should be such that you can operate it with no mistakes and you're in a state of incipient panic—or so fascinated with what you're taping that you practically leave the recorder to fend for itself.

The Technics 686DS is a good example of such engineering. Instead of a smooth row of identical-looking control keys, there's a two-way lever for fast-forward and rewind, a big round stop button, and just three conventional keys (record, play, and pause). The record and play keys (which you sometimes want to press simultaneously) are next to each other, but the record key is noticeably bigger than the play key; the pause key is placed a little bit away from the other two. The design isn't quite perfect, however, since eight other functions are controlled by a row of identical pushbuttons. It's no easy task to set controls like these properly in a dim light.

Level-setting functions call for human-engineering foresight as well. In doing live recording, you can't always just check levels at the start and leave them at the same setting throughout (as you often can when tapping a broadcast or record or dubbing another tape). Therefore, a portable machine should make it as easy as possible to maintain a correct level. But that immediately requires a compromise. To keep you constantly aware of your recording level, the indicator should be as large and conspicuous as possible; but to be easily portable, the machine has to be kept small. Future portable recorders may have liquid-crystal bar-graph indicators which can cover a wide scale range in a relatively small panel area.

Peak-reading meters, like those used on the Nakamichi and Uher models, are often more useful for live recording than averaging, VU-type meters are, especially considering the limited headroom of cassette tape. A recording-level indicator that reliably shows even the briefest of signal peaks can warn you about possible tape overloading and consequent distortion. (Nakamichi's peak-reading meters, by the way, have unusually extended scales, going down to -30 dB on the Model 350 and...
<table>
<thead>
<tr>
<th>Make and Model</th>
<th>Price (dollars)</th>
<th>Weight (pounds)</th>
<th>Dimensions (inches)</th>
<th>Wow and Flutter (per cent)</th>
<th>S/N (dB)</th>
<th>Frequency Response (Hz)</th>
<th>Battery Life (hours)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>JVC KD-1636 Mk II</td>
<td>3370</td>
<td>11.7</td>
<td>14.6 x 4 x 9.7</td>
<td>0.08</td>
<td>57</td>
<td>30 to 16k</td>
<td>12</td>
<td>Super ANRS, master gain, mic. att.</td>
</tr>
<tr>
<td>JVC KD-2</td>
<td>330</td>
<td>7.9</td>
<td>10.9 x 3.7 x 11.4</td>
<td>0.09</td>
<td>57</td>
<td>30 to 16k</td>
<td>15</td>
<td>Three mic. inputs, Dolby and Dolby cal. tone, 45-dB peak meter, tape-footage indicator. LED end alarm, limiter.</td>
</tr>
<tr>
<td>Nakamichi 550</td>
<td>630</td>
<td>11.2</td>
<td>12.2 x 3.5 x 13.8</td>
<td>0.08&quot;</td>
<td>65</td>
<td>40 to 17k</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nakamichi 350</td>
<td>440</td>
<td>6.6</td>
<td>7.3 x 3.5 x 9.5</td>
<td>0.08&quot;</td>
<td>59</td>
<td>40 to 15k</td>
<td></td>
<td>For car; switches ADS 2002. battery in optional case, 35-dB peak meter. Dolby, three mic. inputs.</td>
</tr>
<tr>
<td>Sony TC-158SD</td>
<td>382</td>
<td>10.6</td>
<td>13.8 x 4 x 9.4</td>
<td>0.08&quot;</td>
<td>59</td>
<td>30 to 15k</td>
<td></td>
<td>Dolby, limiter, peak LED, auto-meter-light shutoff, mic. att.</td>
</tr>
<tr>
<td>Sony TC-142</td>
<td>260</td>
<td>5.8</td>
<td>9.8 x 2.9 x 7.6</td>
<td>0.26&quot;</td>
<td>45</td>
<td>70 to 12k</td>
<td>5</td>
<td>Three heads, Dolby, ALC and limiter, punch-in record, mic. att., tone control.</td>
</tr>
<tr>
<td>Superscope CD-330</td>
<td>240</td>
<td>n.a.</td>
<td>11.8 x 3.2 x 7.7</td>
<td>0.12&quot;</td>
<td>60</td>
<td>40 to 14k</td>
<td>5</td>
<td>Two heads, otherwise same as CL-330.</td>
</tr>
<tr>
<td>Superscope CD-320</td>
<td>190</td>
<td>n.a.</td>
<td>11.8 x 3.2 x 7.7</td>
<td>0.12&quot;</td>
<td>60</td>
<td>40 to 14k</td>
<td>5</td>
<td>Three heads, &quot;ambient noise control,&quot; =20% pitch control. ALC and limiter, punch-in-record, memory rewind, tone control.</td>
</tr>
<tr>
<td>Superscope C-205 (mono)</td>
<td>170</td>
<td>n.a.</td>
<td>11.8 x 3.2 x 7.7</td>
<td>0.12&quot;</td>
<td>60</td>
<td>40 to 14k</td>
<td>5</td>
<td>Same as C-205, but two heads. no memory rewind.</td>
</tr>
<tr>
<td>Superscope C-204 (mono)</td>
<td>120</td>
<td>n.a.</td>
<td>11.7 x 3.2 x 7.7</td>
<td>0.12&quot;</td>
<td>50</td>
<td>40 to 12k</td>
<td>5</td>
<td>Three heads (see text). Dolby, master gain, two peak LED's, lockable meter illumination, LED end alarm, low filter, record LED, mic. att.</td>
</tr>
<tr>
<td>Technics RS-686DS</td>
<td>650</td>
<td>6.2</td>
<td>9.6 x 3 x 7.9</td>
<td>0.07&quot;</td>
<td>63</td>
<td>50 to 16k</td>
<td>4</td>
<td>Dolby, ganged gain controls, LED tape-end alarm, tone control, mic. att.</td>
</tr>
<tr>
<td>Technics RS-646DS</td>
<td>330</td>
<td>12.5</td>
<td>14.3 x 4.2 x 11</td>
<td>0.1&quot;</td>
<td>65</td>
<td>50 to 14k</td>
<td>8</td>
<td>Peak meters: Dolby; ganged gain controls; auto-CR bias; front-loading; LED record, charge, start/stop indicators; built-in mic.</td>
</tr>
<tr>
<td>Uher CR 240</td>
<td>1,211</td>
<td>5.9</td>
<td>9.3 x 2.3 x 7.3</td>
<td>0.2</td>
<td>66</td>
<td>30 to 16k</td>
<td>n.a.</td>
<td>S/N 63 d6 at 3¾ ips, other specs same as 4200.</td>
</tr>
<tr>
<td>Uher CR 210</td>
<td>1,138</td>
<td>4.4</td>
<td>7.3 x 2.2 x 7.1</td>
<td>0.2</td>
<td></td>
<td>30 to 17k</td>
<td>n.a.</td>
<td>Auto-reverse, front-loading, peak meter, ganged gain control, car bracket available, built-in mic.</td>
</tr>
<tr>
<td>Uher 4400</td>
<td>1,054</td>
<td>8.4</td>
<td>11.2 x 3.7 x 8.9</td>
<td>0.21</td>
<td>62</td>
<td>35 to 20k</td>
<td>n.a.</td>
<td>Half-track, otherwise same as 4400.</td>
</tr>
<tr>
<td>Report Stereo IC</td>
<td>1,054</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td>62</td>
<td>35 to 8k</td>
<td>n.a.</td>
<td>S/N 63 d6 at 3¾ ips, other specs same as 4200.</td>
</tr>
<tr>
<td>Uher 4200</td>
<td>1,054</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td>62</td>
<td>35 to 8k</td>
<td>n.a.</td>
<td>S/N 63 d6 at 3¾ ips, other specs same as 4200.</td>
</tr>
</tbody>
</table>

w = weighted; f = with ferrochrome tape; n.a. = not available; 1 = 7½ ips; 2 = 3¾ ips; 3 = 1⅛ ips
PORTABLES...

“All portables either have or are equipped to take at least one mike per channel.”

to – 40 dB on the Model 550, instead of the nearly universal –20-dB lower reading.) Next best to a peak-reading meter is a LED indicator that shows when peaks are exceeding permissible levels. JVC’s KD-1636 Mk II has a three-color LED indicator that changes color according to the level being reached. Technics’ 686DS has a separate red peak-warning LED for each channel, and Sony’s TC-158SD has one that serves for both.

The meters on most portables can be illuminated if you’re using the machine in a dim light. To prevent unnecessary current drain during battery operation, you have to switch them on instead of their lighting up automatically (some decks have meters that light automatically when an external power source is used). The meter light on the Technics 686DS can be locked on if desired, and the Sony TC-158SD has a “memory” light that can be locked on during use but which goes off when the machine shuts down at the end of a tape. Most meters also do double duty as built-in battery testers. (The Nakamichi 550’s meters serve a third function as well: one of them shows the battery status while the other shows how much recording time is left on tape.)

Just knowing the recording level isn’t enough; you have to be able to control it easily as well. For recording music and many natural sounds, manual level control is far better than automatic level control (ALC), although the latter is very useful for recording speech. A limiter—which keeps peaks from overloading the tape but leaves most of the signal unaffected—is useful under almost all circumstances. Both Uher cassette models and Sony’s monophonic TC-142 have defeatable ALC; both Nakamichi, both Technics, and the Sony TC-158SD have switchable limiters. All four Superscope machines have both features.

When the recording level is being controlled manually, it’s important to be able to fade both stereo channels in and out together. Portable decks have too little space for adequate sliding controls, but a large master gain control plus smaller individual-channel adjusters is at least as good, perhaps better; you’ll find that arrangement on the Technics 686DS and both of the JVC models. The Uher CR 240 and the Technics 646DS have only individual channel knobs, but they can be mechanically coupled; the tiny Uher CR 210 has a single control knob for both channels. The other stereo machines have concentrically mounted individual channel controls that can be turned together. The mono decks, of course, need only one level control.

Hearing your recording is the best way to judge its quality. All these decks except the two Nakamichis, the JVC KD-2, and the Sony TC-158SD include speakers, but they’re too small to tell you much about recording quality; for that you’ll need good headphones. Each deck has a separate headphone jack, and most of these have volume controls. You could also connect some of the decks to external loudspeakers, but these would have to be of very high efficiency since the decks all have quite low output power (none offers more than 1.3 watts per channel). The Superscope CD-330 and the Technics 686DS let you monitor a tape as you record it by using separate record and playback heads (the third head on the Technics is really just for monitoring, not playback).

It’s well to be able to monitor tape consumption, too. Three-digit index counters are found on most portables, though they’re not always visible while you’re operating with the deck hanging from a neck or shoulder strap. More useful are LED’s signaling the end of a tape, as on Sony’s mono TC-142, both Technics portables, and the Nakamichi 550 (the signal on this one can be programmed to go off as far ahead of the tape’s end as you wish—and that’s in addition to the recording-time scale on one of the meters). Also check whether the deck you’re considering lets you monitor the remaining tape by eye. Some decks have clear lids over their cassette compartments, others have hard-to-see-through smoked ones (the Uher CR 210 has no window at all). And while you’re at it, check how easy it is to change tapes in a hurry.

For returning to the start of a recording you’ve just made, you’ll find the memory counter on the Superscope mono C-205 quite handy, as is the “cue-and-review” feature (which lets you hear the “monkey-chatter” of the tape in the fast-forward and rewind modes) found on all four Superscope portables.

For live recording you’ll need one or more microphones, of course. All portables either have or are equipped to take at least one mike per channel; the two Uher cassette models can take a stereo mike directly, and the two Nakamichi units actually each take three microphones—one for the left channel, one for the right channel, and a center “blend” mike mixed equally into both (and with its own separate level control). To use even more microphones than that, you’ll need an external mixer; luckily, all the portables discussed here have line-input jacks that can connect to a mixer. The cassette Uhers have DIN jacks that their optional external stereo microphones plug into, plus internal stereo microphones you can use for quick, informal taping. The mono Sony and Superscope models also have built-in mikes.

Very loud sounds, or very high-output microphones (such as the condenser types that are now becoming common), can overload the input circuits of a recorder. To prevent overloading, the JVC and Technics decks, as well as the stereo Sony and Superscope models, have switchable attenuators that reduce input levels by 20 dB. The Technics 686DS also has a filter to attenuate unwanted very-low-frequency sounds such as wind or room noise.

Other Features

Most high-quality portables allow you to set the appropriate bias and equalization levels for at least two types of tape (Sony’s TC-158SD adjusts for all three common types—ferri-
OPEN-REEL PORTABLES

How about open-reel portables? With wider tape and higher tape speeds, you'd expect to get better-quality recordings. And you do, which is why open-reel portables are still made and sold despite the overwhelmingly greater popularity of cassette models. Nakamichi's 4-SD ($5,750 without accessories) and Stellavox's SP-8 ($4,145 without accessories) are beautiful, solid, professional machines with professional-level price tags. For an amateur's budget, the only choice is Uher, and you have to be a fairly well-heeled amateur at that: Uher's stereo open-reel portables, the half-track 4200 and the quarter-track 4400, each list at $1,054. That's more than $400 above the price of any cassette portable other than Uher's own models—which cost even more than their open-reel portables. (Uher's open-reel mono machine, the 4000, is a bit cheaper, only $861.) And these machines are also bigger and heavier than many portable cassette decks (though they are still only a bit more than half the size and weight of the Technics 646DS). What do you get for the extra bulk and cost? For one thing, you get a choice of four speeds, from 7/8 ips all the way down to 15/16 ips. The performance at 15/16 ips (the standard cassette speed) isn't as good as that of the cassette decks, but at 3% and 7/8 ips it's noticeably better. And at the slowest speed, 15/16 ips, you can record up to six hours in each direction with triple-play tape (but forget about fidelity; the frequency response at that speed is extremely limited).

Specifications can't tell you all the differences between the performances of open-reel and cassette machines unless you know how to read "between the numbers." High-speed recording doesn't overload tape as easily as slow-speed recording, so the high-frequency response of an open-reel deck at 3% or 7/8 ips is measured at only 10 dB below the 0-dB level rather than the usual -20 dB for a cassette deck's specs. If you try to match an open-reel's performance at the higher speeds with a cassette deck used under the same operating conditions, you'll run into high distortion. And open-reel signal-to-noise ratios without Dolby noise reduction match those of a typical cassette model with its Dolby circuits operating. And there's one more plus: open-reel tapes can be edited and, for all practical purposes, cassette tapes cannot.

The various models of open-reel portables take a host of accessories, such as voice-operated record switches, synchronizers for slides or movie soundtracks, telephone adapters, mixers, power adapters for a.c. wall outlets or car batteries, and even, for the Stellavox and Nagra machines, adapters for use with 101/2-inch reels (they cost about $1,000 extra for the Nagra, $250 extra for the Stellavox).

TRULY, the marketplace holds something for everyone who wants a portable tape recorder, and the machines we've discussed here may not be best for everyone who wants a portable recorder for is to make, say, verbal notes or correspondence tapes, or to tape an interview for print (as opposed to broadcast), it would be better to look for a good deal lower down on the dollar scale.

The decks we've discussed are actually triple-duty machines, since in most cases they will function quite satisfactorily as the tape component in a high-fidelity home audio system as well as serving (in conjunction with other equipment) as music sources when you're in transit and at the task for which they're really designed: making high-quality recordings in the field.
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EVEN though you've never cut a disc, you probably have some idea of how the sound gets into and out of a record groove.

But do you know just how your tape recorder does its job?

For disc recording and playback, electricity is a refinement rather than a necessity (remember the acoustic phonograph?). Tape recording, on the other hand, is entirely electromagnetic in principle, and no physical changes representing the audio signal take place either in the tape or in the heads over which it moves. Obviously, however, there must be something happening; that something is a change in the magnetic patterns imprinted on the tape. To imagine what this entails—the patterns are not, of course, visible to the naked eye—some understanding of the physical structure of the tape itself is helpful.

Tape

Recording tape consists of a thin film of plastic to which is permanently bonded a coating of magnetic material. Although the plastic film as well as the various bonding agents are critically important to good performance, the magnetic coating is the actual recording medium. In most cases, some form of iron oxide is used, though other materials have appeared in the past few years.

The magnetic particles used are usually needle-shaped, and a rather large one might measure about 25 by 4 millionths of an inch, although typical high-output/low-noise tapes will use much smaller particles that are more densely packed. In order to make use of the individual particle's bar-magnet properties, the floating needle-shaped oxide particles are physically aligned by a magnetic process while the coating is still fluid so that their long dimension corresponds, in general, with that of the tape. When the coating has dried, no further physical motion of the particles is possible, but they can be magnetized in one direction or the other depending on the magnetic field that is applied to them.

Heads

If you opened up a tape-recorder head you'd find electromagnetic coils and pole pieces (with two sets stacked in a stereo head as in Figure 1). The pole pieces terminate at the surface of the head, over which the tape passes, and are separated by a very tiny gap filled with non-magnetic material. The size of this gap is measurable in mi-
Figure 1a. This sample of metal-alloy particles has delicate threads made up of small crystals.

By Craig Stark

Craig Stark, who holds a doctorate in philosophy, has been Stereo Review's tape columnist for more than ten years. He operates Starksonic Studio, a facility for professional recording and for the testing of tape and audio equipment.

THE FUTURE OF MAGNETIC TAPE: TWO VIEWS

By Yasuo Imaoka

Dr. Imaoka, who holds degrees in chemical engineering from the Tokyo Institute of Technology, is the general manager for R&D of TDK's Magnetic Tape Division.

Figure 1b. Conventional ironic and chromium tapes have more or less monolithic magnetic particles.
Magnetic tape is the writing paper of the electronics age," remarked the president of a major Japanese tape company as he guided a group of visiting American journalists through his plant's impressive production, research and development, and quality-control facilities. It is the kind of compliment that sends the mind on a quick scan of communications history, from Stone Age cave paintings through Babylonian clay tablets, to movable type and modern newsprint, and on to Edison's cylinders, the LP disc, open-reel tape, and today's audio and video cassettes.

This fascinating tale of a continuing evolution in storage media is paralleled by an equally dramatic evolution in the types of "message" we are able to store and communicate. And the saga is far from over. Looking ahead just a short distance into the future of magnetic recording, we see a fascinating pattern shaping up again, one that spells revolution. It may not overwhelm all of us at once, and it may progress in a somewhat disorderly fashion, but make no mistake, it's coming.

Metal Tapes

At just about the time these words reach print, it is expected that metal-particle tape (variously called "metal-alloy" and "fine-metal" tape) will be available at consumer retail outlets. Both "hardware" (the decks) and "software" (the tapes) have been publically shown on a number of occasions, and I recently had the chance to put several samples of both machines and tapes to the laboratory test. The machines I have personally tested have been preproduction samples, as have the tapes. But the latest batches of tapes are intended for machine calibration, so they cannot be far removed from what the final product will be. And, on the whole, that final product seems to be shaping up rather well.

Stated briefly, the overall potential of fine-metal tape could lead to a low-frequency maximum-output level approximately twice that of conventional cassettes—plus a comparable increase at high frequencies. (In engineering terms, both "retentivity," for low-frequency performance, and "coercivity," for high-frequency performance, have been boosted; the former to perhaps 3,000 or 3,300 gauss and the latter to about 1,000 oersteds.) The very first products off the line will probably not be able to exploit the full potential benefits theoretically available, but they are likely to have significantly improved performance over ordinary cassettes, particularly in the area of high-frequency audio quality, and certainly, the traditional weak point in cassette performance.

Unlike other magnetic materials used in making tape, the pure-metal particles used in the new tapes do not contain the oxygen atoms that, in a sense, use up space within molecules of the "standard" ferric oxide (Fe$_2$O$_3$) and chromium dioxide (CrO$_2$). Rather, the new metal-alloy tape particles consist—in at least one formulation, anyway—of approximately 70 per cent iron (Fe) and 30 per cent cobalt (Co) by atomic weight. Such particles must be protected from rusting (oxidizing) both during manufacture and in use. As the metal oxidizes, and sintering, for if they were permitted to combine with oxygen it would adversely modify their superior magnetic performance. The deepest tape-industry secrets today lie in the methods used to form a protective shell around each metal particle. The theoretical advantages of this kind of tape have been known to magnetics experts for many years; getting a chemically stable tape manufactured before the pure-metal material changes into something else has been the problem.

At TDK I saw an actual demonstration of how by one of several methods) the metal particles themselves are created. A chemist took two partially filled beakers of colorless, transparent liquid (one containing a solution of iron and cobalt salts, the other an aqueous solution of sodium borohydride), poured the solution into each, and instantly produced an inky-black fluid which cleared in a few moments as the black metal particles settled to the bottom. In industrial production of tape "powder," this mixing would be carried out in the presence of a strong magnetic field so that the precipitate would form thinly linked chains like beads on a necklace, each "jewel" of which would have the approximate diameter of one magnetic "domain" (about 260 angstroms). The differences, seen through an electron microscope, between the metal-alloy particles and those of a conventional cobalt-treated ferric oxide are vividly obvious in the photos of Figure 1 on the facing page.

Theory aside, how well does the tape actually work? Trying to pin that down put me through a good deal of personal travail, not just because of the tapes themselves but also because of the scarcity of suitable machines to use them on. Two tape-machine companies offered to provide production-line samples of their metal-ready tape decks, but they could not make my deadline. A third delivered a prototype that was still beset with a few unsolved problems. Finally, a prototype Nakamichi machine was acquired that seemed to represent the current state-of-the-art in handling metal tape (Nakamichi says that production of its final production version will be even better).

Chromium Dioxide

In the meantime, in the early Seventies, advances were taking place in the development of chromium-dioxide tape, particularly in the Du Pont laboratories. Chromium dioxide looked like a good bet, for it had magnetic properties resembling those of ferric oxide but with higher coercivity, and, in contrast to cobalt-treated ferric oxide, it did not pose the problem of uniting dissimilar materials. The "chromium" tape finally developed made necessary a new cassette playhead standard as well as higher recording-bias levels to suit its coercivity of some 500 oersteds.

But not everyone accepted chromium dioxide as the ultimate or most practical magnetic particle. There were objections to a complicated manufacturing process that en-
The two "families" of curves shown in Figure 2 pretty much tell the story of just how superior the new metal-alloy tape is to even a topnotch "conventional" tape (TDK SA). Four sets of output-vs.-frequency curves were made at input levels of -10, -10, -20, and -20 dB, "0 dB" being defined in each case as the input level which, at 1,000 Hz, produced a 200-nanowebper-meter flux level on the tape (this level is commonly referred to as "Dolby level" and, on most tape decks, corresponds to a reading of approximately 10,000 on the meters).

At the -20 dB level, at which normal cassette-deck frequency-response measurements are made, both tapes are essentially identical, with a frequency response (on the Nakamichi deck) that obviously extends beyond the 20,000-Hz limit of the graph. At a -20 dB level, however, the metal tape (in this case, a sample of 3M's Metafine, though samples from TDK and Fuji performed essentially similarly, if with very slightly less overall output) is down only 3 dB at 20,000 Hz, a point reached by the regular tape at 15,000 Hz. At a 0 dB level the metal-alloy tape is down only 1 dB at 10,000 Hz, at which level the regular tape is fading fast. And, confronted with a level (+10 dB) bound to produce overload, the metal tape shows a slightly greater resistance to saturation at the low-to-middle frequencies and an enormously higher signal capacity at all frequencies above a couple of thousand hertz.

Final pricing on all these new tapes has not been announced, but it is widely expected that—at least initially—fine-metal cassettes are likely to cost about twice as much as currently available premium cassettes. Also, since the vastly increased record-bias and erase-current requirements of metal-particle tape exceed the capacity of existing cassette decks, you'll need a new machine (or extensive modifications on an existing one, including new heads and electronics) to record with the tape. Two companies—Tandberg and Eumig—have announced that they will have "retrofit" modifications available for specific models. (Any deck that will handle chromium dioxide will play back a metal tape, however.)

I've tested samples of three different manufacturers' tapes and found them, happily, to be astonishingly close in their bias and equalization requirements (a couple of samples from different batches showed slight bias requirement differences, but certainly of no greater magnitude than one finds between premium conventional tapes). Oxide shed has seemed a bit greater than usual, calling for more frequent head cleaning, but this problem may be solved by the time production-line runs are undertaken. The machines, too, may have their little quirks when first introduced, but this is normal with any new technology.

From a purely theoretical basis, looking at the retentivity numbers, one would expect that low-frequency maximum-output levels from pure-metal tape should be considerably higher than for the ferric-oxide tapes. As Figure 2 shows, they are somewhat higher, but not quite as much as might have been predicted. The reason for this is that the tape manufacturers are using a somewhat thinner magnetic coating (expected to be standardized at about 4 microns) than is customary on conventional tapes. At least one reason for this has to do with the erase capabilities of the first-generation decks, which, though perhaps adequate for the thinned-coated tape, would probably not suffice for a somewhat thicker coating—or for a theoretically possible higher-retentivity metal-particle tape. At present there is still room for improvement in this area.

Do you need the advantages, especially at high frequencies, that metal-alloy cassettes will afford? Certainly not, if your only interest lies in dubbing from FM or if (unlike myself) you find no objectionable treble compression and distortion when recording more demanding source material. But if you find even the best cassettes currently available "running out of gas" at the very high frequencies, then you owe it to your ears to consider metal tape very seriously.

Digital Recorders

Waiting just a little farther down the road (but not quite as far as many think) is the home digital or PCM ("pulse-code modulation") recorder, which in consumer versions will undoubtedly use the kind of transport presently found in home videocassette recorders. By converting the continuously varying ("analog") signals of music and speech into strings of numbers expressing their instantaneous values, digital recording offers unquestionable potential advantages: a 90-dB (!) signal-to-noise ratio with 0.03 percent distortion, flat response to 20,000 Hz at all signal levels, total elimination of wow and flutter, and reduction of modulation noise below measurability. For the professional who works constantly with "live" sources—and needs, moreover, to be able to produce copies, and copies of copies, and copies of copies of copies with absolutely no loss or degradation from one generation to the next—digital recording is undoubtedly the way to go.

On the consumer front, however, the situation is a little less clear. The specifications cited above are for a professional system using "sixteen-bit" digital numbers and a digital sampling rate of about 50 kHz, which, with today's technology at any rate, is expensive beyond belief ($50,000 is a good...

...tailed not only intense pressure and high temperature but patent restrictions as well. Furthermore, chrome is relatively scarce, whereas ferric materials are abundant. Some manufacturers therefore chose to concentrate on ferric oxide and continued to experiment with cobalt enhancement, using as a performance reference base the characteristics of chromium dioxide.

Cobalt

In 1973, TDK introduced a tape with a new particle dubbed "Super Avilyn," and more cobalt-treated tapes were forthcoming from other manufacturers. The key to the stability of the new particle was the process of cobalt adsorption: the cobalt ion is "injected" into the thin outer layers of the ferric-oxide particles. And, as a preliminary step to achieving the full measure of enhanced performance, the basic ferric-oxide particle itself had to be highly refined to a uniform needle shape possessing a particularly high length-to-width ratio. The result was a material capable of coercivities exceeding 500 oersteds.

The use of stable gamma ferric oxide, the achievement of good particle shape and orientation, improved coating uniformity, and refinements in the preparation of the coating substance all contributed to the success of the final result. As a significant boon, cobalt-adsorption technology, like that of chromium dioxide, proved applicable to video, and tapes made in this way are to be found in some of the better videocassettes. (Incidentally, in the parallel development of audio and video tapes, each technology notably influenced and benefited the other. For example, the binder systems or coating thickness theories to withstand the comparatively rough usage of video applications—video machines use rotating heads, remember—are being used more and more in audio tapes, while various audio-tape sophistications have found their way into the video area.)

It seems most self-evident that there are many developments yet to come in the evolution of the cobalt-adsorbed ferric-oxide particle, as there are in the evolution of all other tape-coating materials. Many of them will be directed toward the needs of tomorrow's more refined technologies, but others have potential for ordinary consumer applications, and the products they lead to will be with us within the next decade.

Digital

The digital recording systems on the horizon will impose extreme information-densit...
"ballpark" figure for such a recorder. And there are at least preliminary indications that the standards for home digital recorders (which, as you might expect, are being set by the Japanese) will be considerably less demanding: for example, twelve- to thirteent-bit numbers with a 32-kHz sampling rate. This will still yield very impressive performance—well beyond that of current analog recorders, metal or no metal—but by the time costs come down from their approximately $3,000 level of today, other developments in analog recording (such as the introduction, expected shortly, of new noise-reduction devices) may raise its performance to a point a bit closer to that of home digital.

Ultimately, digital recorders will probably take over just as the PCM disc will ultimately render the conventional LP obsolete. Though a full takeover is many years away, I would expect to see a significant penetration of digital into the top-end recorder market in the next three to five years. Does this mean that all the enormous effort that has gone into the development of metal-alloy tape will be lost? By no means, for the high coercivity of metal gives it an enormous advantage (for example, far greater "packing density" for the digital "bits") over older, oxide-base tapes. Where the demand for top-quality tape performance is greatest, metal-alloy tape is where we are and—one way or another—where we’re going.

Two-speed Cassettes

In the meantime, another approach to surpassing the audio cassette’s present limitations has recently been introduced by B.I.C., and there is reason to believe that others will follow suit. This is the two-speed (1⅞ and 3⅛ ips) cassette deck which, in impact on all types of recording but to be accessible to the average audiophile.

Metal-alloy

Pure metal-alloy tape holds such promise that it can accurately be described as the next big advance in home recording. The advantage of metal-coated tape as a recording material lies in the greater magnetic flux density and coercivity that can be achieved with it—as much as twice that of gamma ferric oxide. As a result, one can have much higher signal-to-noise ratios, wider overall dynamic range, and larger maximum-output levels: in short, these tapes can contribute vastly improved performance.

Many questions with respect to appropriate standards for metal tape remain unresolved. There are formidable challenges yet to be met in the manufacturing of the tape, and there are other challenges that face tape-machine manufacturers, particularly with respect to devising heads that will handle the higher recording and erasing signals required.

Ferric Oxide

In the rush of new developments, we shouldn’t neglect the yet unrealized potential of gamma ferric oxide. Progress there will come about through improving the uniformity of particle size and regulating particle shape. The "raw" gamma-ferrite crystal has several inherent problems. It tends to have many branches (dendrites), limiting the magnetic properties of the particle; and it occurs in various sizes, making uniform distribution of the particles difficult in the coating stage of manufacture. Should both these problems be totally solved, the gamma ferric-oxide particle has, according to theory, a potential coercivity of 1,000 oersteds, which would make for tremendous recording and reproduction capabilities. Of course, no manufacturer has yet attained anything like that potential, but it is evident that the usefulness of the particle has improved dramatically over the years, from an initial (and pretty good) coercivity level of 250 to 280 oersteds in the first really high-performance cassettes in 1968 to the present level of some 450 oersteds, which can provide genuine high-fidelity results.

In years to come, further refinements in manufacturing will lessen the number of tape-coating "pores" that cause distortion and dropouts. There is also the possibility of reducing the noise level of the gamma ferric particle itself, with obvious benefits for the signal-to-noise ratio.

In sum, it appears that both the older and the newer tape technologies are constantly moving forward. Those who have made considerable investments in present-day equipment and software need therefore have no fear of obsolescence, for although improved new recording media will inevitably emerge, recorders already in the hands of consumers will also be benefiting from the improved "conventional" tapes that will be reaching the market at the same time.
People who aren’t using our new tape care kit should have their heads examined.

After every ten hours of recording or twenty hours of play back, you should spend a few minutes cleaning your tape heads.

Because in that period of time enough dust and residue accumulate on your tape heads to significantly affect the sound that comes out of your tape deck.

So at Maxell, we’ve developed a tape care kit to help you get the cleanest possible sound out of your recordings.

In addition to liquid head cleaner, it has special curved probes, swabs, a brush and a mirror to help you keep even areas you can’t see spotless. All of which means you’ll be getting maximum performance out of your machine. Year after year.

And if that doesn’t sound like a good idea, maybe you need to have more than your tape heads examined.
STEREO REVIEW'S SELECTION OF RECORDINGS OF SPECIAL MERIT
BEST OF THE MONTH

Surging, Blockbuster Jazz Spills from the Plenteous Horn of Expatriate Johnny Griffin In Inner City's New "Live in Tokyo" Set

TENOR SAXOPHONIST Johnny Griffin came into prominence during the late Fifties, first as a sideman with Art Blakey and Thelonious Monk, then as co-leader (with fellow tenor Eddie "Lockjaw" Davis) of a frenetically swinging quintet. He made numerous recordings as a leader (mainly for Riverside and its subsidiary label Jazzland) before 1962, when he took up residence in Europe. For the past decade and a half Griffin has been extremely active on the Continent, and that activity has been well documented on records, many of which have crept quietly into American catalogs.

Last September, Johnny Griffin made a rare appearance in the U.S.; he performed at the Monterey Jazz Festival and in clubs and concerts across the country, receiving critical acclaim wherever he went. Without the benefit of a record company's promotion machine, Griffin did not make quite the splash his fellow expatriate Dexter Gordon had made just before him, but he undoubtedly gained the following of a new generation of American jazz fans, and he certainly rekindled the fire some of us remember his setting years ago.

"Live in Tokyo" should help satisfy appetites whetted by Johnny Griffin's all-too-brief visit. Recorded at a concert in the Japanese capital in April 1976, it features a generous, representative serving of Griffin's robust, assertive tenor in an excellent quartet completed by pianist Horace Parlan, Danish bassist Mads Vinding, and drummer Art Taylor. Expatriates Taylor and Parlan moved to Europe in 1963 and 1973, respectively, but both had worked with Griffin before that; Parlan had replaced Junior Mance with the Griffin/Davis quintet, and Taylor—who developed a very close association with Griffin in Europe—taped a couple of sessions (for Riverside and Atlantic) with the tenor player during the latter's
two-month return to New York in the spring of 1963. (Among Taylor and Griffin’s more unusual collaborations was a complete and greatly modernized version of Vivaldi’s Four Seasons, recorded in Paris and issued here on Philips PHS 600 198).

The album gets off to a rousing start with All the Things You Are, which takes up all of side one. It features an extraordinary, surging performance by Griffin, who goes part of the way unaccompanied, spilling over five minutes of raw, wide-ranging emotion from his horn. That his playing matured during his years in Europe is nowhere more evident than in this solo interlude. Griffin can handle ballads with kid gloves, as he did on his 1961 tribute to Billie Holiday (“White Gardenia,” Riverside RLP 9387), and though he here demonstrates that same gentleness with his own When We Were Young, he can also transform a tender love song like The Man I Love into a totally de-romanticized, fast-paced tour de force. He does that on all of side three, building up his solo with computer-like logic, then lashing out with unexpected asides; halfway through the sixteen-and-a-half-minute track he sums up his comments with another unaccompanied statement, then throws the spotlight on Art Taylor, whose long solo sustains one’s interest where most other drummers would induce boredom. Also taken at an exceedingly fast tempo, but lasting less than four minutes, is Wee, the Denzil Best tune previously known as Allen’s Alley (for some reason it is credited here to J. J. Johnson instead of Best). Griffin gives a blockbuster performance on this version of it.

The album ends with an extended version of Soft and Furry, a Griffin composition originally recorded by him with a two-bass quintet in 1961 (“Change of Pace,” Riverside RLP 9368). This version has Griffin’s tenor floating gently to the corners of Yubinchenok Hall (where it was recorded) amid low-key, lyrical solos by Parlan and Vinding. In all, I would have to say that Johnny Griffin has made himself much too scarce in this country.

—Chris Albertson

JOHNNY GRIFFIN: Live in Tokyo. Johnny Griffin (tenor saxophone); Horace Parlan (piano); Mads Vinding (bass); Art Taylor (drums). All the Things You Are; When We Were One; Wee; The Man I Love; Soft and Furry. INNER CITY IC 6042-2 two discs $11.98.

Orchestral Music of Jan Dismas Zelenka (!)
In the Persuasive Light of Virtuosity

RECENT studies in the active musical life of eighteenth-century Bohemia have resulted in a modest revival of the music of Jan Dismas Zelenka. Who? Well may you ask. A contemporary of J. S. Bach, Zelenka was educated in Prague, Vienna, and Italy, eventually settling down in Dresden at the court of Frederick Augustus II. Although his main preoccupation was church music, he produced sufficient orchestral music to fill a three-disc album, and a new Deutsche Grammophon release purports to present it all.

A first hearing of Zelenka’s music leads one to believe that here is yet another high-Baroque workman echoing Telemann and Vivaldi. But the music wears surprisingly well, and Zelenka’s quite individual voice soon comes to the fore. His preference for concerto writing gives his orchestral music brilliant, mosaic-like textures and a constantly varying sonority. All his players are treated like virtuosos, and as the music progresses we are dazzled by technical feats—not only, as we might expect, from violin and oboe, but also from horns, bassoon, and cello. No combination eludes him, and his palette includes such striking musical colors as duets for horns and the paired rich sonorities of cello and bassoon. Overall, the effect is not so much orchestral as it is that of highly developed chamber music.

Another individual trait of Zelenka’s music is his occasional unusual turning of a phrase. Like any composer of the period, he draws heavily on stock harmonies and figuration, but every so often he will spice up an otherwise hackneyed sequence by taking it to an unusual harmony, or he will thwart our expectations of a commonplace melody by giving it a slight twist in an unexpected place. Zelenka may not be a composer of the first rank, but he must be given credit for an originality that can maintain one’s interest even today.

Alexander van Wijnkoop has assembled a remarkable group of eight soloists who possess just the right balance of technical brilliance and instinctive feel for chamber music. Every participant is clearly heard at all times in Zelenka’s lucid textures. With such a fine cast of characters, it is perhaps unfair to single out any individual, but one cannot help being struck by the horn

BARRY TUCKWELL: agile as a string player
playing of Barry Tuckwell. Zelenka was merciless in his demands, taking the instrument to extreme heights and running it through contorted passage work. Tuckwell tosses it all off with the agility of a string player, leaving one all but breathless. Then, at almost the next measure, we are delighted by oboist Heinz Holliger's exquisite phrasing, followed by a lovely muted duet on bassoon and cello by Manfred Sax and Dieter Leicht. Such playing is really la *crème de la crème*, and it certainly presents Zelenka's music in its best possible light. —Stoddard Lincoln

**ZELENKA: Capriccios I-V; Sinfonia à 8 Concertanti, in A Minor; Sinfonia à 8 Concertanti, in G Major; Ouverture à 7 Concertanti, in F Major; Hipocondrie à 7 Concertanti, in A Major. Heinz Holliger (oboe); Barry Tuckwell (horn); others. Camerata Bern, Alexander van Wijnkoop cond. DEUTSCHE GRAMMOPHON ARCHIV 2710 026 three discs $26.94, © 3376 014 $26.94.**

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**The Thompsons: Deeply Moving, Melodically Memorable, Beautifully Crafted Rock-and-roll**

A brief recap for those of you who don't recall any of my previous wild-eyed endorsements of the work of Richard and Linda Thompson: she, after the late Sandy Denny, is the best folk-oriented female vocalist out of England ever, and he is not only a brilliant songwriter but an innovative and expressive guitarist. Over the course of several albums they have used the English folk tradition as a jumping-off point for the most intensely personal and original of visions, creating in the process some of the most deeply moving, melodically memorable, and beautifully crafted rock-and-roll (for want of a better word) of the Seventies. Anyone who doesn't own at least one of their records is living on the edge of both musical and spiritual pauperism.

"First Light," the team's new album, retains all the virtues of their earlier work, but for the first time (along with their friends Maddy Prior, Ian Matthews, and others from the Fairport Convention/Steelye Span floating musical crap game) the Thompsons are working with one of those high-price American rhythm sections, and the result is that there's a vague whiff of California pop in the mix. A betrayal? Hardly, although this new stuff is certainly more accessible; lots of people I've tried to sell on Richard and Linda in the past (with a notable lack of success) have responded enthusiastically to "First Light," and I'd approve even if the music weren't so strong. Devotees need not worry, though; this is hardly the usual L.A. Bland Out. The opener, *Restless Highway*, may be as lush as anything by Fleetwood Mac, but it is still bedrock honest, and as for the rest, especially the hypnotic and chilling *Died for Love* and *Layla* (not the Clapton song), there isn't a band in California that could come within shooting distance of music this fine. If you think that I think that this is one of the most beautiful albums around right now in any genre, you catch on fast.

—Steve Simels

**RICHARD AND LINDA THOMPSON: First Light. Richard Thompson (vocals, guitars):**

Linda Thompson (vocals): Simon Nicol (guitar); Willie Weeks (bass); other musicians. *Restless Highway; Sweet Surrender; Don't Let a Thief Steal Your Heart; The Choice Wife; Died for Love; Strange Affair; Layla; Pavanne; House of Cards; First Light*. CHRYSLAS CHRIST 1177 $7.98.

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**Sedaka: Not a Single Socially Conscious Line in a Quarter Century—Thank God**

Poor fading rock star! Poor baby! It must be just awful, sitting there in your L.A.-canyon pad, remembering the hits you had only a few years ago, trying to get with the newest pop-socio-cultural mood swing, flicking the dust off your personally autographed picture of Bob Dylan, wondering why your record company hasn't even bothered to send you a sales report on your last album, why the audience at your last concert looked like the out-planet bar scene in *Star Wars*. It must be embarrassing, too, to be confronted with such a personal affront as Neil Sedaka's new release for Elektra, "All You Need Is the Music," which looks, smells, and listens like a smash on every count. "Oh, no," you moan, "not Sedaka—that hack! That superannuated Fifty-teener who's never written a socially conscious line in his life, the guy who's been grinding out the same hits for twenty-six years!"

In a word and a half, uh-huh. Sedaka has come up with at least three jumbo goodies on his latest platter: the title song, *All You Need Is The Music*, a disco number (read 'em and weep) so infectious that by the second chorus you find yourself moving around to the beat whether you particularly want to or not; a ballad, *Should've Never Let Her Go*, syrupy sweet, totally disarming, and sung in that androgynous falsetto he perfected years ago and which still exerts the same weird fascination; and the rip-snorting, high-spirited *Candy Kisses*. And that's not all. There's a little novelty titled *Tillie the Twirler*, about a girl who's paying for her ballet lessons by twirling her assets for audiences down at the Bijou. In this one Sedaka is pure delight, still the plump little precocity breaking up the relatives with his imitations and clowning at the parlor piano. Most of the song is performed with that pop-eyed mock shock
Eddie Cantor used to bring to naughty, "Ma, she's makin' eyes at me" lyrics, and at the very end he does a dialect imitation of a thee-ay-ter manajah that is at least the equal of Streisand's cutting up on Second Hand Rose.

There really isn't much point in discussing whether or not Sedaka, after almost three decades of work and success in popular music, is good, bad, or indifferent. He's here, he's an established fact of our popular-music life. Personally, I happen to think he's damned good most of the time—and that this time he's simply terrific.

—Peter Reilly

Elly Ameling: the Right Tone and Mood for Every Brahms Song

Some of the greatest (and therefore most often recorded) of Johannes Brahms' songs are contained in an excellent new collection on the Philips label, but there are also quite a few that seem to be first recordings—in my experience, at least. The program covers a wide span in the composer's life—from Op. 6 (published in 1853) to Op. 105 (1889). From the former comes Spanisches Lied, better known to some, perhaps, as In Dem Schatten Meiner Locken through the Hugo Wolf setting that came decades later. (It happens to be superior to the Brahms, but a comparison between the two is illuminating. Not for Brahms was Wolf's faithful submission to the poetic text, but, on the other hand, Brahms at least attempted to create a Spanish background for the song.) At any rate, the Brahms characteristics are all in evidence in this collection: songfulness, folk influences, directness, and mellow contemplation.

I make a point of the program's contents because it is rare to find a recital so thoughtfully chosen. I should also add that these songs are perfectly suit-
Rediscovered Gems of
The Vocal Repertoire:
Joseph Haydn’s Vocal
Trios and Quartets

Among other noteworthy phenomena of the twenty years or so after the end of World War II—the period that brought the Big Baroque Boom and the confirmation of Mahler’s conviction that his time would yet come—was one of the most exciting discoveries of all: the music of Joseph Haydn. A composer beloved as few of his colleagues have been, his reputation had nonetheless rested on relatively few works, and those for the most part performed year-in and year-out in inauthentic versions. By now, of course, the distorted scores have been corrected, all the symphonies, sonatas, trios, and string quartets have been recorded, and even the operas are in process of being recorded complete. Nonetheless, it would appear that there are still unfamiliar areas of Haydn’s vast output to be explored—and how rewarding such exploration invariably proves! One needn’t be a fancier of part songs, or especially oriented toward vocal music, to be enchanted by the baker’s dozen of vocal quartets and trios Haydn composed between 1799 and 1801, all of which have just appeared simultaneously on the Musical Heritage Society and Peters International labels—the same recording, derived from the French Arion catalog.

One needn’t even be concerned with the texts, so delicious are these songs in terms of their harmonies alone, but it must be said that Haydn was most imaginative in choosing the verses for this project (which was planned to run to a total of twenty-five numbers but broke off midway). Most of the verses are lighthearted or humorous, some are unpretentiously devotional, and nearly all are philosophical in one sense or another. The best-known—if any may be so described—are Die Harmonie in der Ehe, whose sweetness gives a subtle edge to its satirical content, and Der Greis, whose first line (“My strength is gone, I am old and weak”) Haydn took to inscribing on his visiting cards. There are fresh twists in virtually all of the songs, one of them being the barely whispered “stumm” (mute) at the end of Die Beredsamkeit, a setting of a verse by Lessing whose argument is “Water makes us mute.” Wine inspires eloquence.

The care lavished on the words by the excellent singers of the Lieder Quartett is complemented by the musicianship of the performers (the fine harpsichordist as well as the singers). The extremely well-recorded results are enchanting, leaving the listener to wonder why such gems should be appearing now in the context of a “discovery” instead of having been long familiar and as cherished as Haydn’s symphonies and string quartets. The first nine of the titles listed below are quartets; the next is a trio for soprano, tenor, and baritone; the one after that a trio for soprano, alto, and tenor; and the two final songs are sung by two tenors and baritone. Both discs offer not only the same recording but also the same annotation (though the English translation has been edited on the MHS version). I would recommend the MHS release over the Peters not only because it is a bit less costly, but also because the absolutely silent pressing is even more successful than Peters’ very good one and, most important, because the extremely well-recorded results derived from the MHS release are enchanting, leaving the listener to wonder why such gems should be appearing now in the context of a “discovery” instead of having been long familiar and as cherished as Haydn’s symphonies and string quartets. The first nine of the titles listed below are quartets; the next is a trio for soprano, tenor, and baritone; the one after that a trio for soprano, alto, and tenor; and the two final songs are sung by two tenors and baritone. Both discs offer not only the same recording but also the same annotation (though the English translation has been edited on the MHS version). I would recommend the MHS release over the Peters not only because it is a bit less costly, but also because the absolutely silent pressing is even more successful than Peters’ very good one and, most important, because

HAYDN: Vocal Trios and Quartets. Die Harmonie in der Ehe; Aus dem Dankliede zu Gott; Abendlied zu Gott; Der Augenblick; Die Beredsamkeit; Der Greis; Alles Hat Seine Zeit; Warnung; Wider den Ubermut; Betrachtung des Todes; An den Vetter; Daphnens Einziger Fehler; An die Frauen, Lieder Quartett—Ana-Maria Miranda (soprano), Clara Wirz (alto), Marcel Quillevere (tenor), Udo Reinemann (baritone); Helmut Reinemann (tenor); Brigitte Haudebourg (harpsichord). MUSICAL HERITAGE SOCIETY MHS 3869 $4.95 (plus $1.25 postage and handling from the Musical Heritage Society, 14 Park Road, Tinton Falls, N.J. 07724).

HAYDN: Vocal Trios and Quartets. (Same contents and performers as above.). PETERS INTERNATIONAL PLE 076 $7.98.
J. S. BACH: Concerto in A Minor (BWV 1056); Concerto in E Minor (ed. Radeke from BWV 1059 and 35); Suite No. 2, in If Minor concerto for harpsichord, oboe, and strings; arrangement of the F Minor Harpsichord A Minor Concerto here is a transposition and for flute and orchestra, James Galway has re-

arranged to emerge from within the orchestra. This works best, I think, in the first two concertos. In the latter ones I began to feel a little uneasy about it. Of course, the orchestral playing, especially in the Fourth and Fifth Concertos, is altogether superb. Where Alexis Weissen-

ermos distinguishes himself is in the fluency and elegance of his pianism in the fast move-
ments and the remarkable tonal beauty he brings to the slow ones. I would question, however, the treatment accorded the adagio of the Emperor, which seems almost static. In general, tempos here tend toward the deliber-
ate, and utmost attention is paid to matters of dynamic detail, texture, and carefully articu-
lated figuration. It would be wrong to call these performances "fussy," but they do lack the sinew and drive of many others. If you prefer your Beethoven piano concertos more elegant than rugged, this package will be very much to your taste.

The four solo piano pieces are carried off with great brilliance, most notably in the so-
called Rage over a Lost Penny (Weissenberg makes the most of its Hungarian flavor) and the handsome C Minor Variations.


Vernon (viola); Cleveland Orchestra, Lorin Maazel cond. LONDON CS 7097 $6.98.

Performance: Volatile Recording: Good

Berlioz's marvelous evocation of explora-
tions and experiences in Italy is not only well represented in currently available recordings, but at least two—the McInnes/Bernstein and the Zukerman/Barenboim versions—are of both recent vintage and exceptional distinc-
tion. The earlier Menuhin/Davis recording, though, still occupies a special niche.

Robert Vernon's viola protagonist in this newest recording is perhaps the most with-
drawn and dreamy of all, even to the point of

CLASSICAL DISCS AND TAPES

Reviewed by RICHARD FREED • DAVID HALL • GEORGE JELLINEK • PAUL KRESH STODDARD LINCOLN • ERIC SALZMAN

that need the pithiness of a violin, oboe, or harpsichord to sustain their vigor. When played by the flute, the music becomes fussy. Galway's constant pushing of the tempos and his legato playing in no way compensate for the flute's being simply the wrong instrument for this music. The slow movement is perfect for the flute, however, and Galway turns in a very nice performance of it. The E Minor Concerto, even though not designed for the flute, comes off rather more effectively and is a handsome addition to the repertoire.

But if Galway is to play Baroque music, he owes it to his listeners, as well as to himself, to study and apply consistently the performance practices of the era. He rightly applies double dotting to the dotted eighths in the overture of the Suite in B Minor, for instance, but he plays the dotted quarters as written. All dotted notes should be double- or even triple-dotted, and this application to one rhythmic value but not to another produces an unwanted raggedness. Galway should also reconsider the length of appoggiaturas, especially in the sarabande and menuet, and apply the excellent articulation he uses in the variation of the polonaise and badinerie to the pas-

dage work of the ouverture, rondeau, and bourrées. Such felicities would lend lightness and grace to a rather routine solidity. S.L.

BEETHOVEN: Piano Concertos Nos. 1-5;

Rondo a Capriccio in C Major, Op. 129
( "Rage over a Lost Penny"); Bagatelle in A Minor ("Für Elise"); Rondo in C Major, Op. 51, No. 1; Thirty-two Variations in C Minor. Alexis Weissenberg (piano); Berlin Philhar-
monic Orchestra (in concertos only), Herbert von Karajan cond. ANGEL □ SD-3854 four discs $31.92.

Performance: Elegant Recording: Good

Given the dozen-plus Beethoven piano-con-
certo cycles currently listed in Schwann, at least half of which fall into the category of "distinguished achievement," I can only say of this latest entry that it is neither the best nor the least and does have some distinctive merits of its own.

Refinement and elegance are the hallmarks of every performance here. More often than not, it is Herbert von Karajan's Berlin Phil-
harmonic that sets the tone and establishes the musical balance in the concertos, for the piano is very seldom up front, seeming rather to emerge from within the orchestra. This works best, I think, in the first two concertos. In the later ones I began to feel a little uneasy about it. Of course, the orchestral playing, especially in the Fourth and Fifth Concertos, is altogether superb. Where Alexis Weissen-

berg distinguishes himself is in the fluency and elegance of his pianism in the fast move-
ments and the remarkable tonal beauty he brings to the slow ones. If you prefer your Beethoven piano concertos more elegant than rugged, this package will be very much to your taste.

The four solo piano pieces are carried off with great brilliance, most notably in the so-
called Rage over a Lost Penny (Weissenberg makes the most of its Hungarian flavor) and the handsome C Minor Variations.

D.H.
seeming uninvolved. But is this his or conductor Lorin Maazel's view of the matter? When it's the orchestra's turn to show its stuff in the Brindig's Orgy finale, Maazel and his men give their all, to splendid effect. Even with the general excellence of London's recording in Maazel's favor, I rate the recent entries in the Harold in Italy race as: win, Bernstein; place, Maazel. D.H.

BRAHMS: Songs (see Best of the Month, page 86).

RECORDING OF SPECIAL MERIT

FALLA: La Vida Breve. Teresa Berganza (mezzo-soprano), Salud; José Carreras (tenor), Paco; Paloma Perez Inigo (soprano), Carmela; Alicia Nafe (contralto), Grandmother; Juan Pons (bass), Uncle Sarvaor; Ramón Conteras (baritone), Manuel; Manuel Mairena, the Singer. Narciso Yepes (guitar); Lucero Tena (castanets); Ambrosian Opera Chorus; London Symphony Orchestra, Garcia Navarro cond. El Amor Brujo. Teresa Berganza (mezzo-soprano); London Symphony Orchestra, Garcia Navarro cond. DEUTSCHE GRAMMOPHON 2707 108 two discs $17.96; © 3370 028 $17.96.

Performance: Very good
Recording: Very good

La Vida Breve is, in a way, a Spanish Cavalleria Ruricane. But whereas the Mascagni opera sprang from the abundant well of Italian verismo, Falla's concise little drama was the only viable manifestation of Spain's impoverished operatic life in the early 1900's—the zarzuela was the only form of musical theater the Spanish public favored. Falla was not an experienced opera composer, and La Vida Breve is not without some intrinsic construction flaws, but it has haunting music and its combination of high emotions and spirited dances is undeniably effective. Sarah Caldwell's projected Boston revival with Victoria de los Angeles will probably lead to a general renewal of interest in this undeservedly neglected opera.

De los Angeles sang Salud in two previous recorded versions of La Vida Breve (RCA mono LM 6017, deleted, and Angel S-3672, still in the catalog). In the present set, Teresa Berganza sings beautifully, but she cannot quite equal De los Angeles' blend of spon- taneous lyricism and touching poignancy. Fal- la's bewitching sonorities and pungent rhythms are nicely captured by the young Spanish conductor Garcia Navarro, and the rest of the cast is uniformly good. I still prefer the Angel set, but only by a small margin. Both sets, incidentally, use an authentic flamenco cantaor (singer) in the wedding scene, and here, too, the Angel version is slightly ahead of the DG one.

The fourth side in the Angel set is devoted to Tonadillas by Granados, which De los Angeles sings enchantingly, but El Amor Brujo seems like a more appropriate pairing. That familiar and much-recorded work sounds really convincing to me only with a native vocalist, for non-Spaniards tend to compensate for a lack of authenticity by overstatement. Thus, in contrast to some explosive and rau- cious treatments in previous versions, Teresa Berganza is here sultry and seductively sin- ingualing. The orchestral execution is not the most exciting imaginable, but it is elegant and richly recorded.

HANDEL: Acis and Galatea. Norma Bur- rowes (soprano), Galatea; Anthony Rolfe Johnson (tenor), Acis; Martin Hyl (tenor), Damon; Willard White (baritone), Poly-phemus. English Baroque Soloists, John Eliot Gardiner cond. DEUTSCHE GRAMMOPHON ARCHIV 2708 038 two discs $19.96.

Performance: Frustrating
Recording: Crystal clear

HANDEL: Acis and Galatea. Jill Gomez (so- prano), Galatea; Robert Tear (tenor), Acis; Philip Langridge (tenor), Damon; Benjamin Luxon (bass), Polyphemus. Academy of St. Martin-in-the-Fields, Neville Marriner cond. ARGO ZRG 886-7 two discs $17.96, © KZRG 886-7 $17.96.

Performance: Dramatic
Recording: Marvelous

The trouble with the DG Archiv Acis is that the singers and conductor seem to be at odds most of the time. The singing ranges from very good to outstanding. Norma Burrowes has the perfect voice for Galatea, uses it dramatically where needed, and is always conscious of word coloration. She is also conversant with Baroque tradition and offers some fine ornamentation. Her equal is found in Martyn Hill as Damon. Anthony Rolfe John-

PCM: Two Quartets

DENON's continued emphasis on chamber music, with the conspicuous involvement of some of the outstanding Czechoslovak ensembles, reconfirms the high musical purpose to which its PCM (pulse-code modulation) digital technique is applied. A new disc by the Prague String Quartet, recorded in Tokyo in November 1977, shows the now familiar PCM characteristics at their best—apparently un- restricted dynamic range, freedom from distor- tion, no sound but the music—and the engi- neer has contributed a thoughtful and realistic balancing of the performers. It happens that neither Borodin's Second Quartet nor Prokofiev's Second is very well represented in the current catalog, so this particular coupling is of real interest. The Borodin performance is less voluptuous than some listeners may wish—less, certainly, than in the hands of the Komitas Quartet (Angel ® 35239 of blessed memory) or in the best of the previous stereo versions, that of the Drole' Quartet (Deutsche Grammophon 139 425, also deleted)—but there is a very appealing gutsiness that wears very well. Only in the famous Notturno did I feel the Praguers' eschewal of sentiment led to a degree of coldness and a touch of the pro- saic, most noticeable in the throbbing viola figure at the end of the movement. On the whole, though, this is a handsome performance as well as the best-sounding version yet of this lovely work.

The Prokofiev side makes an even stronger impression. The work is based on Caucasian folk music, and the relish with which the performers dig into it is almost visible. Like the Carmirelli Quartet in its oldish but still attrac- tive version (London STS-15152), they set a deliberate tempo in the first movement in or- der to accommodate the emphatic accents of the bearish theme, which comes off with an abundance of good humor. The middle move- ment, derived from a love song, is taken a bit slower than I have ever heard it before (no eschewal of sentiment here), but it never loses momentum, and the finale is set forth as the spirited summing-up it is. A real winner—and now attention might be directed to Prokofiev's neglected First Quartet.

—Richard Freed

BORODIN: String Quartet No. 2, in D Major.

Beethoven String Trios

The string-trio literature is rather like Old MacDonald’s farm: plenty of stock but not many thoroughbreds. What results from the challenge of writing for a trio of strings is usually just the kind of makeshift that players can turn to when the second fiddler fails to show up for a quartet evening.

Even Beethoven found the challenge less than exhilarating. His five string trios begin with one (the E-flat Major, Op. 3) that is an echo of Mozart’s famous K. 563 divertimento (same key, same instruments, same number of movements) and end with one (the C Minor, Op. 9) that similarly foreshadows his own Fourth Quartet (Op. 18). Between are the other two trios of Op. 9 and the jolly Serenade in D Major, Op. 8.

Since chamber groups have rarely made a living (even a poor one) from playing string trios, most ensembles that purvey such music belong to the category known as ad hoc. Two such are responsible for recently issued recordings of the Beethoven trios. One ensemble (on Musical Heritage Society) consists of the fine, well-known players Erick Friedman (violin), Emanuel Vardi (viola), and Jascha Silberstein (cello)—and principal cellist of the Metropolitan Opera Orchestra, and the other (on Hungaroton) of the fine, little-known players Denes Kovacs, Geza Németh, and Ede Banda (same order of instruments).

The difference in the musical approaches of the two groups is evident even before a note is sounded to the public today. Acis and Galatea de-
life of the performance. Marriner’s choice of tempos is uncanny; the mood of each individual number is perfectly captured, and the pacing of the work as a whole brings out the operatic sense of drama that is inherent in Handel’s score but is rarely realized. The problem with this performance is the singers. Both Jill Gomez and Robert Tear emphasize the dramatic elements of their roles, but one immediately senses that Miss Gomez is more at home in the repertoire of the later eighteenth and early nineteenth centuries than in Handel’s highly controlled vocal idioms. Mr. Tear is rather too heroic for an Arcadian shepherd, and his frequent scooping for high notes is annoying. Philip Langridge is too bland even for the part of Damon. The exception is Benjamin Luxon, whose marvelously blustering portrayal of Polyphemus makes a wonderful mockery of Baroque operatic tradition, especially in his mad scene and his bull-in-a-china-shop version of “Ruddier than the cherry.”

It is ironic and frustrating that Archiv and Argo recorded Acis at about the same time, for a composite of their different musical forces—Norma Burrows, Anthony Rolfe Johnson, and Martyn Hill from the Archiv production and Benjamin Luxon, Neville Marriner, and the Academy of St. Martin-in-the-Fields from the Argo—might have created a single ideal performance.

S.L.

RECORDING OF SPECIAL MERIT


Performance: Hair-raising

Recording: Beautiful

This is, I guarantee, so unlike any Water Music—stay, any Handel, indeed any Baroque orchestral music—you have ever heard that it will astonish you. Perhaps even astonish and delight... but of that I am far less certain. Right from the first needle drop, into a Grave that sounds as though it’s being played at the wrong speed, Nikolaus Harnoncourt and his Amazing Original Instrument Ensemble produce the most hair-raising music that has ever been made in the name of the Baroque: whirlwind tempos, brassy blasts, triple dotting, as well as the most exquisite and the most vulgar sound and phrase. All of it performed to perfection, of course. No halfway measures or approximations here; fast is fast, slow is slow, and the sound is big, urgent, rollicking, almost frenetically festive.

Is this King George’s Water Music? Is it Handel’s? Is it Baroque? Is it good sense or merely willfulness? Darned if I know. When it works, it’s thrilling. Harnoncourt is capable of instilling a vitality, a contemporaneity, into Baroque music that is unique and exciting. It is exceedingly rare that our concert classical music ever approaches anything like this in live performance, let alone in recording, and my instinct is to stand up and cheer. Why should popular music get all the high times while classical-music lovers have to suffer the piety of a respectable church service? On the other hand, I warn you that this performance is so off-beat and even outrageous that old lovers of this music may find themselves feeling personally insulted. I do think that Harnoncourt and the Concentus are setting a new standard and style in the performance of early orchestral music—pure in sound, viva-
Reverential over the dramatic is not, in my view, inappropriate.

Outstanding among the three soloists is José van Dam, whose clearly focused sound is balm to the ear and whose utterances are noble, eloquent, and flowingly lyrical. Helen Donath’s tones reveal a little more flutter than has herebefore been evident in her singing, but she is always clear, secure, and in full command of the florid requirements. Robert Tear’s voice is not basically attractive, but he is a well-schooled singer who cannot be faulted on musical grounds. In sum, this is an unspectacular but thoroughly satisfying new re-Creation.

G.J.

Haydn: Vocal Trios and Quartets (see Best of the Month, page 87)

Recording of Special Merit


Performance: Stunning
Recording: First-rate

Elmar Oliveira is, of course, the first American violinist to win a gold medal in the Tchaikovsky Competition in Moscow, which accomplishment he added to his already impressive list of credits last summer. Last September I heard him play the Franck sonata and Bartók’s Roumanian Dances in Washington, and I came away thinking that while there are lots of prize winners these days, there are never many fiddlers in his class. Oliveira is a stunning player: he has flair, passion, and extraordinary identification with the material he chooses to play; his tone is rich and warm, his intonation apparently flawless—and he is exceptionally musical. I would have expected his recordings to focus on the big Romantic staples, but his championing of these new works is a further indication of his seriousness. Karel Husa is a gentle man with deep feelings about the human condition; his music can’t help expressing compassion, even when he is admittedly experimenting with instrumental effects. His thirty-six-minute sonata, completed in 1973, calls for slides and quarter-tones from the violinist and Cowellesque clusters and plucking from the pianist. It is an intense and striking work, austere in its language, influenced, Husa tells us, “by some events of the past years... continuous wars, senseless destruction of nature, killing of animals, and, on the other hand, man’s incredible accomplishments in space.” It is not in any way a graphic representation of such events, but rather reflects the deep emotional response they have provoked in the composer. Oliveira does nobly by the work, and David Oei is a full partner in terms of both the part assigned to his instrument and the level on which he deals with it. Touched on the record are Pamela Layman’s work, or even her name, before. Her Gravitation I, composed for Oliveira in 1974, was “largely inspired by the work of Earle Brown and the graphics of M. C. Escher.” The score is laid out with a section of music inside a large central circle and other sections in smaller circles positioned around it; once the material in the larger circle is performed it is up to the violinist to choose the sequence in which the rest is played, but between any two of the smaller circles he must return to the larger one. Depending on the performer’s choices, the piece may run from five to eight minutes. Oliveira clocks in at five minutes, twenty-six seconds, and if he doesn’t make me impatient for the appearance of Gravitation II, his beautiful tone does set up an eagerness for the Kreutzer Sonata and the Brahms concerto—which, I suspect, will not be too long in coming. The recording, produced by Richard Gilbert, is absolutely first-rate, and the surfaces on my review copy were as quiet as one could ask.

R.F.

Ives: Songs (see Collections—William Parker)

Layman: Gravitation I for Solo Violin (see Husa)

Liszt: Angelus; La Lugubre Gondola; Epirhalam; Am Grabe Richard Wagner; Romance Oubliee; Elegies I and II; Benedictus. Andras Kiss (violin); Zoltan Toth (viola); Ede Banda, Miklos Penenyi (cellos); Hedy Lubik (harp); Istvan Lantos, organ; Sandor Margittay (harmonium); New Budapest String Quartet; Hungarian Chamber Orchestra, Vilmos Tatrai cond. Hungaroton SLPX 11798 $7.98 (from Qualiton Records, Ltd., 65-37 Austin Street, Rego Park, N.Y. 11374).

Performance: High-quality Hungarian Recording: The same

Did you know that Liszt wrote chamber music? I didn’t either, but here, from Hungary, is a whole album of it. Actually, there isn’t all that much, and a lot of it is arrangements by Liszt from his other works. The Angelus here is a string arrangement from the Années de Péterinage, the Benedictus is a violin-and-organ version of a movement from the Coroneation Mass, the Romance Oublée is a viola-and-piano transcription of a solo piano piece. Much of this music is also late and interwoven, such as At the Grave of Richard Wagner for string quartet and harp. Only the Epirhalam for violin and piano and, most especially, the two wonderful elegies—one for violin and piano, the other for cello, piano, harp, and harmonium—have anything like a real chamber-music character. But everything here offers insight into an intimate, meditative, and decidedly unfamiliar Liszt. The performance and recording are of high quality throughout. An interesting oddity.

E.S.

Mahler: Symphony No. 5; Symphony No. 10, Adagio. Philadelphia Orchestra, James (Continued on page 96)
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CIRCLE NO. 39 ON READER SERVICE CARD
THE notes accompanying Deutsche Grammophon’s premiere recording of Leonard Bernstein’s recent Songfest (subtitled “A Cycle of American Poems for Six Singers and Orchestra”) describe the work as a contemporary artist’s evocation of America’s artistic past. For texts Bernstein chose thirteen poems spanning three hundred years of this country’s history; annotator Jack Gottlieb summarizes their subject matter as “... the American artist’s experience within a fundamentally Puritan society.” I found the recorded performance to be deeply affecting, equally apt both literarily and musically to provoke thought and emotion. Songfest seems to me one of the finest things Bernstein has done as a composer of art music: there appears to be no discrepancy here between his creative persona and his inner self, and I was both entertained and moved by it from start to finish.

The mock-pompous “Opening Hymn” (on Frank O’Hara’s To the Poem—“Let us do something grand just this once...”) for all six singers is riddled with anachronistic allusions to the music of Ives’ Second Symphony. The ensuing solo by baritone John Readon Lawrence Ferringhetti’s The Pennycandystore Beyond the El is jazz flavored and seems a kind of memorial to Marc Blitzstein. Things turn fierce and serious with soprano Clamma Dale’s impassioned project of a poem in Spanish (Puerto Rico’s Julia de Burgos) that contrasts woman as homebody with woman as free spirit. With the other singers functioning as a chorus, bass Donald Gramm is next heard in an immensely poignant Wait Whitman poem on the plight of the homosexual in our society (“Behold love choked, correct, polite, always suspicious...”); the musical language is an intense Coplandesque lyricism.

The sequence of three solos is followed by a group of ensembles: duet, trio, duet. The first, with Readon and mezzo-soprano Rosalind Elias, stunningly combines texts by Langston Hughes (I too, Sing America) and June Jordan (Okay “Negros”) to display the great contrast between black attitudes of the Twenties and the Seventies (Elias is definitely the star of this number). At the opposite emotional extreme is the trio for Dale, Elias, and mezzo Nancy Williams on colonial poet Anne Bradstreet’s To My Dear and Loving Husband: this gets a quasi-Ivesian treatment with exquisitely interlaced vocal lines. Gertrude Stein’s Storyette H.M. (a duet for Dale and Gramm) allows the mordant irony so characteristic of Bernstein’s best music to come to the fore. The jazz and Latin elements he uses here underline this irony, recalling for me his score for Trouble in Tahiti.

The next four settings evoke loss and despair, and the music, I think, is the finest in the entire work. All six singers are heard in e.g. cummings’ if you can’t eat you got to, a grim, desperate setting in Thirties-radio jazz style. The sentiments of Conrad Aiken’s Music I Heard with You (a solo by Elia) are treated in a decidedly theatrical manner; the instrumental word painting is highly effective and the canonic ending works beautifully. The irony and sarcasm of Candide are recalled by the music for Gregory Corso’s Zizi’s Lament (a solo by tenor Neil Rosenshein), but with a distinctly Arabic tinge. And Nancy Williams truly does herself proud with Edna St. Vincent Millay’s famous sonnet, “What lips my lips have kissed,” which Bernstein treats with great effect in an arioso chromatic style.

Redemption is evoked in the “Closing Hymn,” in which all the singers perform both solo and in ensemble. The text is Edgar Allan Poe’s highbrow apostrophe to the Islamic angel of music (“‘None sung so wildly well as the angel Israfil’”), and it gets an all-out virtuoso setting, with much rhetorical stress on “wildly...” Musical invention as an end in itself and its own justification appears to be the message here.

Leonard Bernstein’s musical eclecticism (not ecogestion) has borne superb fruit with Songfest. The performance I found gripping in every respect, but the recording, though never less than good, is a bit inconsistent; the extremely close microphone setup for the soloist in A Julia de Burgos, for example, produces a somewhat unsettling split perspective between voice and orchestra. But that is a minor flaw in an otherwise fine achievement all around.

—David Hall

BERNSTEIN: Songfest (A Cycle of American Poems for Six Singers and Orchestra). Clamma Dale (soprano); Rosalind Elias, Nancy Williams (mezzo-soprano); Neil Rosenhine (tenor); John Readon (baritone); Donald Gramm (bass); National Symphony Orchestra, Leonard Bernstein cond. Deutsche Grammophon 2531 044 $8.98.

Levine cond. RCA ARl2-2905 two discs $15.96, @ ARl2-2905 $15.96.

Performance: Strong

Recording: The finest

Mahler’s Fifth Symphony and his unfinished Tenth have more performance-edition problems than any other of his works, the former because he revised the instrumentation so many times, the latter because he never even reached the final stage of instrumentation before his death. (A complete performing edition of the Tenth was realized from Mahler’s sketch only a few years ago by Deryck Cooke; until then only the Adagio, the only part Mahler himself finished, was widely known and performed.) For this recording, James Levine used the now-accepted final revision of No. 5, which Mahler made in 1911 for a New York Philharmonic performance, and the Deryck Cooke edition of the No. 10 Adagio. The impressive performances are part of a projected complete Mahler symphony cycle that Levine is recording with various orchestras.

Levine’s Mahler is strong, clear, long-lined, and much to the composer’s advantage; in the opera house, Levine here shows his ability to evoke a high level of spirit and individuality from orchestral musicians while controlling clarity and overall form. There is some loss of moment-to-moment excitement, as if the conductor were deliberately holding himself back in favor of responsibility to the score and good relationships with the musicians. Also, the fiendishly difficult string parts (the high violin passages mostly) are not always realized with the final bit of polish. But in general Levine is very successful in sustaining movement, and the performance was recorded with the greatest sensitivity to balance and timbral quality.

E.S.

RECORcING OF SPECIAL MerIT

PROKOFIEV: Piano Concerto No. 1. Romeo and Juliet: Scena; Dance of Young Girls with Cello. BHEL: Piano Concerto for the Left Hand: Pavane pour une Infante Défunte. Andrei Gavrilov (piano); London Symphony Orchestra, Simon Rattle cond. ANGEL S-37486 $7.98.

Performance: Youthful, zesty

Recording: Fat

Prokofiev wrote his First Concerto at the age of twenty-one, and its interpreters here—a Soviet pianist and an English conductor—are scarcely more than a year or two older than that. Although the brashness and iconoclasm that the St. Petersburg Conservatory of its ear six and a half decades ago is not so obvious any more—the work sounds almost Romantic today—the music’s qualities of zest, fantasy, and wit are enduring. Andrei Gavrilov and Simon Rattle catch the spirit, not in the old motoric-futuristic mode that used to be considered the style for early Prokofiev, but with genuine affection and liveliness.

The Ravel Left Hand Concerto, written for pianist Paul Wittgenstein who lost an arm in World War I, is late, dramatic, intense, modernistic, and, for Ravel, rather weighty. The work has a curious amalgam of Hispanic, jazz and modernist influences that are a long way from the impressionism and neo-Classicism usually considered the hallmarks of Ravel’s style. This music also lends itself to the

(Continued on page 98)
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Julian Bream: in a Class by Himself

Julian Bream recorded one of Villa-Lobos' twelve guitar etudes (No. 8, in C-sharp Minor) and the second movement of the Suite Popular Brasileira (the Schottish-Chôro) some years back on RCA LSC-3231, along with the Guitar Concerto and Five Preludes. Now RCA has released Bream's versions of all the etudes and the entire suite. It is good to have these collections in full, for they are among the most fascinating works anyone has created for the guitar—not so much in terms of the challenges posed to the performer, but simply for their strong and direct appeal to listeners who may or may not be especially guitar-oriented. The Suite Popular Brasileira (usually known, as RCA lists it, under its French title, Suite Populaire Brésilienne) has four movements in which European dance forms (mazurka, schottisch, waltz, gavotte) are quite effectively "Brazilianized." It is one of those works one finds oneself going back to again and again with unfading pleasure. And, equally as the Schottich-Chôro is, the suite's concluding Gavotta-Chôro is more ingratiating still. There is a sort of gentle therapy in this music, or so it seems in Bream's sensitive performance—unburried, lingering over each phrase just enough to distill its essence, never fussy enough to make the listener unduly aware of the presence of an "interpreter." The etudes are no less stunning in his hands. These too are highly expressive pieces, and Bream brings a great deal of subtlety and varied color to his evocative realizations. He is quite in a class by himself in this music, which seems to withhold none of its secrets from him; indeed, if he has given us anything more altogether cherishable in his two decades and more in the recording studio, it has not come my way. The sound is just about ideal, rich enough to create a warm presence yet untroubled by overblown reverberation or the extraneous sounds that gum up some close- focused guitar recordings. The only complaints I might register would concern RCA's failure to list the etudes by key and to provide clear band separations between the individual pieces. —Richard Freed


Performance: Exquisite
Recording: Alive

If ever a score captured the formal delicacy of the visual art of Lancret or Boucher it is Jean-Philippe Rameau's unjustly neglected opera-ballet Zephyre. Never performed during the composer's lifetime, Zephyre has a slim plot dealing with Zephyre's love for Cloris, a nymph of Diana who responds to his advances emotionally but rejects him physically because of her vow of chastity. When Diana arrives on the scene with her latest amour, Endymion, she releases Cloris from her vows and blesses the ecstatic pair. Rameau set the text in his most tender and delicate manner. The vocal writing reveals the emotion behind each word, and the violins and flutes hover around the singers in an intricate dialogue of twittering birds, gentle breezes, and languid sighs. In the central part of the score, a portrayal of young love, the exquisite singing is interrupted by delicious minuets, gavottes, sarabands, and other elegant dances. Two airs, "Je dois la naissance à l'Aurore" and "Vous ne devez l'éclat des fleurs," are particularly striking, and the final chorus is a miracle of hushed rejoicing. This première recording is of a realization by Roger Blanchard prepared for the Albi Festival in 1976. The singers are well suited to their roles and keep their voices light for the Schubert idiom. But that idiom is broad enough to embrace a healthy variety of interpretative approaches, and what Blanchard and his associates have given us here strikes me as no less idiomatic in its exuberant way. This is surely the most robust Trout on records, and its lusty vigor and drive—even in the first movement and the penultimate one (the Schottische)—is far more appealing than the tremoloed, fussy enough to make the listener unduly aware of the presence of an "interpreter." The etudes are no less stunning in his hands. These too are highly expressive pieces, and Bream brings a great deal of subtlety and varied color to his evocative realizations. He is quite in a class by himself in this music, which seems to withhold none of its secrets from him; indeed, if he has given us anything more altogether cherishable in his two decades and more in the recording studio, it has not come my way. The sound is just about ideal, rich enough to create a warm presence yet untroubled by overblown reverberation or the extraneous sounds that gum up some close-focused guitar recordings. The only complaints I might register would concern RCA's failure to list the etudes by key and to provide clear band separations between the individual pieces. —Richard Freed


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Riccardo Muti's First with the Philadelphia Orchestra

Riccardo Muti's first recordings with the Philadelphia Orchestra are also Angel's first recordings with the Philadelphia Orchestra and, to complicate matters still further, they are the Philadelphia's first recordings in a new location: the old Metropolitan Opera House, now the Evangelistical Church of the Reverend Thea Jones, on North Broad Street in Philadelphia. It is impossible to separate out all these factors in determining the character of these new records. I don't doubt that what I hear is in part due to Muti, in part to the orchestra, in part to Angel's recording philosophy and their equipment, and in part to the hall, but the proportions of things, as well as their interactions, are beyond me just now.

Muti, of course, is the Philadelphia's principal guest conductor and presumably Ormandy's successor at such time (which might be very soon) that he decides to retire as music director. Muti has recorded enough with other orchestras to give us some idea of his conductorial abilities and style, but not really enough for us to predict what he might do with various areas of the repertoire. He has not, to my knowledge, recorded a Beethoven symphony before, although he and Richter made an estimable combination in the Beethoven Third Piano Concerto. But, as I say, what I hear here I cannot attribute solely to his direction.

What I hear (particularly in the Beethoven) is splendid orchestral execution, a smooth homogenized orchestral sound, rather fast. Italianate tempos in the faster movements and a decisive sticking to the chosen tempo, a concert-hall ambience without highlighting at either end of the frequency spectrum, and a general rounding-off of the sharp corners of the music. In short, there is virtually everything necessary here to provide a sparkling performance of Mendelssohn. What I don't hear are those near-carnatic yelps of the horns, the Classical opposition of wind band and strings, enough timpani, enough dynamic contrasts, the Beethovenian crescendos, and the expressive ritards and accellerandos; in short again, the Beethoven Seventh Symphony as I know it. Muti drives his forces spectacularly, but the dramatic points in Beethoven are not made through driving tempos alone (as they sometimes are in Mendelssohn). I cannot say, then, that it is the wrong time or the wrong place for this recording, but I can say that though the face of the music is charming, it is most definitely the wrong face.

The Ravel/Moussorgsky (or Moussorgsky/Ravel) Pictures gets a strong, straightforward reading that shows Muti (unlike, say, Ozawa) sensitive to the spacings between sections and contrasts of tempo and sonority from one "picture" to another. Ravel's scoring is far more open than Beethoven's (and rests on different principles), so the homogenized sound of the orchestra is not such a problem here. Still, at the close of the Limoges section, what one wants to hear running up that spectacular scale is the solo trumpet, and it is very much covered here. On the other hand, when one hears the solo trumpet (as the "poor" Polish Jew) the playing seems to lack empathy and sounds all too much like virtuoso trumpet playing. On the whole, though, this is a very successful performance, and the brass and wind sonorities, in particular, are quite beautiful.

Pictures, which runs over to the second side, is broken at the usual spot (after Catoomba and before Baba Yaga), and the side is filled out with Stravinsky's Firebird Suite. This appears to be the 1919 version (I have been supplied with no printed information) for slightly reduced orchestra, which includes the Berceuse and the finale but is still shorter than either the 1940 version or the 1973 version. Again, Muti gives a sensible, straightforward performance, a bit smoothed out but beautifully played. And again, the recording is natural, listenable, but far from spectacular. Anyone who treasures the sound of the orchestra, in part to Angel's recording so memorable. (The Kajanus and Collins performances have been reissued by Turnabout and Vox, respectively.) The five (out of six) Humoresques are a splendid bonus. This is prime Sibelius in his lighter vein, with simply superb writing for the soloist, in this case the fleet-fingered Anja Ignatius, long one of Finland's most distinguished violinists.

Except for a slight underlying hum, the 1955 version is on a par with the better product out of Berlin at that time. This orchestral sound has ample body in the low register, and there is a fine sense of space in the tuttis; only a certain thinness in the violin tone betrays the vintage of the taping. Even though there are up-to-date recordings of this material in fine stereo sound, the true Sibelius fancier will certainly want this significant and unique sound document.

D.H.

Recording: Excellent


Performance: A winner

I confess to a special weakness for this work, going back to when I first heard it through Fabien Sevitzky's RCA 78's. I have heard every recording of it since that one, and I've kept far too many of them. But Manfred (which Tchaikovsky could never quite decide to designate a symphony, but which is one just as much as those he numbered as such) is a fascinating piece, filled with fine tunes brilliantly treated, so characteristic of Tchaikovsky and yet so different from his other works in so many ways. This newest recording was an occasion for trotting out all the others and going through the lot, and the upshot is that there is no need for owning more than one when that one is as consistently superior as Vladimir Ashkenazy's. The recordings he has given us in the role of conductor in the last year or two indicate that he is not only serious about conducting, but extremely capable on the podium. His Manfred (uncut, of course) is free of gratuitous emphases that damage dramatics; this is a thoroughly musical approach which recognizes, not at all disingenuously, the drama takes care of itself more than adequately. There's no portentous use of the opening theme, but rather a subtly and sensibly plotted build-up to a sensationally convincing climax for the first movement.

(Continued on page 104)
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Marvelous detail in Tchaikovsky's most inspired scherzo is shimmeringly in place, with an air of lyrical spontaneity and not a hint of preciosity—and indeed the entire work goes with such a fine, all but seamless sweep that one is hardly aware of great interpretive powers at work. The sprawling finale seems in less of a sprawl than it sometimes can be, because there is no dawdling or shifting of gears, and at the end, when the organ has entered to brood on Manfred's death, Ashkenazy rejects ceremonial gestures in favor of a simplicity and straightforwardness that not only make great sense musically but reflect the peace the driven hero has finally found. New, old, or renewed, the Philharmonia has never given a finer account of itself, and the recording is a model of how such things ought to be done in terms of richness, detail, and overall balance.

R.F.

WILLIAMSON: Symphony for Organ; Vision of Christ-Phoenix. Allan Wicks (organ). Chalfont C 77.015 $7.98 (from Chalfont Records, P.O. Box 1 1101, Green Lantern Station, Montgomery, Ala. 36111).

Performance: Fastidious Recording: Excellent

Australia-born Malcolm Williamson, now forty-seven, has made his presence felt over the years as a composer of considerable distinction, particularly in his ambitious works for organ. The Symphony for Organ recorded here is divided into six movements, the first two of which ("Prelude" and "Sonata") make use of a chant-like melody that returns later in various permutations to unify the work. And a knotty work it is, full of surprising changes of direction, such as when the mood of the long, lovely, solemn third movement ("Aria I") is suddenly broken by a syncopated, almost jazzy segment of the succeeding "Toccata." Brooding, introspective passages open out unexpectedly, like night-blooming flowers, into rich, exuberant patterns. The fifth movement, a passacaglia, is an intricate, noble tapestry of sound almost Baroque in style, and the concluding "Paean" provides organist Allan Wicks (who commissioned the work in 1960 and introduced it in a performance for the BBC) a chance to exploit the magnificent resources of the Coventry Cathedral instrument he plays. The album is filled out with the eleven-minute Vision of Christ-Phoenix, which Williamson wrote for the dedication of the rebuilt cathedral at Coventry in 1961. It is a rapturous piece, more immediately accessible than the symphony, with a sculpted, monumental quality to the writing that is altogether impressive. Both works are fastidiously played and very well recorded.

P.K.

ZELENKA: Orchestral Works (see Best of the Month, page 84)

COLLECTIONS

RECORDING OF SPECIAL MERIT


Performance: Buoyant Recording: Excellent

Take two parts of Richard Rodgers, one part each Jerome Kern and Victor Herbert, add a dash of Richard Hayman for seasoning, stir to a fare-thee-well, and top with red, white, and blue sprinkles from a Sousa march, and what do you have? In the case at hand, a delicious concoction of Americana as spirited as anything that came along during the Bicentennial deluge a few years ago. The Cincinnati Pops Orchestra is really the ninety-eight-member Cincinnati Symphony in holiday garb, and conductor Erich Kunzel is an old hand at turning programs of the popular classics into real rousers. He was the first to conduct a pops concert at the Grand Old Opry in Nashville and one of the handful of guest conductors ever invited to conduct the Boston Pops on a regular basis. At his home base in Cincinnati he has made the winter pops series at the Music Hall the hardest ticket in town, and if this album is any indication of the caliber of those concerts, it’s no wonder. None of these works has ever sounded more alive.

"American Fantasia" opens with the waltz from Carousel, which is really the graceful, whirling overture to the Rodgers and Hammerstein musical. This glowing performance is followed by a breath-taking treatment of Slaughter on Tenth Avenue, the ballet from Rodgers and Hart’s On Your Toes that takes

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off on a gangster movie of the Thirties and never seems to sound the same way twice; there apparently are any number of orchestral treatments, but no other performance ever matched in glitter and intensity the stunning one here, complete with gunshots, police whistles, and a dazzling coda. A vigorous Hoe-Down by Richard Hayman, intensified with lusty claps and shouts, is another sizzler.

The Mark Twain Portrait that Jerome Kern wrote in 1942 at the invitation of Andre Kos telanetz is something of a hodgepodge as a whole, but there are pretty tonal impressions of a drowsy morning in Hannibal, Missouri, of young Sam Clemens as a river pilot, and of the townsfolk coming to meet a Mississippi steamboat at the Hannibal landing. Victor Herbert's American Fantasia is a more heavy-handed affair, a potpourri of patriotic and popular airs long on hokum and short on subtlety, but both it and the Sousa Stars and Stripes that comes parading in at the end are played with so much gusto that they're utterly disarming. A delightful disc.


Performance: Enjoyable
Recording: Very good

This record presents one of those strange, and nowadays rare, examples of a performance with a style that is beautiful in itself but is wildly removed from the music performed. The Ensemble Vocal Français sings with a lovely tone, the parts are well balanced, and the phrasing and dynamics are painstakingly worked out. But Perotin's monolithic organum is treated like a gentle pastorale and Adam de la Halle's rondes are turned into Debussy-like chansons. The key to Daniel Meier's interpretations is perhaps found in the jacket notes, where the commentator remarks that it is impossible to hear one of these rondes "without recalling Debussy whose own chansons achieve the same mood through their harmonics." Such a comparison may be valid, but to apply the choral-performance practice of Debussy's age to that of the Ars Antiqua and Ars Nova is certainly not valid. No matter how inauthentic his performance, however, Meier has here caught a certain beauty that is well worth hearing.

S.L.


Performance: Remarkable
Recording: Hair-raisingly realistic

The oud is a stringed instrument they started playing in Persia about two thousand years ago. It's shaped like a pear, has eleven strings, is traditionally played with an eagle's feather, and sounds like a cross between a lute and a broken-hearted guitar. John Bilez

(Continued on page 109)
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Vivaldi's "Tito Manlio"

So you thought last year's tricentennial Vivaldi revival was over? The Vivaldi concerto revival, perhaps; the Vivaldi opera revival is still proceeding apace. Hard on the heels of the RCA recording of Orlando Fauré's (reviewed here in January) and the Hungarian one of L'Olmiade comes an immense, respectable Tito Manlio from Philips that gives probably the most complete picture to date of any high Baroque Italian opera.

Italian opera of the seventeenth and early eighteenth centuries is a vast, almost unknown treasure trove—or is it a wasteland? Operas were churned out and produced at a rate and with a passion of popular enthusiasm that make American musical comedy seem like an art for connoisseurs. In those days, Venice had as many as seventeen opera houses operating simultaneously, together employing a veritable herd of composers, librettists, impresarios, singers, and instrumentalists, many of whom became the toast of all Europe. Vivaldi himself claimed to have written ninety-four operas (if so, most of them are, perhaps luckily, lost). He also claimed to have written Tito Manlio in five days—which, if true, would certainly entitle him to the gold medal for Rapid Opera Composition, surpassing even Handel and Rossini.

Tito Manlio is one of those sprawling neo-classical canvases of the early Baroque, with no less than ninety numbers—including more than forty arias, a duet or three, and some huge stretches of dramatic recitative. All—except a few lines of recitative—is recorded here, totalling some four hours of music on five discs! Most of the lead roles, female and male, were written for either women or castrati (who together dominated the history of opera for two centuries); the plot, which concerns the usual conflicting demands of love and duty, is all but incomprehensible; and the arias—lively emotional abstractions largely irrelevant to the action—are almost all in the time-honored A-B-A form. As a character is about to leave a scene, the action is invariably suspended for a bravura or pathetic aria.

We must imagine that the appeal of such operas was a compound of glamour (the sets and costumes were always sumptuous), the virility of the stars (they must have been astonishing), and, on occasion, the ingenuity of the composer in finding a novel coloristic effect or even a convincing representation of passion in a highly stylized and conventionalized form. For the rest, the audiences were presumably content to gossip, intrigue, receive guests, flirt, eat and drink, conduct business, see, be seen, and even once in a while listen to the music.

It may be churlish to ask why Tito Manlio was chosen for the honor of representing its age with such particular completeness. This recording is part of an ambitious Vivaldi series, but, even so, Tito is an early Vivaldi opéra (1719) and not one of his greater successes, combining the merely perfunctory with flashes of extraordinary brilliance. The performance is reverently workmanlike, but workmanship and reverence are not enough to bring such spirits back to life.

The deepest impression here is made by the two Italian basses, Giancarlo Luccardi and Domenico Trimarchi, since their voices and style are in such contrast with the rest. The brief tenor part (the character is killed off almost immediately, leaving the way clear for a seemingly endless series of soprano, mezzo, and alto arias) is well sung by the Swedish tenor Claes H. Ahnsjö. The rest of the international cast (Germany, Hungary, Scotland, and Argentina are also represented) includes many specialists in early opera; I particularly enjoyed Margaret Marshall's clear soprano and Rose Wagemann's dramatic force.

The vocal level is reasonably high throughout, with some real passion here and there (mostly in the recitatives), but the central performance problem of Baroque opera—combining virtuosity and stylization with expressiveness—is solved in only a few passages. Things pick up toward the end of Act II and at the beginning of Act III (side seven is unquestionably the richest of the ten), and the increase in intensity and the quality of inspiration hold intermittently throughout the last act. Whether such a payoff justifies the major expenditure of time and money this monster set demands depends on the dimensions of your own passion for Vivaldi and the Baroque. Frankly, I would like to see a more carefully considered attempt to open up the lost riches of Baroque opera, beginning with a systematic effort in only a few key operas. Through a deeper study than is evident here, to realize them with something of their former brilliance.

—Eric Saltzman
They all (except the waiter) laughed when the table-top flamenco dancer ended up on the carpet at a party for Capitol artist Bob Welch (cigar) after his homecoming appearance at Los Angeles' Universal Amphitheatre. It looks like Welch (whose most recent album is titled "French Kiss," ST-11663) made his move just a little too late.

WEREWOLVES lead guitarist Seab Meador gives his opinion of the group's new album, "Ship of Fools" (RCA AFL1-2746) recorded, in the great Paul McCartney tradition of phonorealism, on a yacht off the Florida Keys. Ah, to have had the Dramamine concession....

By Steve Simels

The quasi-legendary Jake (John Belushi) and Elwood (Dan Ackroyd), known paraprofessionally as the BLUES BROTHERS, are seen fumbling for their record contract in the company of some farsighted (or perhaps merely light-sensitive) honchos from Atlantic Records. The Brothers, when they aren't working their mojos on Saturday Night Live, travel around the country in a 1967 Dodge Polara hawking the new single, "Soul Man", from their just-released debut album, "Briefcase Full of Blues" (Atlantic SD 19217).
These two pertly weight watchers at New York's Bottom Line are nighttrippers OR. JOHN (Mac Rebbenack) and songwriter DOC POMUS (seated). Both have been involved with classic rock-and-roll since the late Fifties at least, but they have only just now collaborated: Pomus penned three tunes on Mac's latest, "City Lights" (Horizon/A&M SP -732), including the title song. And it should be noted that the good doctors do not make house calls.

What we have here is not a publicity still from Monogram Pictures' The Bowery Boys at the Library of Congress but Rick Nielsen, lead guitarist for power popsters CHEAP TRICK, proving that payola isn't what it used to be as he serves WIBA-FM (Madison, Wisconsin) program director David Benson with a copy of the group's noncommercial live Epic LP "From Tokyo to You" and a Cheap Trick jacket. Ordinary folk will find satisfaction with the group's "Heaven Tonight" (Epic JE 35312), but sorry—the jacket's not wearable.

What happens when the singing offspring of some formidable country-music legends get together? Sometimes they pick, sometimes they grin, and sometimes they give dramatic readings from their royalty statements. But CARLENE CARTER and HANK WILLIAMS JR., backstage at Carlene's New York City debut, demonstrate that sometimes they just drink each others' health like the rest of us—look, Ma, no Mason jars!

From the land of koalas, kangaroos, Helen Reddy, Peter Allen, the immortal Easybeats, and Foster Lager now comes an exceptionally... er, dignified new rock band: the fabulous MOTHER GOOSE! The Moms (or the Geese, whichever you prefer) have been haunting the Bowery/CBGB sleaze circuit lately in an attempt to duplicate in this country their earlier success Down Under (a gold album and several hit singles), and the Scotti Brothers, whose label brings you Leif Garrett, among others, are poised to release their first U.S. album. Can American stardom be far behind for these snappy dressers?

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The reality that leaps from these grooves as Astaire skates blissfully through such songs as 'Check to Check' or 'A Fine Romance' or 'They Can't Take That Away From Me' was a time of "whimsey" in pop music, that gravity-defying spring in his step is the energy, time, and means. No matter how casual their sources effortlessly, from a seemingly bottomless store. The whole Astaire hero, particularly in those artistry known as "lifestyle," how about an artist who is a lifestyle for millions of people? The Astaire hero, in particular, in those attitudes, dreams-with-music films with Ginger Rogers in the Thirties, is a personification of high romantic art. Someone once said that to create romance one must expend taste, energy, time, and means. No matter how casual his preliminary attack on the material, Astaire is a perfectionist (like so many of his generation of performers), and he expends those resources effortlessly, from a seemingly bottomless store. When I hear something up to a phrase here, flick a note there, control the rhythm of a ballad in a way that no one else seems ever to have been able to do, or borrow (from somewhere) a slight, almost imperceptible ritard between words (in 'Change Partners,' for example), I get a real gut reaction of Wow! Zowie! Bam! This is how grown-ups do it. This is real.

The thirty-four vocal numbers and six instrumentals (three of them brief improvisations) with the sound of Astaire dancing! 'The Astaire Story' were all recorded in 1952 for a limited-edition release by Norman Granz, who selected the accompanying artists from his Jazz at the Philharmonic group. The sound is just fine, and the feeling of high romance by such greats in their own right as Oscar Peterson, Charlie Shavers, Ray Brown, Alvin Stoller, Flip Phillips, and Barney Kessel are superb. The large and nicely produced booklet includes copious notes by Granz and some remarks by Astaire about his career and repertoire that are as modest and unassuming as the gentleman himself. The whole production can best be summed up in a word that tends to glide effortlessly from our lips, our self-consciously egalitarian society, so I'll leave it to be uttered by one of the other third is shallower than it could be expected. Not bad, considering the talent of performers), and he expends those resources effortlessly, from a seemingly bottomless store. When I hear something up to a phrase here, flick a note there, control the rhythm of a ballad in a way that no one else seems ever to have been able to do, or borrow (from somewhere) a slight, almost imperceptible ritard between words (in 'Change Partners,' for example), I get a real gut reaction of Wow! Zowie! Bam! This is how grown-ups do it. This is real.

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FRED ASTAIRE: The Astaire Story. Fred Astaire (vocals); Flip Phillips (tenor saxophone); Charlie Shavers (trumpet, Oscar Peterson); Barney Kessel (guitar); Ray Brown (bass); Alvin Stoller (drums). (© 8020-1088) $7.95, © 5020-1088 $7.95.

I Believe You; and four others. ABC: 'AV-1088 $6.98, 0210-10887 $7.95, © 5020-10881 $7.95.

Performance: Pleasant but bland.

LITTLE LUACH Here's another female "country" singer actually doing precisely what people long mean by "middle-of-the-road." Together with the MOR success of Crystal Gayle, Dolly Parton, Barbara Mandrell, Maedel, Barbara Mandrell (vocals); David Feige (pianist); James Burton (guitar); Mike Kellner (bass); Janie Fricke (vocals); other musicians. Sleeping Shade in a Double Bed, No Walls, No Ceilings, No Floors; It's a Crying Shame; Early Fall; Party; I Believe You; and four others. ABC: 'AV-1088 $6.98, 0210-10887 $7.95, © 5020-10881 $7.95.

Performance: Pleasant but bland.

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Man in the Station written by, of all people, the intellectual and far-out jazz folkie John Martyn. Mostly there are good melodies and fair lyrics sung with a kind of unobtrusive splendor and played, as people almost always play behind Matthews, with grace and gusto. The instrumentals are slightly more controlled than is usual for a Matthews album, but they're not overcontrolled (I would halt it right there, though, fellows, and maybe even back off about a notch and a half). And it's one of those rare pop albums that make having a good stereo outfit worth it. Good job, N.C.

OLIVIA NEWTON-JOHN: Totally Hot. Olivia Newton-John (vocals), instrumental accompaniment. Please Don't Keep Me Waiting; Talk to Me; Deeper Than the Night; Borrowed Time; A Little More Love; Never Enough; and four others. MCA MCA-3067 $7.98, ® MCA-3067 $7.98, © MCAC-3067 $7.98.

Performance: More like mild
Recording: Good

Let me put the title "Totally Hot" in perspective for you this way: if this were chili, the average Mexican would laugh it out of la comidada. Actually, it's the name of one of the songs (one of the dumber songs of the year), but there is the germ of something new about Olivia Newton-John's approach here, and if you allow for the usual overstatement in these matters it makes some vague sort of sense. She seems a little more ambitious this time around off about a notch and a half). And it's right there, though, fellows, and maybe even back off about a notch and a half. And it's one of those rare pop albums that make having a good stereo outfit worth it. Good job, N.C.

RECORDING OF SPECIAL MERIT

SMOKEY ROBINSON: Smokin'. Smokey Robinson (vocals); instrumental accompaniment. The Tracks of My Tears; Love So Fine; Quiet Storm; Daylight & Darkness; Madam X; The Tears of a Clown; Here I Go Again; Mickey's Monkey; You're Really Got a Hold on Me; Shoe Soul; Baby Come Close; and seven others. TAMLA T-363 A2 two discs $9.98.

Performance: Tasteful
Recording: Satisfactory

One of the things that distinguishes this two-disc set, recorded live somewhere in the universe (there is no indication of locale), is Smokey Robinson's fans. Sure, they cheer, applaud, and let out enough blood-curdling screams to indicate that they really care about Smokey, but even the most impassioned shrieks subside when it's time for the main man to open his mouth.

Of course, Smokey also gives them a great deal to listen to. He's in excellent voice, his velvet-smooth high tenor roaming flawlessly through the best numbers in his repertoire, just about all of which he has written himself. My favorites occur on sides three and four where he launches into such golden oldies as Mickey's Monkey, I Second That Emotion, and Ooo Baby Baby. It's like a stroll through ole Motown during the days when it still stood for unpretentious soul sounds.

A bonus here is the instrumental back-up group, which includes Fred Smith on flute and "Wah Wah" Watson on guitar, both of whom get in some especially tasteful licks. Furthermore, the arrangements are more spirited than has been apparent on many of Robinson's other recordings. But what is most impressive of all is the general level of the personal vibes, particularly during the banter between numbers. Smokey's comments flow spontaneously, and it is possible to detect the character of a man whose ego has never outstripped his talent. I've never met Smokey Robinson, but I'm positive that he is one helluva nice guy.

KENNY ROGERS: Love Lifted Me. Kenny Rogers (vocals, guitar); instrumental accompaniment. Love Lifted Me; You've Been Too Tired; Home-Made Love; Heavenly Sunshine; Runaway Girl; and four others. UNITED ARTISTS UA-LA607-G $6.98, © EA607-H $7.98, © CA607-H $7.98.

Performance: Cozy
Recording: Good

It was many moons ago that Kenny Rogers first established his name with the "psychedelic" hard-rock hit Just Dropped In that he recorded with the First Edition. (Before that, he served anonymously as a member of the New Christy Minstrels.) Later, on his TV show with the Edition, he simmered down considerably and sang a good deal of what he termed "progressive" country music—Mel Tillis' Ruby, Don't Take Your Love to Town, Mac Davis' I Believe In Music, and so on. Today, minus the First Edition and recording out of Nashville, he's into such quasi-religious repertoire as Dion's tearful gasper Abraham, Martin and John, his own arrangement of the gospel hymn Precious Memories, and There's an Old Man in Our Town, a song he says was inspired by some advice his very own grandfather passed along to him. To label or to attempt to categorize precisely what Rogers is doing now would be as difficult to do as the album is to listen to. The only image that came to my mind was one of being strapped in between Ruth Carter Stapleton and Billy Graham, both in cozy talkative moods, in an economy-class seat on a non-stop flight from Baton Rouge to Grand Rapids.

RUSH: Hemispheres. Rush (vocals and instrumentals). Prelude; Apollo; Dionysus; Armageddon; Cygnus; The Sphere; and three others. MERCURY S3M-1-3743 $7.98, ® 8-1-3743 $7.98, © 4-1-3743 $7.98.

Performance: Intense
Recording: Good

Rush's mixture of hifalutin story lines and didactic lyrics (*"When our weary world was young/The struggle of the Ancients first be-

(Continued on page 127)
With few exceptions, loudspeaker systems have always been designed to have flat response in anechoic chambers (test rooms with completely sound-absorptive boundaries).

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In Canada: Superior Electronics, Inc.
gan/The Gods of Love and Reason/Sought alone to rule the fate of Man”) and Geddy Lee’s laser-intensity vocals have made this Canadian trio a very popular show band in the Midwest. The story lines and lyrics of “Hemispheres” teeter on the edge of presumptuous claptap (they read like bad Victorian verse), but Lee makes everything work with his zeal and bravado. I’m not sure whether Rush actually believes in the stuff they write or whether they consider themselves, in the theatrical sense, an act, but Lee’s vocals are the key. He has a remarkable voice, its only defect being a lack of subtlety. His head-on attack damages the only good song on the album, The Trees, a witty and bitter parable about “oppressed minority groups” and governmental problem-solving in which jealous maples form a union against the oaks with the result that all the trees are cut down in egalitarian fervor. More songs like that and a little subtlety from Lee would be pretty exciting chemistry.

J.V.

RECORDING OF SPECIAL MERIT

SAD CAFE: Misplaced Ideals. Sad Café (vocals and instruments). Restless; Here Come the Clowns; Run Home Girl; Black Rose; and six others. A&M SP-4737 $7.98.

Performance: Superior
Recording: Very good

Sad Café is all the rage in London—as well they ought to be, for this is one of the most creative and accomplished bands to be heard in a long, long time. Although vocalist Paul Young owes something of his style and inflection to Mick Jagger and Van Morrison, he’s an independent spirit and a most exciting one. All the musicians are fluent and tasteful, but highest honors go to keyboardist and arranger Vic Emerson, whose intelligent, subtle chart writing determines the band’s superior ensemble sound.

The tracks here are culled from Sad Café’s two English albums. The opening cuts on side one—Restless and Here Come the Clowns—are absolute knockouts, so strong, in fact, that the other performances, good as they are, can’t quite measure up. The laid-back rhythm of Restless creates a tension that is held until Emerson’s brilliant arrangement sets up the entrance of the guitar solo that dramatically releases it. Saxophonist Lenni Zaksen, guesting with the band, provides the hysteria on the rocking, eerie Here Come the Clowns. Other standout is I Believe (Love Will Survive), Shellshock, and Hungry Eyes. Be glad of good news and run get this album quick (also watch for the group’s first American tour this year). Sensational!

J.V.

NEIL SEDAKA: All You Need Is the Music (see Best of the Month, page 85)

ROD STEWART: Blondes Have More Fun. Rod Stewart (vocals); instrumental accompaniment. Da Ya Think I’m Sexy?: Dirty Weekend; Ain’t Love a Bitch; The Best Days of My Life; Is That the Thanks I Get?; Weekend; I Believe (Love Will Survive); Shellshock, and Hungry Eyes. Be glad of good news and run get this album quick (also watch for the group’s first American tour this year). Sensational!

J.V.

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When Diana Ross, back in 1970, burst out of the sequined package that was the original Supremes and became one of the most celebrated solo acts of the decade, she stirred up a cloud of Stardust that is still shimmering down on ambitious female soul singers who have made it as far as they can as members of groups. Increasingly, these performers are attempting to establish their own identities by severing, or at least loosening, their ties to old friends (and even relatives) with whom they've shared thousands of frenzied, sweat-drenched whoo-oo-oo-oo's and yeah-yeah-yeah's.

Of course, this phenomenon is not a new one. Even the Seven Muses of the ancient Greeks, representing as they did such different arts, must have resisted being lumped together in one "girl group." For today's artists, there are very real financial and personal rewards for a successful solo career, not the least of which is simply the satisfaction of being recognized as an individual and not just "one of the Whatevers." A shared pot, however large, may provide less for each shareholder than she or he feels is deserved, and a shared spotlight is necessarily more diffuse, less intense than one with a single focus.

Since this is, supposedly, the "me, me, me" generation, why shouldn't the woman singer, now that she's no longer considered a "girl," seek her fair portion of the glory? There is, however, much about the journey from group membership to solo stardom that makes it perilous. Singing well in a group, even as its lead voice, is no guarantee of safe passage to a solo role. To stand alone, a singer must have a voice whose unusual tonal quality immediately distinguishes it from all others. Aretha Franklin, Roberta Flack, Nina Simone, and Diana Ross, to mention some of the more notable successes, not only sound good, they sound like nobody else but themselves. And even if one's voice as such isn't course, but this album makes more of a home number; it lead off the second side of the disc. Not everything works equally well, of course. But the medley of "Sail Away" and "Freedom for the Stallion" is a hymn of joy. Gladys Knight should enjoy smooth sailing no matter where her new career takes her.

As for Chaka Kahn, it is said that she will continue recording with the vocal-instrumental group Rufus while also performing separately. Whatever she does, she'll certainly be heard, for this woman can whip up a fury of sound, lashing into a song like a banshee late to a wake. Chaka Kahn always seems to be singing to a crowd rather than to an individual (in contrast to Gladys Knight), but that just makes her music ideal for bars, discos, parties, and other places where extroverted hot sounds are a must. Her debut solo album should sell well. The opener, an all-out sizzler called "I'm Every Woman," is already a staple on jukeboxes, and her rambunctious rendition of Stevie Wonder's "I Was Made to Love Him" is every bit as exciting. The sweet smell of success wafts from this album. In any case, I dare say no one's going to fall asleep listening to Chaka Kahn.

In comparison with Kahn and Knight, Bonnie Pointer has had to wage an uphill struggle to emerge on her own. She was one of the four original Pointer Sisters, and, as much as I loved their campy first album, I could never tell them apart. The group has had its ups and downs since, but Bonnie has let nothing faze her. For her solo debut she has gone all out to show that she's her own woman, doing not the same old shows, but standing on her own two feet. The effort that went into this set cannot be weighed on a purely musical scale, and Ms. Pointer deserves an A+ just for attempting it.

Adventurousness is the keynote of Bonnie's album. "Heaven Must Have Sent You" is a virtuoso tongue-in-cheek version of a Holland/Dozier/Holland number; a "group" made up of Bonnie's own overdubbed and multitracked voice whoops up an old-fashioned r-&-b storm in the background while Bonnie as soloist does everything else (from cutestest tricks to some Louis Armstrong-like scat singing) in the foreground. She adds a very Billie Holiday twist to her voice on "My Everything," and there are a few more rompers, but the most engaging tracks here are, surprisingly, two quietly stated folk-style numbers, "More and More" and "I Love to Sing," which lead off the second side of the disc. Not everything works equally well, of course, but this album makes more of a home for itself the more you listen to it.

With the release of a solo album by Sarah Dash, the last member of Patti LaBelle's old trio has made her bid for the spotlight. Frank-
ly, I don't think that any of their solo efforts—Patti's, Nona Hendryx's, and now Sarah's—generate the kind of electric excitement that they did as a group when they were in peak form, which was always in live performances rather than in studio recordings. Performing as part of the audacious and raucous LaBelle, Sarah always provided a pleasing contrast to teasing, tough, pseudo-sinister Nona, and to Patti herself, whose calculated outrageousness extended to rolling around on the floor or having herself lowered from the ceiling. Sarah was the sensual "lady" of the trio—ultimately more alluring, more mysterious than the other two, and also capable of singing with a fuller, richer voice.

On her own, Sarah Dash retains much of her basic appeal, but she has also given in to some of the excesses of her former group mates. The opener, a pedestrian bit of disco called Sinner Man, is beneath LaBelle's level and thus certainly unworthy of Sarah. Although she sings quite well on a few tracks (especially on We're Lovers After All), there's a disappointing predictability to much of what she does here. The arrangements are by Leon Pendarvis, who has worked with Aretha Franklin and Roberta Flack, but he certainly didn't strain himself this time around. The superficial slickness undermines Sarah's efforts to plow through with her firm, expressive voice. Her record tries too hard to be popular, and it will probably end up pleasing fewer listeners than she might have done with better material and more personal production. There's no need for Sarah Dash to bring up the rear in this impressive quartet of female vocalism.

—Phyl Garland

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CHAKA KAHN. Chaka Kahn (vocals); instrumental accompaniment. I'm Every Woman; Love Has Fallen on Me; Roll Me Through the Rushes; Sleep on It; Life Is a Dance; We Got the Love; Some Love; A Woman in a Man's World; The Message in the Middle of the Bottom; I Was Made to Love Him. WARNER BROS. BSK 3245 $7.98, C) M8 3245 $7.98, © M5 3245 $7.98.

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ly, I don't think that any of their solo efforts—Patti's, Nona Hendryx's, and now Sarah's—generate the kind of electric excitement that they did as a group when they were in peak form, which was always in live performances rather than in studio recordings. Performing as part of the audacious and raucous LaBelle, Sarah always provided a pleasing contrast to teasing, tough, pseudo-sinister Nona, and to Patti herself, whose calculated outrageousness extended to rolling around on the floor or having herself lowered from the ceiling. Sarah was the sensual "lady" of the trio—ultimately more alluring, more mysterious than the other two, and also capable of singing with a fuller, richer voice.

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Performance: Righteous!
Recording: Good

I have been a Tina Turner fan since the age of sixteen, when I discovered the black radio station WGES in Chicago and heard Richard "Crown Prince of all the Disc Jockeys" Stamm's playing Ike and Tina Turner's "I Think It's Gonna Work Out Fine" To me they were the Gable and Lombard of soul music. I've continued to follow Tina's career since her separation from Ike. Her solo albums have been interesting without always being exciting, for they were sometimes designed to present her as a versatile crossover artist rather than the all-stops-out r & b thriller that she is. This present album, however, turns her loose on first-rate material by a variety of writers—Elton John and Bernie Taupin, Hal David, Willie Nelson, Bob Seger, Barry Mann, and Allen Toussaint among them—and she is once again the magical, non-nonsense, volcanic, and royally erotic Tina of old. One hearing of The Bitch Is Back, Night Time Is Right, Fire Down Below, or Root, Volcanic, and Royally Erotic Tina of Old. This new one, however, is the definitive stinkeroo. Stewart's self-absorption has become self-parody; his new band is not merely Face-like but downright inept, and the eleagia folk arrangements that made such earlier albums as "Gasoline Alley" so memorable have here degenerated into the California-pop equivalent of Merv Griffin's old Tinkling Piano in the Next Room. The new material is uniformly dreadful, ranging from disco piffle (Da Ya Think I'm Sexy?) to repellent frathouse love songs (Ain't Love a Bitch), and even the obligatory oldie (here it's Standin' in the Shadows of Love, a nifty late-Sixties Four Tops tune), usually Stewart's forte, seems transparently insincere and unconvincing. I hate to hit a man when he's down (though since this one has already shipped platinum I doubt Rod's worrying), but "Blondes Have More Fun" is easily the worst release by an artist with a major reputation since George Harrison's "Dark Horse."

S.S.

RICHARD AND LINDA THOMPSON: First Light (see Best of the Month, page 85)
BRASS CONSTRUCTION: IV. Brass Construction (vocals and instrumentals). Perceptions (What's the Right Direction); Help Yourself; Night Chaser; One to One; Sweet As Sugar; and three others. UNITED ARTISTS UA-LA916-H $6.98, ® EA916-H $7.98, © CA916-H $7.98.

Performance: Predictable
Recording: Satisfactory

There is a faint glimmer of originality in the format Brass Construction has chosen, for they back up their vocals with trumpets and saxophones as well as the usual keyboards and rhythm instruments. Unfortunately, they seem to lack the musical experience to do much with either the horns or the other instruments. Their songs fall into a woefully predictable pattern: the initial statement of a rather simple melody is repeated and loosely embellished ad infinitum. The horns are used only for punctuation, commonly along with equally repetitious unison shouts. Though I don't recall exactly what their albums "I," "II," and "III" sounded like, I would guess they were very much like this one. Not that this is really a bad set—the group has enough raw energy to keep a mob dancing from open to end. Just don't listen too closely.

P.G.

RECORDING OF SPECIAL MERIT

JUDY CHEEKS: Mellow Lovin'. Judy Cheeks (vocals); vocal and instrumental accompaniment. The Little Girl in Me; Kiss Me Baby; Suspicious Mind; It's Just a Love Affair Gone; and four others. SALSOUL SA 8514 $7.98, ® 8-8514 $7.98, © C-8514 $7.98.

Performance: Infectious
Recording: Just right

Here is one terrific album by a double-dynamite lady: Judy Cheeks can write, and she sings, too. Her refreshingly little-girl breathy voice is very easy on the ears, and her Munich-based engineers know just how to keep that sweet voice from being drowned in sound. The result is an uncommonly listenable disco album. And then there are the songs. Two, especially, are so infectious that I haven't stopped humming them since my first hearing: The Little Girl in Me and the hit title song, both mixed by the omnipresent (and talented) Tom Moulton. For extra spice, there's a kind of country-western song called Suspicious Mind (the only song in the album Ms. Cheeks didn't write) and the solid bluesy treatment of Darling, That's Me. There's not a bad song here. Give a listen and become a fan.

E.B.

ALEC R. COSTANDINOS: The Hunchback of Notre Dame. Alec R. Costandinos and the Syncophonic Orchestra (vocals and instru-
Talk about the sound and the fury! Loyal admirers of the works of J. R. R. Tolkien who lined up for blocks at New York's Ziegfeld Theatre (and, no doubt, at other showcases elsewhere) to see Ralph Bakshi's animated movie of _The Lord of the Rings_ when it opened last November found out, if they didn't already know it, that Middle-earth is a pretty noisy place. Just about the most spectacular animated feature ever made, _LOTOR_ boasts a mammoth score by Leonard Rosen- 
man that swells from a perky little Elvish tune to advanced sonorities of considerable complexity. At the Ziegfeld there were so many tracks being played over so many loudspeakers at once that the dialogue, sound effects, and music resounding together left my ears ringing and benumbed. With the new Fantasy album of the soundtrack, however, it is possible to admire the virtues of the music without being deafened by it.

Rosenman, now in his mid-fifties, gave up painting for music in 1947 and studied under both Arnold Schoenberg and Roger Sessions. His score for _LOTOR_ is far more daring than those he wrote for such other films as _East of Eden, A Man Called Horse_, or even _The Fantas- 
tastic Voyage_. Dissonances and twelve-tone experiments abound, sometimes in curious contrast with the harmonious horns of Elfland that echo across the mock-medieval landscapes of Bakshi/Tolkien's Middle-earth, sometimes in frightening counterpart to the whimsical tunes and rustic marches that accompany the hobbits (Tolkien's version of the Little People) as they are drawn deeper into their dangerous adventures. The growling choruses of the orcs (the gruesome enemies of hobbits, elves, and men) and a ballad sung in one of the Elvish languages Tolkien invented would surely have delighted the master himself, and there is a wide enough range of orchestral power to tax the resources of the most advanced hi-fi system.

All in all, Rosenman's music is several cuts above John Williams's well-regarded and widely popular scores for _Close Encounters of the Third Kind_ (which also has some avant- 
garde effects) and _Star Wars_. It is of more intrin- 
sic interest and yet just as apt for accompa- 
nying the action of the film it was composed for. As W. H. Auden, one of Tolkien's greatest boosters, once admitted, the fantasy world of Middle-earth and Tolkien's plucky little heroes, with their English Midlands mo- 
rality, "... will either totally enthral you or leave you stone cold, and whichever your re- 
ponse, nothing and nobody will ever change it." You don't have to be a member of the cult, though, to enjoy Leonard Rosenman's fantastic, febrile score. —Paul Kres- 
hall

**THE LORD OF THE RINGS (Leonard Rosen- 
man.)** Original soundtrack recording. Orches- 
tra, Leonard Rosenman cond. **FANTASY** 
**LORD-1** two discs $13.95, © 8160-LOR-1TS $13.95, © 5160-LOR-1TS $13.95.

**THELMA HOUSTON: Ready to Roll.** Thelma 
Houston (vocals); vocal and instrumental accompa- 
**niment. Saturday Night, Sunday Morn- 
ing; Love Is Comin' On; Midnight Mona; and six others. **TAMLA** T7-361R1 $7.98, © 7- 
361HT $7.98, © 7-361HC $7.98.

Performance: **Courageous**

Recording: **Satisfactory**

Thelma Houston has a gift for making trite, repetitious material sound far less humdrum than it is. She uses her magnificently robust voice to blast the mediocrity out and whip up a joyful ruckus. This album is a perfect example of her talent. These leadenly unimaginative songs have been ground out by formula, and it is impossible to recall the melody of any one of them after hearing the whole disc several times. And yet Houston sings this awful stuff as if it really inspired her. I don't know how she does it. She has a little bit to work with on the final two numbers, _Am I Expect- 
ing Too Much_ and _Can't We Try_, which nose out the real dogs on the trail. But Thelma shines throughout, dogs and all. The music matters less than what she does with it. In view of the courage she has demonstrated with such meager pickings, it's time for someone to give her some decent material. —P.G.

**ZULEMA: Z-licious.** Zulema Cusseaux (vo- 
cals); vocal and instrumental accompaniment. **Change: I'm Not Dreaming; See; and eight others. LE JOINT LEJ 17000 $7.98, © 8-17000 $7.98, © 8-17000 $7.98.**

Performance: **Undistinguished**

Recording: **Fine**

Zulema Cusseaux sings, Lord knows. Her voice has a lovely richness (in the same neigh- 
borhood as Roberta Flack's), and she can in- 
vent a lyric with a sense of truth. Just listen to 
how she feels her way through Van McCoy's _This Time I'm Not Dreaming_, on which McCoy himself joins her. It's too bad that she also writes songs (all but the three Van McCoy songs on this debut album are Zulema's own), plays the piano, and arranges, since most of her efforts along these lines don't pan out. **Higher Plane and Changes**, for example, are undistinguished songs of the "we all gotta love one another" variety. The disco arrangements here are better than the soulful ballads, but even the best of them— 
_Gotta Find a Way_ and _You've Got Something for Me_—are really just gestures in the disco 
direction. There's no fire here to set your Sat- 
urday nights ablaze.

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  DOR PDI-6179 $7.98, © 8T1-6179 $7.98, © 
  CTI-6179 $7.98.**
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- **LORRAINE JOHNSON: Learning to 
  Dance All Over Again. PRELUDE PRL-12161 
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  $7.98.**
- **LEMON. PRELUDE PRL-12162 $7.98, © 
  PRL-8-12162 $7.98, © PRL-9-12162 $7.98.**
- **NARADA MICHAEL WALDEN: Awaken- 
  ing. ATLANTIC SD-19222 $7.98, © TP-19222 
  $7.98, © CS-19222 $7.98.**

(List compiled by John Harrison.)
THE BELLE OF NEW YORK (Harry Warren-Johnny Mercer). Original-soundtrack recording. Fred Astaire, Anita Ellis (vocals); MGM Studio Orchestra and Chorus, Adolph Deutsch cond. FRED ASTAIRE. Fred Astaire (vocals); Buddy Bregman and Dick Hazard Orchestras. There's No Time Like the Present; Just Like Taking Candy from a Baby; Hello, Baby; Sweet Sorrow; The Martini; and three others. DRG/STET DS 15004 $8.98.

Performance: Better than the material
Recording: Good

The Belle of New York was a terrible MGM movie about a turn-of-the-century playboy (Fred Astaire) who falls in love with a beautiful mission worker on the Bowery (Vera Ellen) and promises to reform if she'll marry him. He gives up drink and even gets a job, but he backslides the night before his wedding, passing out and sleeping right through the ceremony. Don't worry, they're back together before it's over, and the movie supplies no end of choreographic spectacle, including a scene where Astaire—in his favorite outfit of top hat, white tie, and tails—dances high atop the Washington Square arch and over Greenwich Village rooftops. Astaire makes you think that the Bachelor Dinner Song, Seeing's Believing, and Baby Doll are treasures of the rarest musicality and wit when they're really only bits of forgettable fluff. Anita Ellis, who supplied Vera Ellen's voice, makes lovable items out of Naughty but Nice and the Bride's Wedding Day Song.

Most of side two of the album is devoted to five of Astaire's own songs (all but one written with a collaborator), which he sings with all his trademarked style and usual urbanity even though they are fairly mediocre. He also does a fine routine called The Martini, in which a customer at a bar supplies such elaborate instructions as to how his cocktail is to be made that he doesn't have time to drink it, as well as the title song from the movie The Notorious Landlady, an effort unlikely to add much to his legend despite the entirely engaging treatment he gives the piece.

P.K.

DON'T GIVE THE NAME A BAD PLACE: Types and Stereotypes in American Musical Theater, 1870-1900. The Babies on Our Block; Maggie Murphy's Home; John Riley's Always Dry; Stay in Your Own Backyard; De Golden Wedding; Darktown Is Out Tonight; Cat Song; and seven others. Max Morath, Danny Barker, Clifford Jackson, others (vocals); Dick Hyman, piano and cond. NEW WORLD NW 265 $8.98.

Performance: Effective
Recording: Excellent

New World Records here documents the history of American intolerance as it was reflect-
ed on the musical stage in the late nineteenth century. Vaudeville songs and musical comedies tended to reinforce the images that audiences already believed to be true representations of people they felt was too much belief to get to know or to consider on a more complex level. Here are songs suggesting that all Irishmen are drunks, blacks should stay in their own part of town, Germans are goose-stepping dunderheads, and so forth—not a very admirable part of our musical heritage, but unquestionably an authentic one.

The anti-Irish songs on the first side are comparatively tender lyrics about the babies in a block of tenements, the joys of an evening at a drunken party, have largely kept John Reilly alive, and helping the Irish win an election. Most of them were written by Tony Hart and Edward "Ned" Harrigan (the very one referred to in George M. Cohan’s "H-A-Double-R-I" song). The songs dealing in black stereotypes may once have been regarded as funny, but today they make one squirm with their allusions to razor-carrying "coons" and black "buffoons." Less vicious are the German-accent comic songs of Gus Williams, a vaudevillian born in New York's tough Bowery who aspired to the legitimate theater but was jeered back to vaudeville by the critics. Responding to the anti-German feelings roused here by World War I, Williams lam- ponned the acccents and alleged stupidities of the "Huns" in such ballads as Can Any One Tell Vere Dot Cat Is Gone? and Don’t Give De Name a Bad Place.

All the songs are effectively put over by Max Morath, that invertebrate champion of turn-of-the-century American music. Danny Barker, and Clifford Jackson, who seem to be instant experts at any accent demanded of them. There are back-up vocal ensembles on some of the selections conducted by Dick Hyman, who also plays the piano throughout and did all the arrangements. Complete texts and voluminous notes are supplied, together with reproductions of vintage sheet-music illustrations. All in all, an interesting record—but not one to play for impressionable ears. P.K.

NEFERITI (David Spangler—Christopher Gore). Original-cast recording. Robert Lu- pone, Andrea Marcovicci, Michael Nouri, Michael Smartt, Jane White (vocals); orchestra, Robert Billig cond. TAKE HOME TUNES THT 7810 $8.95 (plus $1 postage and handling from Take Home Tunes, Box 946, Georgetown, Conn. 06829).

Performance: Good, but... Recording: Very good

Nefertiti opened at the Blackstone Theatre in Chicago on September 29, 1977, and closed after forty-four performances. On the surface it seemed to have everything going for it. Here is a lavishly staged tale about ancient Egypt made ready for the results. This one should have been sealed up along with the show in its Chi-

cago tomb and forgotten.

RECORDING OF SPECIAL MERIT

OH, KAY! (George and Ira Gershwin). Maybe (three versions); Clap Yo’ Hands (two versions); Do, Do, Do (three versions); Someone to Watch Over Me (three versions); Oh, Kay!; prologue and entr’acte medley. Gertrude Lawrence, Claude Hubert, Harold French (vocals); George Gershwin, Victor Arden, Phil Ohman, Tom Waring, others (pianos); various orchestras and conductors. SMITH- sonian 011 $6.99 (from the Smithsonian Collection, P.O. Box 10230, Des Moines, Iowa 50336).

Performance: The originals

Recording: Intelligently restored

Way back in 1926, when the Gershwin brothers had already given the world the flop musical A Dangerous Maid, which closed in Pitts-
burgh, and Lady, Be Good, which seems nev-
er to have closed at all, they got Guy Bolton and P. G. Wodehouse to write them a book and P. G. Wodehouse to write them a book and P. G. Wodehouse to write them a book and P. G. Wodehouse to write them a book about the then-timey subject of run-rumming on Long Island. The unwieldy plot of Oh, Kay! is virtually immune to synopsis, but the songs the Gershwins supplied (a few had lyr-ics by Howard Dietz, the rest by Ira) sound as wonderful today as ever. Some of them—such as Someone to Watch Over Me—are still being sung, in fact, and in its own time the show was the longest-running American musical on Broadway, with 256 performances after the November 1926 opening.

In addition to the original songs, the original production of Oh, Kay! had Gertrude Law-
rence as Lady Kay. If you just want to get ac-
quainted with the complete score, I heartily recommend the Columbia Special Products album featuring Jack Cassidy and Barbara Ruick (ACL 1050). But if you’d like to hear the complete Lawrence recordings, maybe Someone to Watch Over Me, and Do, Do, Do, plus George Gershwin himself at the piano thumping out keyboard treatments of the same songs as well as his gospel number Clap Yo’ Hands, then you’d better get hold of this latest "archival reconstruction" from the Smithsonian Institution. Besides Lawrence and Gershwin, who should provide reason enough for buying the album, there’s also a

STereo REVIEW
two-piano medley of the show's hit tunes together with Fidgety Feet to set your own toes tapping. The less said about the male singers (from the London cast) who accompany Lawrence, the better, but it is worth mentioning that the record comes with whole pages of reproductions of photos of the original productions, analytical notes, and a summary of every single thing that happens on stage, just in case you want to mount your own revival.

P.K.

**SOUVENIRS OF HOT CHOCOLATES.** Louis Armstrong: *Sweet Savannah Sue; Ain't Misbehavin'; Black and Blue; That Rhythm Man.* Fats Waller: *Sweet Savannah Sue; Ain't Misbehavin'.* Edith Wilson: *Black and Blue; My Man Is Good for Nothing but Love.* Eddie Green: *Big Business; Sending a Wire.* Harlem Feetwarmers: *Snake Hips Dance; Jungle Jamboree.* Seger Ellis: *Ain't Misbehavin'.* SMITHSONIAN R 012 $6.99 (from the Smithsonian Collection, P.O. Box 10230, Des Moines, Iowa 50336).

**Performance: Enticing**

**Recording: Good restoration**

*Hot Chocolates* opened at the Hudson Theatre on Broadway in 1929 and ran for more than three hundred performances, a healthy run for that time. It was an expanded version of a floor show from Connie's Inn, one of the great Harlem night clubs. The score and lyrics were by Fats Waller, Andy Razaf, and Harry Brooks, with Eddie Green writing the comedy sketches. The show featured Waller, Louis Armstrong, and some of the best Harlem vaudeville talent of the era.

This Smithsonian Collection "reconstruction" presents surviving individual recordings by some in the cast members. Waller is heard on two frequently reissued piano solos, *Sweet Savannah Sue* and *Ain't Misbehavin'.* The former was written for a chorus of male dancers, and the latter—plugged incessantly in the show—turned out to be one of the all-time hits. Armstrong's versions with his 1929 orchestra, which included the great Zutty Singleton on drums, give a better impression of how Sue sounded on stage; his virtuoso performance on *Ain't Misbehavin'* became a hit record for him. Armstrong also tackles *That Rhythm Man,* the finale of Act I, and *Black and Blue*—the most ingenious and controversial song in the score. Edith Wilson, who sang it in the show, gives it a straightforward reading here, whereas Armstrong's vocal delves into the social and emotional core of the song.

Wilson is also heard in *My Man Is Good for Nothing but Love,* a double-entendre tune of the genre often featured in lavish Harlem clubs. The two comedy sketches by Eddie Green are treasurable period pieces, well written and well performed.

The Harlem Feetwarmers were a small group from the Duke Ellington band. Here they play two dance numbers from the show, *Jungle Jamboree* and *Snake Hips Dance,* the latter of which featured the remarkable Earl "Snake Hips" Tucker, a master of the shimmy. *Ain't Misbehavin'* comes around once again in a cut by vocalist Seger Ellis, with Armstrong present for the trumpet obligato.

The sound restoration is uniformly good, and the informative liner notes by Dan Morgenstern are most welcome. Ah, if only the whole show had been recorded!

(Continued on page 137)
**Steeleye Packs It In**

Steeleye Span went out with something between a bang and a whimper—closer to a whimper—and one who has never done them any harm aside from praising them feels almost a responsibility to jump in quickly and remind everyone that this band in its day was just about as close as anything ever gets to marvelous.

With "Live at Last," recorded at Bournemouth on March 7, 1978, the band officially dissolved. Singer-guitarist Tim Hart lent the event the legitimacy of print in his liner notes—which, unfortunately, are among the things that shade the album closer to a whimper. There is something in Hart's tone in these notes that makes one want to pick at what he asserts to be facts. "We were told it couldn't be done," he actually, grandiloquently says at one point, reminding anyone who reacts automatically against that sort of thing that the Pentangle and Fairport Convention may already have done it, depending on what he means by "it." There's a kind of hollow bravado in Hart's notes: "We proved them wrong with a gold album, five silver albums," etc. Okay, Tim, but by that standard you didn't prove them as wrong as David Bowie in other odd places. But it's a sad album because it's just good enough to suggest what might have been.

My little buddy Steve Simels called the last Steeleye album, "Storm Force Ten," dispiritful. So is part of this one, although antclimactic is just as good a word if you're feeling generous. It makes a lame start with back-to-back instrumentals of a Scottish thing and a polka, and then, before you know it, Maddy Prior's singing the Brecht-Weill again. The rest of the songs on the first side are performed fairly well, but, as old songs go, there's not a real charmer among them. And then False Knight on the Road, one of the dullest items in Steeleye's repertoire for a long time, takes up valuable space on the second side.

Even when the album is good it can be frustrating, as in the curious last cut, Rag Doll, the old Crewe-Gaudio tune not recorded live but in a studio (although I believe they had performed it live). It seems to me that Prior sings it inside out here, using up the top part of her range on the early part of the verse and having to drop antclimactically down just where things should get more dramatic, not less. But Steeleye does parts of that song so well it reminds you of the brilliant moments they had in albums like "Below the Salt," "Parcel of Rogues," "Commoner's Crown," and "All Around My Hat." They do parts of the song so well they made me fall in love with it, but I still wanted to hear the whole song sung the other way.

Martin Cathy, who was in the group, then out, then back in, is heard on guitar here, he and Hart and bassist Rick Kemp being the main inventors of the sometimes brilliant Steeleye instrumentals. Kemp's importance shouldn't be underestimated; he plays a strange, savage bass that may have been the most distinctive and unifying sound Steeleye had. The instrumentals here, however, make the recurrent impression of being too obviously controlled. It becomes evident that there are arrangements, that this is not a rock band playing the way its people feel at this particular time. That works against a live album, and in this case it also suggests a sobering contrast with the days when Steeleye's sound was convincing. It sounded spontaneous enough a few albums ago, not to mention as spacey as Pink Floyd, and not to mention complementary to the ancient songs. It was the vocals that reconciled these extreme elements. Maddy Prior has a soprano voice with strong male ones. But Hart actually may have been trying to say this: that Steeleye was the first one with a dug-up repertoire and the other stuff and an actual, bona fide rock consciousness. Not a radical distinction, but an important one. The Pentangle and Fairport, when you think about it, weren't fully committed. They were at that folk-rock stage, which involves remaining partly committed to folk. In its heyday, Steeleye Span was one of the most inventive rock bands around, repeatedly.

As I say, this album's breakdowns into a mechanical stage are recurrent and not constant. Almost everything about Rag Doll is exemplary, and Montrose is quite a pleasing cut, and the old shine comes back a few times in other odd places. But it's a sad album because it's just good enough to suggest what Steeleye Span really was about. I'm grateful for the reintroduction to Rag Doll, but the rest of the program has an offhand, almost thoughtless quality about it. I suppose it is an honorable bowing-out exercise, but I'd almost recommend a reunion to make another final album, a real one.

-- Noell Coppage

**Steeleye Span: Live at Last, Steeleye Span (vocals and instrumentals). The Atholl Highlander's/Walter Balwer's Polka; Saucy Sailor/Black Freighter; The Maid and the Palmer; Hunting the Wren; Montrose; False Knight upon the Road; Rag Doll. CHRYSLIS CHR 1199 $7.98, © 8CH-1199 $7.98, © CCH-1199 $7.98.**
RECORDING OF SPECIAL MERIT

ART BLAKEY: Live Messengers. Art Blakey (drums); Clifford Brown, Freddie Hubbard (trumpet); Lou Donaldson, Wayne Shorter (saxophone); Curtis Fuller (trombone); Horace Silver, Cedar Walton (piano); Curley Russell, Jymie Merritt (bass). Arabia; Mosaic; Wee Dot; The Way You Look Tonight; It's Only a Paper Moon; and four others. BLUE NOTE BN-LA473-J2 two discs $9.98.

Performance: Outstanding
Recording: Good mono, so-so stereo

These previously unissued club sessions featuring two Art Blakey groups recorded at Birdland and the Village Gate in New York and at the Renaissance Club in Hollywood are bursting with creative energy. Just why it has taken so long to make this material available is not explained in Ira Gitler's otherwise informative notes, but it defies the imagination. Also hard to understand is why producer Michael Cuscuna has thrown chronology to the wind and programmed the earliest (and best) session last. But these are only minor criticisms; the important thing is that this music is now out for all to hear.

Side four (to ignore Cuscuna's order of things) is a February 1954 Birdland session by an Art Blakey quintet containing Clifford Brown, Lou Donaldson, Horace Silver, and Curley Russell. It wasn't called the Jazz Messengers then, but the instrumentation is the same as for numerous so-named groups that followed. Other recordings from that night at Birdland began appearing on Blue Note in the days of ten-inch LP's, but this is fresh stuff and only one title, Wee Dot, reappears here in an alternate version. It is Wee Dot, in fact, that starts the side at well above the boiling point. Blue Note president Alfred Lion hand-picked this group for the occasion, showing the kind of good judgment and keen perception that had kept his label alive and relevant for fifteen years. Trumpeter Clifford Brown, then twenty-three, had recently toured Europe as a member of a Lionel Hampton band brimming with budding jazz stars, and he was about to form a historic quintet with Max Roach. His work on these tracks—fiery, technically stunning solos that burn themselves into one's memory as indelibly as the solos of the young Louis Armstrong—is alone worth twice the price of the album. Brown's death in a 1956 auto accident becomes all the more tragic in light of the breathtaking vitality and originality of such performances as these.

Like Brown, alto saxophonist Lou Donaldson had previously made his recording debut as a leader on Blue Note (with Horace Silver as a sideman), and the two had recorded together for the label in 1953. An excellent technician with a style derived from Charlie

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Parker, Donaldson was the perfect front-line mate for Brown; the way they kick off *The Way You Look Tonight* with Brown playing "Can't Help Lovin' That Man of Mine" as a counter-melody to Donaldson's statement of the theme is a delight exceeded only by the inspired solos that follow. Donaldson, who was subsequently forced into taking rhythm-and-blues jobs, is in top form here. Igniting the fire in the two horns is a superb rhythm section sparked by a thirty-five-year-old Art Blakey, who, with fifteen years of big-band experience behind him, was beginning to come into his own. Add to that the strongly blues-oriented, at times churchy piano style of another emerging star, Horace Silver, and a driving rhythmic foundation laid down by Curley Russell, one of the bop era's most sought-after bassists, and it's easy to understand why Birdland rocked on the night of February 21, 1954.

The album's remaining three sides feature a sextet recorded in New York and Hollywood in 1961 and 1962. Here the youthful front line consists of trumpeter Freddie Hubbard, trombonist Curtis Fuller, and tenor saxophonist Wayne Shorter; Cedar Walton is on piano, and the bassist is Jymie Merritt, a thirty-five-year-old veteran of rhythm-and-blues bands who had been with Blakey since 1957. While the Birdland session is recorded in well-balanced mono, the 1961 Village Gate session is stereo, and poorly balanced. Unfortunately, it is also comparatively spiritless, but there are a couple of interesting solos by Hubbard.

The 1962 Renaissance Club date is another matter: it takes up two sides, is in well-balanced (if not well-separated) stereo, and has the group playing with such spirit that it is hard to believe these are the very same men we heard on side one. Hubbard had played briefly with Sonny Rollins, Slide Hampton, J.J. Johnson, and Quincy Jones before joining the Jazz Messengers in 1961, but it was with the Messengers that he first made his mark. To hear his rapid-fire playing on such tracks as *It's Only a Paper Moon* and Cedar Walton's *Mosaic* is to understand why. *Mosaic* also includes an absolutely stunning, explosive solo by Blakey and one of the set's many fine examples of a blossoming Wayne Shorter—no wonder Miles Davis hired him the following year. This is an album no serious collector of modern jazz should be without. C.A.

**RECORDING OF SPECIAL MERIT**
*CAPP/PIERCE JUGGERNAUT*: *Live at the Century Plaza*. Frankie Capp (drums); Nat Pierce (piano); Joe Williams (vocals); other musicians. *Basie's Deep Fry; Tarragon; Souvenir; Joe's Blues;* and four others. *Concord Jazz CJ-72* $7.98.

Performance: Straightforward swing
Recording: Excellent remote

When pianist Nat Pierce and drummer Frankie Capp formed their Juggernaut in 1975, both brought previous big-band experience to the venture. Capp had propelled the bands of Stan Kenton, Neal Hefti, and Billy May, and Pierce had been an important part of Woody Herman's band as well as a substitute pianist in the Basie and Kenton bands during the two leaders' illnesses. The Capp/Pierce band has undergone a change in personnel since making its 1977 record debut ("Juggernaut,"
*Concord Jazz CJ-40)—gone are such strong (Continued on page 142)
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JOHNNY GRIFFIN: Live in Tokyo (see Best of the Month, page 83)

RECORDING OF SPECIAL MERIT

SCOTT HAMILTON/WARREN VACHE: With Scott's Band in New York City. Warren Vache (cornet, flugelhorn); Scott Hamilton (tenor saxophone); Norman Simmons (piano); Chris Flory (guitar); Phil Flanigan (bass); Chuck Riggs (drums); Sue Melikian (vocals). Frege, I Love You; Rais!, Darn That Dream; Danny Boy; and four others. CONCORD JAZZ CJ-70 $7.98.

Performance: In the masters' footsteps Recording: Very good

Scott Hamilton and Warren Vache, those two keepers of the mellow swing flame, are at it again here, playing the music of an older generation as if it were their own. This is a delightful set of two Hamilton originals and seven old standards performed with effortless dedication and musical swing. Hamilton is as fluent as ever and Vache is more articulate than I have ever heard him before—they are perfect teammates. The rhythm section, headed by pianist Norman Simmons ( erstwhile accompanist for Dakota Staton and Carmen McRae), operates with equal smoothness, but I'm afraid I can't say the same for vocalist Sue Melikian. She is apparently making her recording debut with this disc, but she is not in the same league as her accompanists; she lacks both breath control and style, and she delivers the lyrics as if she were reading them for the first time. Apart from that, this album certainly contains enough small-band swing to delight anyone who values the music of such past masters as Coleman Hawkins, Ben Webster, and Bunny Berigan. C.A.

ILLINOIS JACQUET: With Wild Bill Davis. Illinois Jacquet (tenor saxophone); Wild Bill Davis (organ); Al Barite (drums). Pamela’s Blues; Cotton Tail; The Man I Love; and three others. CLASSIC JAZZ CJ 112 $7.98.

Performance: No-noise Illlinois Recording: Good

Louisiana-born Illinois Jacquet first came to national attention in the early Forties when he was the star tenor saxophonist in Lionel Hampton’s band (seated next to him and relegating to ensemble playing was Dexter Gordon). Jacquet’s fiery solo on Flying Home was the band’s pièce de résistance; it was so widely copied that it became virtually a permanent part of that composition and so successful with audiences that it inspired a generation of players to emulate Jacquet’s extroverted, or gustic style. His marathon solos were guaranteed to whip Jazz at the Philharmonic audiences into a frenzy during the mid-Forties, but his mellower, more musical side was often overlooked. That side comes through in this album with pioneer Hammond organist Wild Bill Davis, which was recorded in France six years ago. Jacquet’s association with Davis has been a prize to the 1977 documentary in which Davis was still playing piano); each went his own way later, but they worked very well together on this reunion date. The organ/tenor combination sounds a bit dated now (it was dominant in the mid-Sixties) and the r-b style of Pamela’s Blues is still as boring as today’s funk, but on the whole this is a good album by two men we have not heard much from lately. I have to admit that I prefer to listen to what Dexter Gordon has to say these days, but that may be only because he has been recorded in more favorable settings. Reuniting Jacquet with Gordon seems like a good logical idea that Columbus should seriously consider. C.A.

RECORDING OF SPECIAL MERIT

HANK JONES/RON CARTER/TONY WILLIAMS: The Great Jazz Trio at the Village Vanguard. Hank Jones (piano); Ron Carter (bass); Tony Williams (drums). Moose the Mooch: Naima; Favorites; 12+12. INNER CITY IC 6013 $7.98.

Performance: Very together Recording: Could be better

It was Tony Williams’ idea to combine his talent with that of Hank Jones and Ron Carter for a week at New York’s Village Vanguard in the spring of 1975. A year later, the three formidable players were reassembled for a recording session with Japanese saxophonist Sadao Watanabe, and in February 1977 they collaborated for the third time, again at the Village Vanguard. This album is the first of two volumes resulting from the 1977 date; it was recorded for the Japanese East Wind label, which also arranged for the Watanabe session. That Jones, Carter, and Williams are a winning combination should come as no surprise when one considers their individual merits. But, though Carter and Williams’ fluence together in the Miles Davis rhythm section that Jones’ participation was a success. As the notes point out, the small Village Vanguard posses recording problems in general, but some of the problems I hear on this album seem traceable to the recording engineer. Don’t let that deter you from acquiring this album, though, for the music is without flaw and the second volume (which will also be released here by inner City) is something to look forward to. C.A.
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