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LDL 749 speaker system

Sony PS-5520 turntable

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Fisher 504 stereo/quadraphonic receiver

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The Game of the Name

In the three-record "Gala" version of London Records' Die Fledermaus there are two performing "artists" who will never make it into Baker's Dictionary: Omar Godknow and B. Fasolt. The first is the nom d'enregistrement of a very British Decca/London producer whose common expression of surprise is "Oh my God, no!" and the second is an anagram of "fat blob." I understand that following London's pioneering efforts New York Magazine began assigning professions to punny names (Lois Carmen Denominator, math teacher). Reverting to music, here are some musical personalities who have crossed my mind, with appreciation to Contributing Editor Gene Lees for some contributions. If any of them duplicate New York's efforts, I can only plead innocent to having actually seen that magazine's results.

Axel A. Rondeau, conductor with untsteady beat
Noah Zwellers Yuda, his envious assistant conductor
Mischa Solomonis, director of the chorus
Horace Toccata, violin virtuoso: Len Danier, his accompanist
Don Dewitt Rashleigh, violist contemplating solo career
Yvonne Toby Alon, cellist specializing in Bach's solo suites
Kent Reed, incompetent clarinetist: Lois Rae Chester, controbasoon
Preston Piston, trumpeter: Zero Terry Valve, French horn
William Uvover, trombone
Tim Penny and Roland E. Drumm, percussion: Justin Tyme, cymbals
Oberon di Flot, star soloist
Conrad Zinnarins and Lester B. Trubble, musicians union representatives
E. Moses Lawn and Cusier G unit, retired players
Arturo Verseece and Ida Wanda Godair, tour managers
Helen Highwater, fund raiser: Zoro Eval, publicity director
Robin de Riche and Gabe Tudor Paar, benefit-concert organizers
Pandit Ceci Leslie, Anglo-Indian music critic: Juan Cinna Weil, his Marrano "stringer": Juan Canaday, ballet critic
The Itty brothers: Manuel Dexter, pianist, and Hy Fidel, audio engineer
The O'Hare brothers: Hank, rock guitarist, and Gerardt, usher
Roddy van Ewer, C.B.E., recently knighted record producer
Eileen Dover Beckwood, prima ballerina: Hugo Deze, choreographer
Candace Firmus. Moe Tete, and Minnie Singer, musicologists
Aaron da Djeestrting, Dutch composer of violin music
Johann Sebastian O'Strength, influential German-Irish composer
Bela Buttons, Hungarian electronic-music composer
Oscar Wencel Simi, second-rate composer seeking rich patroness: Allison D. Uppinupu, rich patroness of second-rate but often-played composers
Allie Louie Ait, Chinese-American Handel specialist
Warren Peace, baritone specializing in Prokofiev opera
Jose Canusti, tenor specializing in baseball game
Senta Coventry, black-listed Wagnerian soprano: Edith Rico Smee, fat mezzo: Sheilla Peale, sexy star of Solome
Lion Macdull, fencing coach at Scottish Opera
Drummond Pyle, bugpipe handmaster
Shirley Guiness and Mercy Schaltfolloe, atrocius singers
Dinah Loan, songstress who lost her TV show: Les Dan Able, her producer: Darryl B. Mirticum, her agent
Solomon Gaynor Holwhorl and Lucy Soll, gospel singers
Teresa Baumann Gilead, pianist: Frances Fuller Snobbs, chanteuse
Bertha di Bluee, Soul singer: Frieda Pantha, activist folk singer
Mike Harry Tisathee, Zvi Landau Libidy, Obediah Singh, Irish-Israeli-Indian trio specializing in American patriotic songs
Poteeny Zasu Kaire, transvestite blues singer: Thea Jove Aquarius, hemophiliac idol of rock musical: Oliver Hedda Goodtime. last of the red-hot papaus
Carmen Trudy Rye and Nic Seeger, folk duo
Baron Eddie Tor.

Leonard Marcus

Next month's issue will include a survey of 4-channel receivers as well as two opposing answers to the classic question why have there been no great women composers. one written from a Libber viewpoint ("They've been squelched by male chauvinism"), the other written by a psychologist ("They're inherently incapable")—both writers, incidentally, being female.
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FRAMINGHAM, MA 01701
Cussed certain esoteric causes of record warp-

ers. mention of such common causes of deforma-

tion (folded corners of paper sleeves, storage

Cure Record Warping" [September 1972] dis-

His advice on curing warped records was

even worse. I followed the procedure on one of

seven hours later the shape of the warp had

changed from a sort of complex double sine

and then placing it under 67 pounds of books.

Seven hour later the shape of the warp had

changed from a sort of complex double sine wave to a nice, even bump. I placed the record back under the books and left it for three days at the end of which time the warp had reverted to precisely its earlier shape. The surface area of a 12-in. disc is approximately 113 inches divided by 67 pounds by this giving just under 610 pound per square inch. and the failure is un-
dersstandable. Actually, the problem is much

more pressing plant or else the new wafer-thin discs

No manufacturer of records has done a
greater disservice to the serious record collector than RCA with its introduction of the superthin disc. As one who has repeatedly returned RCA classical recordings before finding an acceptable product--or given up in disgust on occasion--I can only suggest that either something is definitely wrong in the RCA pressing plant or else the new wafer-thin discs are impossible for distributors to handle without serious damage.

The last batch of Turnabout recordings that I purchased were completely spoiled by poor surfaces and lack of quality control (the glue from the label, in one case, had spilled all over one side). It is disheartening to read an excellent review in your magazine and upon purchasing the record to find that it is defective.

Like many other record club members who have had to return numerous warped pressings to the club, I was angered at the injustice of having to pay postage to return defective merchandise. A letter I recently received from the manager of customer services at RCA Mu-
sic Service will, I am sure, prove useful to

For me, recordings are an investment, not only in the fundamental terms of dollars and cents, but in terms of time one takes to consider one version over another, of purchasing the recording and living with it, and the satisfaction it yields. Although RCA Records has provided lovers of opera and classical music with some fine artists and interpretations, the quality of this company's discs is so inferior that it has become an impossibility for me to ever purchase RCA recordings again. No matter how great the particular performance.

William Carroll Schwartz
Bronx, N.Y.

Kenton Shortchanged

John S. Wilson's review of Stan Kenton's album, "Stan Kenton Today" [October 1972] was welcome, but I disagree with him on the recording's quality. London has succeeded in

making a wonderful rhythm section sound thumpy while playing down the brasses, which are so important in the Kenton band. Comparison of songs duplicated in the Lon-
don set with Stan's own Creative World recordings will bear me out. Both his Redlands and his Brigham Young albums are better recorded and much more representative of

the sound this band has today.

I have a high regard for London and Phase 4 (i.e., Benny Goodman's wonderful album), but the Kenton band has eluded the engineers. However, I would not part with this Phase 4 album because of his closing number, "God Save the Queen," a fantastic arrangement.

Irvin Sassaman
Tamaqua, Pa.

Varnay's Vocal Art

We recently returned from a European holi-
day full of musical highlights and joys—among them a performance of Von Einem's operatic masterpiece of Dürrenmatt's Der Besuch der Alien Dame, made memorable by the truly unsurpassed performance of Astrid Varnay in the title role. We were fascinated not only by this great singer's acting but by her vocal art.

Knowing her only from her recordings, we were impressed anew by this great operatic personality, whose recorded endeavors should be reissued for the benefit of a generation of new listeners.

Hans Krumen
Cape Town, South Africa

"Hit Parade" Scores

Oh, nostalgia! The "Hit Parade" article by Owen Lee [October 1972] was masterfully written, and by a true music lover. I am certain it contained as much nostalgia for many others of the "over-fifty" crowd as it did for me.

Lucien A. Spriggs
Thousand Oaks, Calif.

The "Hit Parade" article was just great. In his statistics however, Father Lee left out one film that I found most fascinating: Top Hat. All of living Berlin's songs for that film made the Hit Parade: Top Hat, White Tie and Tails, The Piccolino, Cheek to Cheek, Isn't This a Lovely Day, and No Strings. No other show has even come close except On the Avenue, again by Berlin, with This Year's Kisses, I've Got My Love to Keep Me Warm, You're Laughing at Me, and Stumming on Park Avenue scoring with only two songs not making it.

Bob Grimes
San Francisco, Calif.

Bernstein and Mahler

I don't agree with Robert C. Marsh's remark, in his reply to Bill Curtis' letter [October 1972] that Leonard Bernstein was only riding the "crest of Mahler's new popularity." To many, he is very much a creator of that popularity. Bernstein not only expressed the romanticism, but the violence, the mysticism, the longing, and the suffering in Mahler's works. I believe Bernstein correctly interprets the Mahler vision in his recordings. Though Bernstein's readings are uneven (so are those of Solti, Haitink, and Kubelik, for that matter), they are a major landmark in a new Mahler era.

M. Jerel Lauten
Princeton, N.J.

Mendelsohn for Tenor

In her review of the Mendelsohn violin concer-
tos [October 1972], Andrea McMahon wondered how the Andante from the E minor would sound sung by a tenor.

There is an arrangement called He That Be-
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who made the Zero 100.
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who are going to sell it to you.

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arm, the cartridge
head keeps turning
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CIRCLE 63 ON READER-SERVICE CARD

Evergreen Critic
Rarer still than the singer of whom one never tires is the evergreen critic; it was a delight to find Conrad Osborne’s review of the Melchior lode in the October HIGH FIDELITY. Once again he brought good news (the reissue of the Leider/Melchior Polyclords); he reaffirmed facts “those out there” need to be reminded of (his discussion of true lyric singing). Lastly, he proclaimed a self-evident truth I’d stupidly never thought of before—the relationship between styles of delivery in the spoken theatre and in opera. I am tired of hearing every ugly sound hailed as a “dramatic effect” of listening to singers who command no real beauty of tone speak of their willingness to sacrifice what they do not possess in the interests of dramatic truth.

Richard M. Dyer
Cambridge, Mass.

Slighted Composers
I was unhappy to see no mention of Vaughan Williams’ music in your October issue, which coincides with the one hundredth anniversary of his birth. While you have devoted a fair amount of space to reviews of recordings of his compositions recently, some special notice should have been taken of this occasion.

Dr. Roland F. Hirsch
Orange, N.J.

Now that we have recordings of the Anton Rubinstein Fourth and Fifth Piano Concertos, the Konzertstück, and the Ocean Symphony, when can we have tapings of some of his twenty operas, two cello concertos, violin concerto, and the rest of his six symphonies and
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Joseph M. Gunster
Birmingham, Ala.

Just an old gripe—there are too many new releases of "warhorses" (although I love them all) swelling the already lengthy lists in the Schwann catalogue, but Virgil Thomson is neglected. I am unable to obtain two of his delightful compositions—How Thai Broke the Plains and The River. Yet though Stokowski's readings are listed. It is a shame that the public is denied these fine examples of American music.

Barton King
Citrus Heights, Calif.

Tchaikovsky's Missing Variation

Recalling with some nostalgia a 1930 recording of the young Menuhin's Tchaikovsky Trio in A minor, I am disappointed that at least two new releases of this work fail to give us the complete score.

The elaborate eighth variation is omitted in a recent and generally spiritless performance by the Budapest Trio (Heliodor 89 802) for reasons unspecified. In the notes accompanying the Beaux Arts performance on Philips 6500 132, this variation is "optional," and I presume it was the musicians' prerogative to pass it up. The performance is otherwise exquisite. If I recall correctly, the Menuhins repeated the final variation, indicated as "B" of the second movement. Perhaps some musician familiar with the work may enlighten me: Was this also a musical option or a case of youthful zeal?

Leland Windreich
Vancouver, B.C.
Canada

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Leland Windreich
Vancouver, B.C.
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January 1973
behind the scenes

Bernstein’s Carmen—The First Major U.S. Opera Recording in Seven Years

NEW YORK

“Quiet, please. We’re going to record the factory bell for thirty seconds, so hold your ears.” Thus spake DGG’s American-based recording director, Thomas Mowrey, ushering in the final session in the German label’s project to tape the Metropolitan’s 1972 opening night new production of Carmen (the virtuoso bell-ringer’s performance was perfect, by the way—“One take, no inserts,” commented conductor Leonard Bernstein admiringly).

The Met’s Carmen marked DGG’s most ambitious (and costly—a $250,000 price tag is one educated guess) American undertaking to date; it was, in fact, the first really significant opera recording to be taped in this country by a major label since RCA blew the works on Julius Caesar (There have been of course RCA’s Julius Caesar and a few others since). When one thinks of DGG’s last complete Carmen—an auf Deutsch affair from Dresden starring Soina Cervana, strictly for local consumption—the company’s thirst for international prestige has now reached a pinnacle of sorts. With no less a presence than Bernstein on the podium, the Metropolitan’s name blessing the proceedings, and an all-star cast headed by Marilyn Horne, James McCracken, Adriana Maliponte, and Tom Krause, this Carmen could scarcely fail to create waves of interest. Furthermore, despite its bread-and-butter status and the number of noted prima donnas who had participated in past recordings (Callas, Price, Bumbry, De los Angeles. and Resnick to name the obvious), Carmen has yet to achieve a really first-class representation on disc—one noted producer, John Culshaw, finally threw up his hands in despair after guiding his third different version through the tape machines and declared the piece unrecordable.

On the docket for the last session was the final Carmen/Jose confrontation as well as the Gypsy Song and the Act III Prelude (the spoken dialogue was to be dubbed in later). DGG decided on the vast expanses of the Manhattan Center ballroom for its venue—once a popular recording site before domestic union scales made classical recording in New York a sometime thing and now ironically the scene for periodic mass union rallies. The Philharmonic used to record here and most of Igor Stravinsky’s last New York sessions for Columbia were conducted amid its garish 1920 Byzantine decor. A veteran of those sessions and Bernstein’s former Columbia producer, John McClure, was called upon by DGG as a consultant—certainly no one else is better acquainted with the hall’s acoustical characteristics. And the sound as it emerged from the four speakers in the control room had all the richness and body of pre-Philharmonic Hall NYP tapes (DGG, despite their wait-and-see attitude toward quad, naturally opted for the eventual possibility of a four-channel version).

“You’ve missed some very exciting sessions,” Bernstein assured me just before heading out into the chilly recording area for the last duet. “We’ve taped stamping feet, men shouting ‘ole,’ women’s screams diminuendo and crescendo.... Actually, the possibilities for extramusical sounds in a Carmen recording are virtually endless, so I’ve asked that only the essentials be included.”

One vital effect is Carmen’s traditional scream as Don Jose’s knife meets its mark, and there was some discussion about the when-and-how. Marilyn Horne suggested, in jest one assumes, a whispered gasp of “Es-ca-me-o. Arghhh!” Ultimately it was decided to take Miss Horne in camera later on and record a variety of shrieks to decide on the most effective one.

Although neither Horne nor McCracken are strangers to the score, both they and all the other participants clearly looked to Bernstein for the final solution of all musical problems. McCracken, especially, was a study in concentrated intensity during the takes and playbacks, constantly on the lookout for comments on how to improve the fine points of his interpretation. “Don’t make Je ne menace pas sentimental,” the conductor coached McCracken: “try to think, ‘Look, I’m not menacing you. I’m pleading with you.’” and Bernstein dropped to one knee with considerable dignity. Later he convinced Horne not to hold “Oui, je l’aime” quite so long, even when Horne protested plaintively: “Yes, I know we’re both musicians, but I’m a singer.” Nonetheless, Horne had profuse opportunities to show off her voice, particularly that ultrapowerful baritone chest tone as she goaded McCracken into murder.

With the final duet safely completed, the Gypsy Song was given a nonstop first take. The opening flute thirds were a shambles and the ensemble left a great deal to the imagination right up to the final crashing chord. “That’s terrible!” Bernstein moaned melodramatically, throwing one arm into the air in horror. “It’s like we were sight-reading it.” “It’s heaven—print it!” remarked Horne with ill-disguised whimsy after hearing the take. A stop-and-go second take gave Mowrey and his crew the needed material to make a perfect entity, but Bernstein still wasn’t satisfied. “The misery of this piece is that it’s impossible to make a smooth splice in such an unbroken and...
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imperceptible accelerando." So he asked for another complete take and the miracle happened. "Terrific!" Bernstein beamed, and DGG's Carmen was virtually a fait accompli. PETER G. DAVIS

LONDON

Sutherland Meets Caballé in Turandot
Guided past Decca/London's security system as the sole visiting journalist, I entered Kingsway Hall for what some record people were claiming as one of the most costly opera sessions ever: two of the highest paid (if not the highest) sopranos in the world appearing on the same stage together, Joan Sutherland singing Turandot with Montserrat Caballé as Liù.

It was certainly a casting coup, and if anyone was apprehensive in advance about fireworks of temperament, they need not have worried. There were the two great ladies on stage, the happiest of colleagues, laughing and joking together between takes. It so happens that Puccini's two soprano principals meet only once in the opera, which did of course simplify any problems of confrontation, but from the look of it they could have been recording Rosenkavalier.

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era house, a helicopter was called in. Even then it was touch and go, and Ca- balle, so often a center of past crises, was the one who kept murmuring soothingly: "Be tranquil!" In her duet with Domingo she insisted that any flaws in her contribution could readily be left till later in the interest of getting Domingo off to his helicopter. In the end they all came out to wish him good-by, with Cil- lario commenting: "Look, no wings!"

Opera sessions were the order of the day all summer, for EMI also taped Ca- balle in Verdi's Giovanna d'Arco and Philips lined up Cristina Deutekom, Carlo Bergonzi, Sherrill Milnes, and Ruggero Raimondi for an equally rare Verdi opera, Attila. Lamberto Gardelli is the conductor with the Royal Philharmonic. Erik Smith, the Philips recording manager, was lyrical himself about the music of Attila, even after his heavy five-day stint. Happily for record collectors (and the company) it will fit neatly onto four LP sides.

Taping All Over Town. Recording ses- sions in all the main London recording halls were so intensive last summer that when at the last minute EMI decided to record Andre Previn and the Yale Quartet in Brahms's Piano Quintet they were hard pressed to find a hall. Twenty-four hours before the sessions were due to start (on the very day that elsewhere Sutherland and Caballe were on stage together) they were still looking. In the end they resorted to All Saints, Tooting, the South London church where EMI had recorded such large-scale works as Mozart's Requiem with Barenboim and Act I of Walküre with Klemperer.

Recording manager Suvi Raj Grubb was a little apprehensive about taping a chamber work in such a setting but without too much difficulty they found the right, not too reverberant, spot in one of the side aisles. In the end Previn's doubt was less about the acoustics than about the temperature. On a scorching August day, he could justly complain, "It's cold in here." It was through their records (which bowled him over) that Previn first thought of asking the Yale Quartet to play with him in London's South Bank Summer Music, and the recording ses- sions came as a welcome bonus.

One startlingly brisk job well done was Barenboim's work with the London Philharmonic on Elgar's Second Sym- phony. The sponsors, surprisingly, are Columbia Records, who are even thinking of encouraging still further Baren- boim's new passion for Elgar. Paul Myers, the Columbia recording manager, commented that the sessions seemed like intensive American undertakings rather than more leisurely Brit- ish-style ones, since Barenboim—who had just conducted two concert perform-
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ances—went straight for a master take of each movement at the first attempt. As a result, the whole work was completed to everyone’s satisfaction in an exhilarating five hours—instead of the nine hours budgeted for the fifty-five-minute symphony.

In another CBS project Barenboim accompanied Pinchas Zukerman for two more installments in their Mozart violin concerto series with the English Chamber Orchestra. Then for Deutsche Grammophon, Barenboim and the London Philharmonic tackled Brahms’s German Requiem with Edith Mathis and Dietrich Fischer-Dieskau as soloists after an Edinburgh Festival performance. The Festival Chorus also takes part, directed (like the LSO Chorus in London) by Arthur Oldham. It was Oldham that Barenboim, to celebrate his colleague’s birthday, conducted a full-scale choral version of Happy Birthday before one of the sessions. What would Brahms have thought? The sessions took place—like those of DG’s Cenerentola last year—in a school hall, George Watson’s College, and when not recording everyone turned for entertainment to the television relays from the Olympic Games.

Less happy relays from Munich after the murder of the Israeli athletes affected at least one day of the intensive chamber music sessions that Artur Rubinstein had at Victoria Hall, Geneva, with Henryk Szeryng and Pierre Fournier. This time their main concern was to complete the Brahms piano trios, and this they did, one per day despite Rubinstein’s upset over Munich. In the sessions—was that every day was Rubinstein who outstayed the lot of them in sheer stamina, pressing on with the sessions. determined not to break off before each work was completed.

Stokowski too was in great form when in Prague that same week he recorded for Decca/London’s Phase 4 label an unexpected coupling. Elgar’s Enigma Variations and Scriabin’s Poème d’extase. Everyone was rather worried—everyone except Stokowski—when he sprained a tendon in his leg and had to appear on crutches. But once on the rostrum he insisted on standing. Nor was he worried by the television lights at one of the performances. What the recording team under Raymond Few did was to record his two live concerts with the thought of marrying the results afterwards—a fairly easy matter in the Elgar Variations at least. That, incidentally, is a work the Czech Philharmonic had not played since 1909. Florent Elgar, says the English commentator. EDWARD GREENFIELD
That’s the way Stereo Review described our XLM. High Fidelity headlined their review, “Superb new pickup from ADC” and went on to say, “…must be counted among the state of the art contenders.” And Audio echoed them with, “The ADC-XLM appears to be state of the art.”

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**Frequency response** The CBS STR-100 test record showed less than ±1.5dB variation up to 20,000Hz. Stereo Review. The frequency response is within ±2dB over the entire range. Audio. Frequency response is exceptionally flat. High Fidelity.

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**Hum and noise** The XLM could be instrumental in lowering the input noise from the first stage of a modern transistor amplifier. Audio. The cartridge had very good shielding against induced hum. Stereo Review.

**Price** This would be a very hard cartridge to surpass at any price. Stereo Review. We found it impossible to attribute superior sound to costlier competing models. High Fidelity. Priced as it is, it is a real bargain in cartridges. Audio.

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Your first preamplifier was probably a kit or prebuilt economy model with minimum quality and just the basic features. Since then you no doubt have become more discerning and can hear more music than your old preamp "lets through." Perhaps it is hindering the development of your music appreciation? We suggest that you consider the new Crown IC150 control center for significantly increased enjoyment. For example, does the loudness control on your present unit really do much? The IC150 provides beautifully natural compensation whatever the volume. Similarly, your tone controls may give inaccurate effects, while the IC150 has new "natural contour" exponential equalizers for correct compensation at low settings. Is your preamp plagued with turn-on thump and switching pops? Crown's IC150 is almost silent. The three-year parts and labor warranty is based upon totally new op-amp circuitry, not just a converted tube design. Most dramatic of all is the IC150 phono preamp. No other preamplifier, regardless its price, can give you disc-to-tape recordings so free of distortion, hum or noise, and so perfect in transient response. It also has adjustable gain controls to match the exact output of your cartridge. These are some of the refinements which make the IC150 competitive with $400 units, although you can own it for just $269. Only a live demonstration can tell you whether you are ready to graduate to the IC150 and explore new horizons in music appreciation. May we send you detailed product literature today?

Ask your dealer also about Crown's new companion D150 power amplifier, which delivers 150 watts RMS output at 8 ohms (150 watts per channel at 4 ohms). No amp in this power range - however expensive - has better frequency response or lower hum, noise or distortion. It offers performance equal to the famous DC300, but at medium power and price. It's worth listening into!

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60 Years Ago

So many complaints of atmospheric conditions in Carnegie Hall, and their serious effect on the health of people who go there, have been received by Musical America that a representative of this publication has made an investigation of the ventilation there, talking with music critics, physicians, subscribers to the symphony orchestra concerts, and the executive officials of Carnegie Hall. A Wall Street man told our reporter: "Formerly I had a reputation as a friend of being musical and of appreciating and admiring good music. On several occasions I have found myself dozing at Carnegie concerts, which has subjected me to a lot of ridicule. For a long time I wondered what was the matter. Then I began to understand. It was the bad air in the hall that made me drowsy."

Massenet's Manon returned to the Metropolitan this month with Farrar, Caruso, Gilly, and Rohrer. Caruso was in fine vocal shape, but it takes considerably more than golden tones lustily emitted to make an ideal Des Grieux, and in well-nigh every respect Caruso falls short of realizing this ideal. His Des Grieux has neither grace, subtlety, polish, nor the remotest suggestion of Gallic elegance. Dramatically he is an awkward, unappealing, unattractively figure. His vocal style is about as little calculated to meet the requirements of Massenet's music as it would be to do justice to Mozart or Wagner. And alas for Caruso's French pronunciation!

40 Years Ago

A manifesto against modern music, signed by some of Italy's most prominent composers, has caused considerable stir: Ottorino Respighi, Ildebrando Pizzetti, Riccardo Zandonai, Riccardo Pich, Mangiagalli, Giuseppe Mule, Alberto Gasco, Alceo Tonii, Guido Guerinii, Gennaro Napoli, and Guido Zuffenato are the signatories; and the document attack contemporary tendencies in no uncertain terms: "We are," it says, "against this art which cannot and does not have any human content, and desires to be merely a mechanical demonstration and a cerebral puzzle. The confusion of Bebel reigns in the musical world. For twenty years the most diverse and disparate tendencies have been lumped together in a continual chaotic revolution."

Antonio Scotti has sung his farewell. A weary but gallant figure in spite of his sixty-seven years and his sinister make-up as the Chinese opium-den keeper of Leon's L'Oracolo, he took leave of a legion of long-time admirers after forty-three years in opera. All but ten of which he had spent on the boards of the Metropolitan. Lawrence Tibbett led a group that sang For He's a Jolly Good Fellow. There were many moist eyes. "God bless you all for what you do for me," said Scotti in a little speech. Then he too wept.

20 Years Ago

Vladimir Horowitz contributed his services for the New York Philharmonic Pension Fund benefit concert, playing the Tchaikovsky concerto twenty-five years almost to the minute after he had made his American debut with it. His performance was a phenomenal display of pianism, quite aside from any considerations of interpretative taste. It does no injustice to any of the parties concerned to infer that the occasion had the atmosphere of a bullfight. The deafening applause continued for fifteen minutes. And Mr. Horowitz deserved every bit of it for his unbelievable show of technique. The sheer velocity was fantastic. George Szell kept the orchestra up to the soloist as best he could, but the evening belonged to Mr. Horowitz.

20th Century-Fox is planning a Technicolor picture, tentatively labeled The Girl With Black Glasses, which will have the Metropolitan Opera as its setting and a plot constructed around the success story of Roberta Peters, whose golden opportunity came two years ago when she was called upon suddenly to step into the role of Zerlina in Don Giovanni upon the illness of Nadine Conner. Miss Peters may play herself in the picture. Will it be done that way? In view of the Hollywood maxim, never do anything the right way if a good wrong way is available, probably 'tis a consumption only to be wished.

A nostalgic romp through the pages of High Fidelity and Musical America
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CIRCLE 30 ON READER-SERVICE CARD
How much added frequency response should I expect in using Crolyn tape as opposed to a good ferric oxide brand?—Allan Mesko, Lima, Peru.

Chromium dioxide tapes (of which Du Pont's Crolyn is the best known) don't offer greater frequency response as such. In layman's terms, they offer greater "room" for fitting information into a given length of tape. This property can be used in a number of ways, depending on the design of the recorder. Some equipment makers use it to pack extra high-frequency information (that is, more extended high-frequency response) into the recorded signal; others use it to allow recording at higher levels, in effect, and therefore to keep the signal farther above inherent noise levels. Or the extra room can be used to prevent distorted sound on short-duration peaks (for added headroom, as an engineer would put it). In fine, the added room means added performance, to attempt measurement of the improvement in terms of frequency response alone is meaningless.

I have a Panasonic RS-820S (The Bainbridge) stereo FM/AM receiver with built-in 8-track recorder. I had thought I could use its amplifier for the front channels if I converted to four-channel stereo, using a Sansui QS-500 for the back channels, but the RS-820S has no tape monitor connections. How would I connect the QS-500 into the system?—Ronald W. Mannon, FPO, New York.

Unless you're willing to make internal changes in the Panasonic, it looks as if you're out of luck. The RS-820S is not what we would consider one of Panasonic's more flexible models. (It's really a compact.) You could connect a speaker-matrix adapter like the Dynaco Quadaptor to the output terminals of the Panasonic and add only a second pair of speakers. This will give you matrix decoding of sorts—but will give neither the precise parameters of QS decoding, the discrete-quadruphonic input, nor the variety of control options offered by the Sansui. A suggestion: next time, choose real components, not a compact.

In your report on the Heath AD-110 cassette-deck kit [September 1972] you omit any mention of wow and flutter. If this is a new policy regarding tape-machine testing, I must protest. In the same report you give the speed error as 1.2% fast (not an unusual figure) and say that this error will cause a correctly recorded tape to "sound about a half tone up in pitch." A half tone represents a change in frequency closer to 6%. What's going on?—Allen Watson III, San Francisco, Calif.

A half tone does, as you say, represent a difference in pitch of some 6%; and we were wrong to characterize the relatively minor discrepancy in the AD-110 as "about a half tone." It is, however, somewhat poorer than par for the better cassette decks today, where speed error often runs a little under 1%. The omission of wow and flutter data was not intentional. Due to a makeup error the entire "additional data" box was left out, though the speed-error data were discussed in the text. In addition, the lab clocked 0.15% wow and flutter in playback and 0.17% in record/playback, a rewind time (for a C-60 cassette) of 1 min., 54 sec., and a fast-forward time 3 sec. longer, playback S/N ratios of 50 dB (left channel) or better; record playback S/N of 45.5 dB (left channel) or better, erasure of 59 dB; crosstalk of 39 dB (record right, play left) or better; aux input sensitivity of 90 mV (either channel); mike sensitivity of 0.29 mV (right channel) or better; meter tracking (with respect to the DIN 0 VU) of 6 dB (both channels); maximum output from DIN 0 VU of 1.1 V (left channel) and 1.3 V (right channel); and IM distortion at -10 VU of 7.5% (left channel) or better. Good figures, all; both a confirmation of and a basis for our statement that the AD-110 is a very desirable unit in its non-Dolby class.

A reliable stereo dealer recently told me that components purchased abroad in military commissaries have a different design and are of inferior quality by comparison to the same models sold in the United States. I was interested in buying the Sony 580 open-reel deck abroad, but now I'm not sure I should. What do you think?—Ron Domingue, Wallingford, Conn.

It's not really a question of product quality so much as one of product servicing. Some units sold overseas differ in circuitry (particularly in the power supply section) from units carrying the same model number but sold here. The change can cause problems for a service technician, since he normally will have only the U.S. service manual (showing the wrong circuitry) to work from. Beware of warranty problems in particular. Superscope, the U.S. importer of Sony tape products, is unequal (though not unique) in that it will honor warranties. In one case I tested, the unit was not bought through Superscope. Most U.S. importers state flatly that if they made no profit on the sale, they have no way of funding warranty repairs.

The clarity and range of the sound, together with the balances between orchestra and singers, in the DG recording of the Met's farewell to Rudolph Bing are top-notch. Yet it was recorded in the same theater and presumably under the same conditions that apply for the Saturday afternoon Met broadcasts. Surely American broadcast engineers, working on a regular basis and in mono, should be able to do at least as well as a German crew setting up for the first time and with the added complexities of stereo recording. Are the standards of our broadcast industry really that antiquated?—Daniel Waxler, Dover, N.J.

A host of factors can influence the comparison you suggest. You're presumably listening to the Met broadcasts via what might be called the direct feed to WQXR-FM, New York. Listeners in the rest of the country aren't so lucky; their stations must get the signal via land lines that don't do anything good for signal quality. That knowledge is enough to dim the enthusiasm of even the most devoted of broadcast engineers. Then there's the question of visible microphones. Presumably DG was allowed placement options that the Met would discourage for use during full-length presentations as disruptive of the stage "picture." But most important, in our guess, would be economic considerations. Recently published memoranda of the Bing era make it clear that a DG recording project was discussed long before the farewell gala. And such projects can raise extra revenue for undernourished Met coffers. A DG Carmen conducted by Bernstein is now under way as a matter of fact; but if you could record an equally attractive (though mono) Bernstein Carmen off the air, you would be less likely to buy the commercial recordings—and therefore the Met would have less hope of the extra revenue. While we don't like to think that the Met has deliberately limited the quality of the broadcasts, its officers obviously have little reason to make the sound really superb.

Why is it that whenever I get interested in a tuner it turns out to be available for FM only? The Citation 14 and Citation 15, the Dynaco FM-5, and the Heathkit AJ-1510 look particularly good at the moment; but you can't buy comparable AM tuners and I don't want to be without AM.—Elton Morse, Amarillo, Texas.

You can buy the Dyna FM-5 with AM as well; in that form it's known as the AF-6. Apparently manufacturers have found that most buyers of sophisticated (and expensive) separate tuners tend to look down their noses at AM and are therefore unwilling to spend even a little more for the "inferior" broadcast medium. The result is that buyers in the boondocks, where there's limited choice in available FM programming, feel shortchanged—particularly since listeners in such areas often need a very good AM section as well in order to pull in distant stations.
Quadraphonics and Obsolescence Prevention

"Should I buy quadraphonics?" "Which systems will survive the next two or three years?" Be assured you're not alone in your uncertainty about four-channel. Manufacturers also cannot afford to invest in a product that will be out of date in a few months. Thus while no component can be all things to all users, manufacturers and their customers share a common interest in avoiding instant obsolescence.

We recently visited one company (Harman-Kardon) that had sampled customer feedback on quadraphonics via questions to some two hundred visiting dealers. These questions included: Do customers ask to see stereo or quadraphonics in the stores? (Generally stereo was the answer.) Is it best to stress the stereo capabilities of the units and only mention four-channel functions in passing, or should the emphasis be on quadraphonics? (Again, most of the dealers thought that stereo was the bigger enticement.) Even at this point the company avoids labeling the four models of its new receiver line either "quadraphonic" or "stereo." And each model's amplifier section can operate not only as a quadraphonic system, but as two independent stereo systems, or even "strapped" to produce a single but higher-powered stereo amp.

This approach is typical of U.S. manufacturers, most whom are hedging on an exclusively four-channel approach.

Japanese companies, however, are often opting for quadraphonics at the expense of stereo versatility. But if H-K's dealers were any indication of the general American attitude, 2-channel/4-channel versatility would appear to be the best approach for now in the U.S.

Motorola and the Piezoelectric Tweeter

Motorola has developed a unique tweeter. It has no magnet, no voice coil, no air gap, and—when incorporated into a multdriver system—it requires no crossover network. It operates on the piezoelectric principle whereby mechanical stress on crystal elements can be translated to electrical voltage (as in ceramic pickups) and vice versa (as in this new speaker).

Piezoelectric transducers are said to convert more energy with less heat—that is, they are more efficient—than dynamic transducers. The tweeter is constructed of two oppositely polarized ceramic discs separated by a corrugated center element. An input voltage causes one disc to expand rapidly while the other contracts. The design reportedly delivers 100 dB at 4 volts rms, will handle 35 volts rms continuously without burning out, and can be used with dynamic drivers of varying impedances.

Motorola says it hopes to introduce the principle in full-range speakers and in flat, planar radiators.

Standards Dept., U.S. Army Div., Video Sect.

It's axiomatic that the videotape picture—at least in forecasting the home market—will continue cloudy until there is more agreement on standards, or at least until software manufacturers can tell with some reliability which videotape systems have enough acceptance to make the mass production of blank tapes and prerecorded programs worthwhile. The U.S. Army (of all people) recently gave one system a noticeable nudge. Commenting that its present 600 recorders had racked up an excellent reliability record, it decided to standardize on the Sony U-Matic videocassette system for future purchases, which are expected to bring the army's total recorder ownership in this format up to as much as 10,000 units by the end of next year.

Sony Corp. may not be quite as pleased with this announcement as one might presume. The last time the army complimented the company it was on the quality of its small TV monitor units, which the army had been using as part of a TV-guided bomb system. That news triggered a prompt note of complaint from Sony to the U.S. Ambassador in Tokyo. Sony, it seems, considers its products to be entirely peaceful and was unhappy to find them being requisitioned for military use. One major army use for the U-Matics will be in training procedures; another will be for entertainment in army hospitals.
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equipment in the news

APL pentagonal speaker system

The APL-16, a new speaker system from Applied Physics Laboratory, is designed to distribute acoustic energy uniformly at all audible frequencies and to be capable of producing very high sound-pressure levels. To do this, the unit uses sixteen identical full-range 4½-inch high-compliance drivers—four facing outward at the front and twelve radiating from the back panels—within a single airtight infinite baffle. All drivers are coupled in phase and driven through a passive equalizer. The APL-16 is recommended for use with amplifiers delivering at least 30 watts of continuous power per channel and is said to be capable of handling 200 watts per channel. Price: $387.50.

Capacitance pickup from Toshiba

The C-401S phono cartridge from Toshiba America uses the stylus cantilever arm as one plate of an electret condenser transducer. Integrated-circuit amplifiers built into the cartridge amplify the signals from this transducer and feed them to the SZ-200 equalizer. The pickup system is said to have a dynamic range approaching 100 dB and a frequency response of 20 to 35,000 Hz. The C-401S and SZ-200 retail at $129.95. The new cartridge also is available as part of the Toshiba SR-80 belt-driven turntable unit costing $299.95.

Automatic shutoff device from HR

A novel accessory from the HR Manufacturing Co., Inc., of Sarasota, Florida could be a boon for the absent-minded. It is the Model SAC-1, the letters standing for Signal-Activated Control. With the SAC-1 connected into the stereo system, everything runs normally as long as there’s a signal going to the loudspeakers. When the signal stops, the SAC-1 will shut off the system after ten minutes. The price is $39.95.

Kenwood’s KR-5200 receiver

Kenwood has designed the KR-5200 stereo FM/AM receiver with direct-coupled output for wideband response and low distortion. Rated at 30 watts per channel continuous power with both channels driven into 8 ohms, the receiver has connections for two tape decks, inputs for two aux sources, a front-panel microphone jack, and separate preamp output connections on the rear panel. The KR-5200 is priced at $349.95.

New Garrard turntable module

Garrard is offering its 42M Pre-Pack, a three-speed record changer, complete with a Shure or Pickering magnetic cartridge with elliptical stylus. The 42M/S contains a Shure M75ECS cartridge, while the 42M/P features a Pickering V-15 APE-4. The turntable is delivered with the chosen cartridge premounted and the tone arm balanced. The complete unit, with either cartridge, sells for $90.85.

34
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Another benefit for matrix recordings is our phase shifter. It has three different settings that correspond to the passing of the various matrix systems. So virtually any matrix recording can be played.

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Of course, there are other features in these Panasonics. Like our single lever remote balance control. It lets you control the balance of all four channels. From your easy chair. And as for the SA-6800X specs, we think you'll find them as interesting as its special features.

Model SA-6400X gives you 150 watts IHF at 4 ohms. With many of the same specs as Model SA-6800X.

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Listen carefully and you can still hear some audiophiles refer to the record stylus as . . . "the needle." Although we are not about to quibble over semantics, we would like to go on record, so to speak, as observing that the stylus of today bears no more resemblance to a needle than it does to a ten-penny nail. In fact, it is probably the most skillfully assembled, critically important component in any high fidelity system. It must maintain flawless contact with the undulating walls of the record groove—at the whisper-weight tracking forces required to preserve the fidelity of your records through repeated playings. We put everything we know into our Shure Stereo Dynetic Stylus Assemblies—and we tell all about it in an informative booklet, "Visit To The Small World Of A Stylus." For your copy, write:

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Now you can mix and match a complete KLH component music system for as little as $300.
Continued from page 34

Dolbyized cassette deck from Panasonic

The RS-276 cassette deck is one of several with Dolby B noise reduction circuitry introduced this year by Panasonic. It also has a two-motor drive system, a memory rewind feature, bias adjustment for chromium dioxide tape, automatic stop at the end of the tape, a lockable pause control, and separate VU meters for each channel. The price is $399.95.

Audio-Technica introduces phono cartridge line

A new line of phono cartridges from Audio-Technica uses a dual moving magnet design to provide, the company says, better tracking ability and extended response. The Model AT-14S (shown) has a nude Shibata stylus on a tapered cantilever and tracks at ¾ to 1 ½ grams. The price is $69.95. Other models range from the AT-10 (spherical stylus, $19.95) to the limited-edition, hand-selected AT-15S (nude Shibata stylus, $150).

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We'd like you to know more about us. The Museum of Modern Art knows us well enough to have placed our work in their permanent design collection. Once you review the B & O system you'll probably share the Museum's appreciation for our Beovox speakers and unique Beomaster 3000-2 FM Stereo Receiver. The receiver, for instance, features ceramic filters, field effect transistors and integrated circuits for superior performance and sensitivity. There is the convenience of precision slide tuning and varactor diodes to simplify station pre-setting and selection. Other advantages are inputs for a turntable and two tape decks, plus outputs for two sets of speakers.

Write for free B&O catalog Dept. D 2271 Devon Ave. Elk Grove Village, Illinois 60007

Bang & Olufsen

CIRCLE 92 ON READER-SERVICE CARD

CIRCLE 155 ON READER-SERVICE CARD

From Denmark for discerning Americans.
The best time to upgrade your component system is before you buy it.

If you're a typical reader of this magazine, you most likely have a sizeable investment in a component system. So our advice about upgrading might come a little late.

What you might have overlooked, however, is the fact that your records are the costliest and most fragile component of all. As well as the only one you will continue to invest in.

And since your turntable is the only component that handles these valuable records, advice about upgrading your turntable is better late than never.

Any compromise here will be costly. And permanent. Because there is just no way to improve a damaged record.

If the stylus can't respond accurately and sensitively to the rapidly changing contours of the groove walls, especially the hazardous peaks and valleys of the high frequencies, there's trouble. Any curve the stylus can't negotiate, it may lop off. And with those little bits of vinyl go the high notes and part of your investment.

If the record doesn't rotate at precisely the correct speed, musical pitch will be distorted. No amplifier tone controls can correct this distortion.

If the motor isn't quiet and free of vibration, an annoying rumble will accompany the music. You can get rid of rumble by using the bass control, but only at the expense of the bass you want to hear.

Experienced component owners know all this. Which is why so many of them, especially record reviewers and other music experts, won't play their records on anything but a Dual. From the first play on.

Now, if you'd like to know what several independent test labs say about Dual, we'll send you complete reprints of their reports. Plus a reprint of an article from a leading music magazine telling you what to look for in record playing equipment. Whether you're upgrading or not.

Better yet, just visit your franchised United Audio dealer and ask for a demonstration.

You'll find Dual automatic turntables priced from $109.50 to $199.50. That may be more than you spent on your present turntable, or more than you were intending to spend on your next one.

But think of it this way. It will be a long, long time before you'll need to upgrade your Dual.
WHERE BROADCASTING is concerned, high fidelity
and stereo FM have become virtually synonymous;
and FM tuners and receivers today invariably in-
clude the multiplex circuitry necessary to stereo re-
ception. Yet high fidelity product specifications
rarely include much information on stereo per-
formance of FM circuitry, and the IHF (Institute of
High Fidelity) standard on FM tuner testing—pro-
mulgated in mono days—makes no mention of
stereo. So while we buy our FM equipment for
stereo listening, our choice must be based on infor-
mation relevant only to mono performance.

Not that FM receiver design has been standing
still for ten years. On the contrary, two innovations
of the early Sixties have been like whips cracking
over the designers' heads: the FCC's 1961 decision
to permit the multiplexed broadcasts themselves
and the widespread application of the transistor
(and, later, the integrated circuit). The demands
made on circuitry by the need to handle and de-
code multiplexed information, plus the adapt-
ability of solid-state devices to even the most com-
plex circuit configurations, has brought a sophis-
tication and refinement to present equipment that
surpasses that of a decade ago.

The use of ICs and field-effect transistors (FETs)
literally transformed many areas of electronics—
not just in terms of their compactness, economy of
manufacture, and reliability, but in circuit design
itself—in the kinds of choices an engineer makes to
solve a design problem. Designs that were un-
wieldy or even inconceivable with tubes, and are
still uneconomically complex with discrete transis-
tors, have become standard with ICs. The results
are usually pleasing in every way: They work bet-
ter; they cost less to manufacture; they are more re-
liable, more compact, and more convenient.

The price of stereo is not only greater complexity
in the transmitting and receiving equipment, but—
perhaps more important in this context—poorer
signal-to-noise ratios in the signals themselves. Un-
questionably, when a channel of given capacity
transmits more information, that information be-
comes more vulnerable to disruption by noise—
meaning unwanted signals or random disturb-
ances. While most of us are aware of a usual in-
crease in background noise level, and sometimes
distortion, when we switch from mono reception to
stereo, we tend to forget that this degradation of
signal-to-noise ratio is largely an inherent conse-
quence of transmitting stereo instead of mono.

There are definite theoretical limits to how well
even the best possible tuner can perform when it
has to handle a stereo signal. A stereo signal con-
tains more information than a mono signal—
namely, the stereo "difference" information that
sorts out left and right components within the
"sum" signal we call mono. A subcarrier that forms
part of the FM station's signal transmits this differ-
ence information. The subcarrier: a 19-kHz pilot
signal (to keep the receiver's demultiplexing syn-
chronized with the transmitter's multiplexing), a
little extra space for the fallibilities of available
filters, and still more space to allow for a back-
ground-music subcarrier (the well-known SCA
subchannel)—all this drastically increases the in-
formation "loading" of the FM channel.

The greater bandwidth required to accom-
modate all of this information makes a stereo tuner
more susceptible to noise than an equivalent mono
tuner. FM theory can calculate the amount of deg-
radation quite precisely, and it works out to ap-
proximately 23 dB as long as the peak noise inten-
sity is not much greater than one tenth of the peak
signal strength. Other design systems could have
been used—and were tested—that would have de-
graded stereo performance less, but only at the ex-
panse of compatibility with SCA reception or of
more complicated circuitry.

This does not mean that the ultimate program-
to-noise ratio of stereo reception must be 23 dB
worse than mono reception. Clearly, good stereo
reception gives just as quiet a background as one
gets from the best mono broadcast. What it does
mean is that even with theoretically perfect equip-
ment the RF (radio-frequency) input signal
strength must be about 23 dB greater to produce a
given degree of quieting (suppression of noise and
distortion) with a stereo signal received in the
stereo mode than with a mono signal received in
the mono mode. A 23-dB increase in voltage cor-
responds to a factor of approximately 14. Thus if 10

The author, a former audio editor of Radio-Electronics, is a
professional recordist and audio consultant.
Approach to Stereo FM Receivers

The fixation with mono FM sensitivity as a performance index can be misleading. Microvolts will produce an acceptable level of quieting in mono; it will take about 140 microvolts to produce the same degree of suppression of total noise, hum, and distortion in stereo, all other things being equal.

That fact can be interpreted in several ways. One somewhat simplistic interpretation would have you move in toward the transmitter (say, from 70 miles away to 5 miles away) to get the same quality of reception in stereo as you do in mono. While unrealistic, this dramatizes how drastically you lose coverage when you receive a stereo broadcast in the stereo mode. Further on, I'll offer suggestions on what to do about that.

Getting the Facts

The only existing U.S. measurement standard for FM tuners was published in December 1958, some two-and-a-half years before stereo FM broadcasting officially began, by the IHF (then the IHFM—Institute of High Fidelity Manufacturers). While not explicitly giving performance criteria, the IHF did standardize measurement techniques and procedures so that results of tests made by different labs on different tuners could be compared meaningfully. The question is: How well does the standard accomplish its goal?

The measurement procedures themselves imply certain assumptions about the performance of tuners—assumptions that now may be invalid in these days of stereo broadcasting and tremendous technical improvements. For example, sensitivity is to be measured by using a 30-dB suppression of total hum, noise, and distortion below the level of the audio. A 30-dB signal-to-noise ratio is excellent for communications where intelligibility is all that is demanded; it is barely adequate (if that) for high fidelity music reproduction. In this and many other examples, the standard's authors may have been overcautious or excessively eager to see that no manufacturer's tuner would look too bad when measured by the specified procedures. Any decent tuner now, some fourteen years later, will still give a respectable sensitivity figure (that is, a nice low number) for 40- or perhaps even 50-dB quieting, which is much more meaningful. We have learned also that sensitivity as such is hardly the most important of a number of specifications that can be applied to an FM tuner. Yet, like the horsepower of a car or the output power of an amplifier, it has become the popular number one thinks of first and uses most to characterize the unit. The blame for that rests partly with the IHF standard and overzealous advertising based on it.

Through a combination of excusable ignorance, lack of foresight, and inexcusable commercial pressure, the IHF standard for tuners is clearly inadequate for mono FM. But more important now, it offers little help in checking a tuner's performance on stereo signals. Although the bulk of musical FM broadcasting today is in stereo, neither manufacturers nor magazines in this country have been publishing sensitivity or quieting characteristics measured in the stereo mode. In this respect the stereo data provided by CBS Laboratories for the accompanying illustrations represent a radical departure.

Since stereo channel separation curves and harmonic distortion figures are obvious gauges of stereo reproduction quality, they always have been shown. But it is less well known that a tuner's sensitivity—the signal voltage required at its antenna terminals to produce a specified amount of suppression of noise and distortion—is always theoretically poorer in stereo than in mono. A tuner aligned for the best possible performance on stereo signals needs a slightly greater signal from its antenna than a tuner similarly aligned for mono. To put it differently, a tuner aligned for the best IHF sensitivity only (smallest number of microvolts for a 30-dB suppression of hum, noise, and distortion) may perform very poorly in other, more important ways—especially when receiving stereo. Again, sensitivity as such is a relatively unimportant gauge of a tuner's quality.

There is no simple correlation between any one tuner's sensitivity figure for stereo reception and that for mono. The relationship depends on several factors in the design of the tuner—factors that influence other performance characteristics as well. By understanding the implications and interrelationships of the data presented with tuner test
reports you can easily judge how a particular tuner will perform in your situation.

Note the steepness of a tuner’s quieting (sensitivity-vs.-limiting) curve as discussed in many articles in this magazine ["How to Understand Our FM Test Reports." HF, February [1972] and elsewhere. This is more important than the exact value at which the curve crosses the 30-dB quieting line (its IHF sensitivity rating). The curve should plunge quite rapidly to very nearly the lowest noise and distortion the tuner can manage (preferably -50 dB or better), and it should reach that value when the input signal voltage is between 10 and 50 microvolts—the lower the better. The (mono) curve shown in the illustration for the Panasonic SA-5800 is an excellent example. With the signal strength at the tuner’s antenna terminals at only 20 microvolts, the total hum, noise, and distortion ("total garbage," as one engineer calls it) is 57 dB below a full-strength (100% modulated) 400-Hz tone. The Dynaco FM-5, the Fisher 801, and the Pioneer SX-626, also shown, have excellent quieting curves in that respect.

It is important to recognize that the IHF standard calls for measuring sensitivity with respect to all undesirable material at the tuner’s output—not just random noise (hiss). Therefore a relatively high minimum quieting figure (say -40 dB) could be caused by hiss, hum, or distortion. The curve does not distinguish between them, although distortion measurements do. Since a level of -40 dB below 100% modulation corresponds to 1% of that modulation level, the curve will never fall below the -40-dB line no matter how well the tuner suppresses hiss or impulse noise if the tuner’s residual distortion is 1%. Poor limiter design or insufficiently wide IF or detector bandwidth could result in such a comparatively mediocre figure. In the latter case, the deficiency should also show up as high distortion in stereo (shown in the report’s “Additional Data” box), poor stereo separation, and probably also poor capture ratio.

Now look at the stereo curves. Their slope always will be less steep than that of a mono curve for the same tuner. Sometimes the measurement is made only from the point where the automatic mono/stereo switching circuit in the tuner “decides” the signal has acceptably low noise; where the tuner permits. measurements are made right down to the 30-dB quieting point.

Frequently the stereo curve bottoms out at a value well above that for mono reception. Again, just looking at this pair of curves offers no way of knowing whether the stereo multiplex decoding circuitry, the IF stages, or the detector is at fault. Ideally, the stereo and mono curves should converge as the signal gets greater (that is, as they move toward the right in the graph). If the best stereo performance falls noticeably short of the best mono performance, the tuner is not as good as it might be.

If you live in a fringe area, you should look for a tuner whose curve shows that its total noise and distortion reaches an acceptably low value at a low RF input voltage in the stereo mode. As an example, examine the curve for the Panasonic SA-5800. Even though its stereo quieting figures always are about 8 dB poorer than the corresponding mono figures, the stereo curve for this tuner indicates that you will be able to receive at least acceptable stereo (noise and distortion 40 dB or more below 100% modulation) at signal values from 10 microvolts upward. Such reproduction can roughly be compared to stereo from pre-Dolby cassettes and other slow-speed tapes of a few years ago—not great but perhaps good enough to be enjoyed if you’re not after the ultimate in high fidelity sound.

Contrast this with the less attractive curves in this group. The threshold circuitry of these models may not allow the tuner to switch to the stereo mode until input signal is much stronger—even as high as 30 microvolts or more. And the tuner may barely reach a quieting figure of 40 dB in stereo. (Once again, however, sensitivity curves tell only part of the story in tuner performance, and it would be a mistake to reject any model on this basis alone.)

Some Positive Approaches

Now, what can be done to fill that 23-dB gap between mono and stereo performance? Try separately or together:

1. Changing the location of the receiving antenna. Increasing its height is especially helpful. Other things being equal, at moderate distances from a transmitter, doubling the receiving-antenna height roughly doubles the signal voltage delivered to your tuner. In addition, raising the antenna often increases its distance from noise-causing RF sources, like the ignition systems of passing cars. If you are in the “shadow” of a hill, there may not be much you can do unless you can put your antenna on the hill. FM, like television (which is in the same general part of the electromagnetic spectrum), is basically a line-of-sight propagation medium. You get the best results when the receiving antenna can “see” the transmitting antenna.

2. Using a more directional antenna. A VHF antenna with several elements is usually designed to capture signals more effectively from one direction than from others. Besides intercepting more of the desired signal, a directional antenna can greatly reduce interference, both co-channel (from a station on the same frequency as the desired one or from multipath reception) and adjacent-channel (from a signal on the channel next to the desired one). Used with a tuner that has a good capture ratio and good alternate channel selectivity, a directional antenna can produce excellent reception where it seemed impossible before. But unless all the signals you want to receive are within a fairly
For the First Time in FM Testing:
Stereo Sensitivity Curves

As the accompanying article points out, high fidelity FM components are invariably stereo; yet no standard for the measurement of stereo sensitivity and quieting characteristics has existed for FM tuners and receivers, and with very few exceptions these parameters have consequently gone unspecified. That lack is being remedied in all our tests of FM equipment beginning with this issue's test report section, which will include the stereo sensitivity or threshold figures together with the stereo quieting curve.

The stereo testing method represents a logical extension of our mono measurements, which are based on IHF standards. The FM carrier frequency is modulated with a 400-Hz tone, and the tuner's resultant audio output is measured for quieting (i.e., its freedom from noise and distortion, in dB) at various carrier input levels (in microvolts). Plotting these points with the carrier frequency set near the middle of the FM band (at 98 MHz) provides the quieting curve. Sensitivity is defined as the input level for which the output is minimally (30 dB) above the level of noise and distortion. This point is measured not only at 98 MHz, but at the extremes of the FM band as well: 90 and 106 MHz.

So far, the method described is equally appropriate whether mono or stereo measurements are being made; the only difference between them is the adding of a multiplex subcarrier to the stereo input. But as RF input is reduced the automatic mono/stereo switching in many tuners and receivers reverts to mono output, even with stereo broadcasts, before quieting has reached 30 dB, preventing stereo sensitivity measurements. When this happens we show the minimum input (in microvolts) for which the tuner circuit will produce a stereo output, and the quieting (in dB) that it achieves for that stereo threshold value. This, too, is tested at all three carrier frequencies.

Almost a year ago, before beginning the present stereo testing program, we asked CBS Laboratories to check these areas of performance on all FM equipment we sent them for test-report documentation. Neither the lab nor our editors knew precisely what they would find, of course. While theoretically a fairly consistent relationship might show up between the stereo curves and their mono counterparts, we all doubted that this would be so. And the accompanying illustrations, which are derived from that pilot testing program, prove that our doubts were well founded.

For the pilot tests, the lab did not use quite the method outlined above. The main difference between that stereo test setup and the regular mono method was in the frequency at which the FM carrier was modulated: 1 kHz, rather than 400 Hz. As a result, the mono and stereo curves shown here may not be technically comparable (though the indicated sensitivity and/or threshold ratings should be). This difference in testing method may, for example, explain why some stereo curves are slightly better than their mono counterparts at some input levels. What the curves do show unequivocally is that there is no reliable correlation whatever between mono and stereo performance in FM equipment, and that therefore mono measurements are no guide in this respect when you are buying for stereo listening.

Our new testing procedure is, we believe, both sane and informative. While any magazine likes to feel that it has an "exclusive," we hope that ours does not remain so for long. We would rather see stereo measurements of FM quieting and sensitivity replace mono across the board as a description of reference for component performance.
SENSITIVITY AND QUIETING:
Mono and Stereo Compared

The graphs shown here were derived from tests made with stereo tuners and receivers submitted for test reports over several months, as described on the previous page. The dotted line in each graph represents the mono curve published in our original test report. The heavy, continuous curve is published here for the first time and represents stereo performance. Comparable curves, made by a method more precisely matched to the IHF mono sensitivity test specifications, appear in five of the test reports elsewhere in this issue.
narrow arc—that is, in nearly the same direction from your location—you will need a rotator with a directional antenna.

3. Getting a better FM tuner. By better, I mean one with greater stereo sensitivity for one thing. But again, don’t ignore other factors. Unless the tuner has good alternate-channel selectivity and capture ratio, its apparently excellent sensitivity rating may be meaningless.

A booster probably won’t help much unless your tuner’s deficiencies are primarily in sensitivity and the booster is a very good, up-to-date one—preferably of the type that mounts at the antenna and feeds an amplified signal down the line. It is not a booster’s brute gain (how much it amplifies) that matters in this application, but whether or not its own signal-to-noise ratio is better than that of the tuner’s front end. If not, the booster will bring little or no improvement.

The Other Specs

So far, in order to make certain points clear, we have dwelt inordinately on sensitivity. Actually it is relatively unimportant in urban or suburban locations, where typical signal strengths are between 1,000 microvolts and several volts (enough to light a flashlight bulb). A glance at the accompanying curves will show that almost every tuner has achieved its maximum possible value of quieting by the time the RF input reaches 100 microvolts. Clearly, sufficient signal strength is not the problem for most listeners. In fact, some tuners show a degradation in quieting as the RF signal strength rises to very high values. The reasons for this differ with the design. It is the tuner’s distortion that rises, not its noise level.

It would be illuminating to know something about the tuner’s cross-modulation rejection—especially if the stereo sensitivity curve indicates that something peculiar (like a rise in distortion) happens at high RF levels—in situations in which the tuner will encounter high signal levels. Difficulties of this sort suggest that the manufacturer has not been sufficiently concerned with high RF levels. Cross-modulation results from excessive signal levels at the front end of the tuner and generally causes one or more stations to appear at several spots on the tuning dial, often right on top of or right next to a weaker station.

If you have this problem with your present tuner, you may be able to reduce it by using a less effective antenna or by reducing antenna height, but only at the sacrifice of the weaker stations, which you then may not be able to hear at all.

Thanks to the field-effect transistor, this is much less of a problem than it was in the early days of transistor tuners. A good tuner today should handle an input signal range of 80 dB, or 10,000 to 1. In other words, its spec for cross-modulation re-
jection figure should be 80 dB. A figure of 70 dB is acceptable, but the higher the better. This may well be a most important specification for city dwellers.

If you expect to use a relatively sensitive tuner in a suburban location with a good outdoor antenna, its selectivity (its ability to reject interfering stations on channels near the one you want) is almost equally important. *Adjacent-channel selectivity* figures express the degree to which the tuner suppresses the signal from the channels next to the one you want. (For example, the channels adjacent to 99.5 MHz are 99.3 and 99.7 MHz. FM channels are spaced 200 kHz—0.2 MHz—apart and always end in an odd number.) Alternate-channel selectivity refers to discrimination against the next adjacent channel—99.1 and 99.9 MHz in this example.

The FCC never allocates local stations closer than four channels (800 kHz) apart—for instance, 96.3 and 97.1 MHz. But any decent tuner with a modest antenna will be sensitive enough to get stations from other nearby locations that have been allocated frequencies in between: say, 96.7 MHz. It would be nice if the tuner could separate those three stations cleanly, without audible interference. That's where alternate-channel selectivity comes in. While figures of 40 dB once were considered respectable, today's quality equipment will do better than 60 dB, the higher the figure, the better.

Adjacent-channel selectivity is a delicate matter. It is extremely difficult—some say impossible—to design IF filters that will pass all the required sidebands for good stereo performance on the desired channel (which may require a bandpass of about 250 kHz) and still discriminate adequately against the sidebands of the adjacent channels' signals. Still, some of the best tuners on the market are able under certain conditions to extract a usable signal from each of several FM channels only 200 kHz apart.

Another vital specification is *capture ratio*. The capture effect is unique to FM—nothing like it exists for AM—and means that a signal only slightly stronger than another signal on the same frequency will "capture" the detector of an FM tuner and effectively block the weaker signal. The ratio of the strengths of the stronger (wanted) signal and the weaker (unwanted) signal is called the capture ratio. In the best tuners it may be as little as 1 dB; the smaller the better, but 2 to 3 dB is an excellent figure. A good capture ratio usually works with good selectivity to make possible the adjacent-channel legerdemain described in the previous paragraph.

A good capture ratio also has a profound effect on a tuner's ability to cope with multipath interference. Multipath reception occurs when the receiving antenna picks up the desired station via two or more paths of different lengths. One path may be a direct, line-of-sight path, others may be reflections from hills, aircraft, or tall structures, or all the signals may be reflected. Because of the different (and sometimes changing) path lengths, they arrive at different times, causing erratic cancellation and reinforcement of certain sidebands in the FM signal. Any alteration in sidebands creates distortion and, in case of stereo, confusion between channels. A tuner with a good capture ratio, aided if necessary by a properly aimed directional antenna, can often latch onto the strongest signal, be it original or reflected, and suppress the others into inaudibility.

Capture ratio is intimately related to the bandwidth of the tuner's detector and to the limiter quality—its *AM rejection*, or how well the tuner suppresses any changes in the intensity (amplitude) of the signal. Because instantaneous frequency deviations of the transmitted signal carry the desired information in FM, the receiver can and should, be completely insensitive to any changes in carrier amplitude or intensity. Any amplitude modulation (AM) of the carrier represents interference or noise of some kind—most likely pulse noise from electric motors, ignition systems, etc., or another FM station "beating" with the desired one. The better the tuner's ability to reject AM, the more useful it will be, especially in areas of relatively high electrical noise, such as cities. AM suppression should be 40 to 50 dB or more (the higher the number, the better).

**In Search of Sanity**

Once you start digging into the theory of FM transmission, reception, and tuner design, you almost inevitably conclude that real improvement in one aspect of a tuner's performance cannot occur without corresponding improvements in most of its other significant aspects. Now and then a new model draws attention with a spectacular improvement in one characteristic (too often sensitivity). If the engineering effort and the advertising behind the tuner are sincere, there should be similar improvements in most of the other important characteristics.

If the sensitivity figure, say, seems disproportionately good compared to other features—considering also the price of the unit—suspect "tweaking." Tweaking is a test-bench procedure closely related to fudging and finagling. If the hottest sensitivity is what you are after, you can get it, but only by diluting virtually every other property of a good tuner: good capture ratio, low stereo distortion, good separation. They all interlock. Hence the need for across-the-board upgrading if the improvement is to have real meaning for the user.

Most of the gains made in FM tuner design over the last few years have been real, thanks to many factors in circuit design. But the temptation to tweaking remains; and as long as mono FM sensitivity continues to be the most talked-about specification in tuner performance, it also will remain the one most likely to be tweaked—usually at the expense of stereo performance.
Fisher 504: Top Value in Stereo/Quadraphonic Receiver


Comment: The Fisher 504 is so loaded with features and so competent in its performance that we can confidently say it represents the best value we've yet encountered in a quadraphonic receiver. Let's begin with the front panel. Across the top are mode indicator lights (two-channel, SQ, four-channel), FM center-tuning and FM/AM signal-strength meters, tuning dial, input-selector indicator lights, tuning knob, and finally a special audio display that indicates relative signal strengths in the four channels by means of four pilot lights. Across the bottom are the AC power switch, front and back headphone jacks, five tone-control sliders (front bass, front treble, midrange, back bass, back treble), and at the center of the panel, a quadraphonic "joystick" balance control flanked by eight switches: reduced volume (which cuts output by about 20 dB), FM muting, SQ decoder, AM DNL (dynamic noise limiter—an unusual and welcome feature comparable in its effect to a combination of muting and noise filtering in FM), high filter, low filter, and loudness. Continuing across the bottom panel we have a seven-position output selector, five-position mode/monitor selector, five-position input selector, master volume slider, on/off switch for the audio display, and phone jacks for connecting the input and output of an outboard tape deck.

The total complement of back-panel preamp connections includes magnetic phono, two aux inputs (both quadraphonic), and quadraphonic tape record/playback—plus a set of quadraphonic input connections, marked "accessory" with devices like room equalizers in mind, that can be used as a second set of tape monitor connections. There is plenty of provision, therefore, for the use of outboard Q-8 tape or Quadradisc equipment—say nothing of stereo program sources—while the built-in decoder will take care of matrixed discs or simulated quadrophonics from stereo sources. Spring clips are provided for two quadraphonic sets of speakers—a total of sixteen clips for eight speakers.

When the unit is switched from quadrophonics to the stereo mode, an odd thing happens. Into 8-ohm loads the total rated power increases from 128 watts (32 x 4) to 180 watts (90 x 2); into 4-ohm loads it drops from 160 watts (40 x 4) to 100 watts (50 x 2). This behavior is easier to describe than to explain and is a concomitant of the unusual 4/2-channel switching configuration plus the amplifier's feedback circuits. The result is that the numbers involved are unusually confusing to the uninitiated. Suffice it to say that for quadraphonic use, the 504 delivers plenty of power for each of the four loudspeakers—including extremely inefficient ones—of conventional design in any normal room, and even enough power for two sets (eight loudspeakers) in many situations.

And being conservatively rated by Fisher (as the lab data show), it is also an unusually clean amplifier at
Fisher 504 Receiver Additional Data

<table>
<thead>
<tr>
<th>Section</th>
<th>Mono</th>
<th>L ch</th>
<th>R ch</th>
</tr>
</thead>
<tbody>
<tr>
<td>ThD 80 Hz</td>
<td>0.08%</td>
<td>0.14%</td>
<td>0.20%</td>
</tr>
<tr>
<td>THD 1 kHz</td>
<td>0.73%</td>
<td>0.19%</td>
<td>0.20%</td>
</tr>
<tr>
<td>IM distortion</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.5%</td>
</tr>
<tr>
<td>19-kHz pilot</td>
<td>-37 dB</td>
<td>-37 dB</td>
<td>-37 dB</td>
</tr>
<tr>
<td>38-kHz subcarrier</td>
<td>-59 dB</td>
<td>-59 dB</td>
<td>-59 dB</td>
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<tr>
<td>Channel separation</td>
<td>&gt; 40 dB</td>
<td>&gt; 40 dB</td>
<td>&gt; 40 dB</td>
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</table>

**Amplifier Section**

- Damping factor: 30
- Input characteristics (for 90 watts output)
  - phono: 2.2 mV, S/N ratio 58 dB
  - aux 1: 210 mV, 65 dB
  - aux 2: 240 mV, 66 dB
  - tape monitor: 240 mV, 66 dB
  - accessory: 240 mV, 66 dB
  - RIAA equalization accuracy: +0.5 dB, 20 Hz to 20 kHz

If we have any quibble with this section of the 504 it is that distortion does tend to creep up a bit—but only a bit—at low output (below 1 watt). This is a small price to pay for what is, overall, the best amplifier performance we’ve yet encountered in a quadraphonic receiver.

The tuner also is exceptionally fine. The stereo quieting curve is so good that it resembles the mono curve in many an inexpensive receiver; the 504’s mono curve is superb. The ultimate quieting in both (better than 50 dB in stereo, 60 dB in mono) suggests the finest of separate tuners. Don’t be unduly alarmed at the 1.2% distortion figure at 10 kHz in stereo reception; as we’ve pointed out before, the harmonic products of 10 kHz are above audibility, so this figure represents more electrical than audible performance.

A price of $500 is not peanuts, but we have yet to examine in detail any quadraphonic receiver—at any price—that offers more, overall, to the music listener.
A Powerful Receiver from Scott


Comment: The 477 is an unusual receiver in many ways, some of which are suggested immediately by a rundown of its control and connection options. The dial area at the top of the front panel is fairly straightforward: AM/FM signal-strength meter; FM center-tuning meter; the dial itself with lighting pointer, selector indicators, and stereo indicator; tuning knob. The input selector has positions for mike/phono 1, phono 2, FM, AM, and "extra"—what most manufacturers label "aux." Next are stereo phone jacks that parallel the tape input and output connections on the back panel, then miniature phone jacks for left and right mike inputs. The balance, ganged bass, ganged treble, and volume knobs are followed by a series of pushbutton switches: loudness compensation, tape monitor, mode (mono/stereo), high filter, FM muting, and loudspeakers (1, 2, 3, 1 & 2, 1 & 3). Finally there are the main power switch and the headphone jack, which is live at all times.

On the back panel are several groups of phono jacks. The group for the "extra" inputs also includes an output from the FM detector section for use in adding an outboard four-channel decoder if and when a discrete or quasi-discrete broadcast method is approved by the FCC. Other groups of phono jacks handle tape input.
and output, "accessory," and phono 1 and 2. The accessory connections actually are preamp output and power-amp input jacks and are connected by jumpers (supplied) in normal use. Their most obvious function is in adding room equalizers, quadraphonic add-on units, and similar equipment. Scott provides instructions for adapting them as a second tape-recorder connection, in conjunction with the "extra" input. There are two switches close to the phono inputs. One adjusts preamp sensitivity (high/low) to the output of the cartridge in use; the other converts phono 1 for use (via the front-panel jacks) as a mike preamp. The main speaker connections are of the usual spring-clip type; those for the second and third speaker pair are phono jacks. There are screw connections for AM antenna and 300-ohm FM antenna, a socket for 75-ohm FM antenna, and a thumbscrew connection for grounding associated equipment—a turntable, for example. There also are switched and unswitched convenience AC outlets (one of each), pop-out output fuses, and a circuit breaker that protects the entire unit. If you have any trouble with the unit—or the system to which it is connected—you'll find these last two items particularly handy in design. Your service technician may find a special bias test socket on the back panel helpful as well. We note that Scott includes an order form for the 477 service manual ($1.00) with the unit. This seems like an excellent idea; even if you don't plan to do your own servicing, the manual can make the difference between a successful repair and a fiasco at your local repair service.

Not that we foresee any special need for repairs on the 477. Its various functions performed well in our home tests. And in the lab it demonstrated the excellence of its design. Harmonic distortion proved to be well under spec (0.5%) in all the amplifier tests, for example; only three readings were above 0.2%. The FM section likewise turned in excellent figures, of which those for mono quieting (better than 62 dB over much of the operating range) were perhaps the most spectacular. All told this is the most impressive Scott receiver we've tested in some years, and it's a solid design job on any terms.

CIRCLE 144 ON READER-SERVICE CARD

The World's Most De Luxe FM Tuner Kit


Comment: This Heath tuner is just plain fun. No wonder that three of the eight audio experts we asked to select their Christmas present for last month's issue originally selected it. In talking about the AJ-1510, Heath uses the phrase "computer tuner"—a phrase that turns out to be far more than just advertisingese for "new." All the visible controls on the front panel are pushbuttons: the ten digits for punching up the station frequency plus a reset button for clearing the frequency "memory"; an auto-sweep button plus a bypass button to reactivate the sweep mode once the tuner has locked in onto a station; and a stereo-only button, three buttons for choosing card-programmed stations, a muting (Heath, in communications style, calls it squelch) defeat button, and the power-switch button. Above these buttons is a backlight dial through which the tuned frequency appears on digital-readout tubes, together with the signal-strength/multipath meter. (There is no center-tuning meter since the phase-lock circuitry prevents mistuning.) There also are various indicators that appear, depending on operation—even one that announces improper programming or malfunction.

But that's not all. Hidden behind a cleverly designed pop-out panel at the bottom are card slots for station
preprogramming and controls for things like automatic gain, muting sensitivity, mode (mono, stereo, high-blend), and meter action. While one position of this last switch is intended for the detection of multipath conditions, the tuner’s back panel has oscilloscope outputs as an optional aid in antenna orientation. It also contains the regular audio output jacks, screw terminals for 300-ohm or 75-ohm antenna leads, and an unswitched AC outlet.

Internal construction relies heavily on plug-in circuit boards and preassembled wiring harnesses, simplifying construction, checkout, and servicing. Like several other Heath products we have reviewed recently, the AJ-1510 includes built-in test leads and switches that convert the signal-strength meter for use in checkout, so that no external meter is needed even for alignment. But there remains a great deal to be done in building such a complex unit; our kitbuilder required some 40 hours. Most of the job is pretty straightforward, however, and few difficulties were encountered. The logic circuit did not work at first, due partly to a defective IC (many ICs are used in the unit) and partly to having missed a solder connection; but Heath’s service department was as usual co-operative.

Actual performance data proved less spectacular than the unique computer logic system. Maximum quieting, for instance, was only 46.5 dB in mono; distortion figures were no better than average at, for example, about 25% in the midrange for mono operation; S/N is not much better than average.

But the lab measurements did turn up some exceptionally fine numbers. Alternate-channel selectivity (better than 100 dB) is the best yet measured. The tuner’s ability to reject pilot and subcarrier tones (66 and 68.5 dB respectively) also is exceptional. But the star of the show remains the logic—the most comprehensive collection of tuning modes and aids we have yet worked with. One example should demonstrate what we mean. Metropolitan Opera broadcasts are available locally on at least four stations with reasonably good signals; but reception conditions, station engineering practice, and the vagaries of land-line transmission to the stations all produce differences in signal quality that may change from Saturday to Saturday or even hour to hour. Of all the tuners we have tested, only the AJ-1510’s triple punched-card slots make it possible to compare stations instantaneously with unequivocally perfect tuning. This ability is a joy to the listener and, now that we’ve experienced it, virtually a necessity to the recordist.

CIRCLE 150 ON READER-SERVICE CARD
JVC Receiver: Moderate Cost, Special Features


Comment: JVC has included its SEA (Sound-Effect Amplifier) multiband tone-control system in a variety of equipment—most of it fairly elaborate and relatively expensive. The Model 5541 combines a five-band version of the SEA with a moderately priced receiver that is at once simple and versatile, making the special advantages of SEA available in a particularly attractive form—and one that in our opinion should be of special interest to the tape hobbyist who can't afford a lavish system. But more of that in a moment.

The 5541 has two meters (signal strength and center tuning) beside its tuning dial. Across the bottom are a power switch, headphone jack (live at all times), speaker selector, a group of tape-recording controls, and knobs for balance, volume, and input selection. At the right and is the SEA section: five sliders calibrated for up to 12 dB of boost or cut in frequency bands centered at nominal frequencies of 40 Hz, 250 Hz, 1 kHz, 5 kHz, and 10 kHz respectively. The sliders are continuous-acting, but have click detents every 2 dB along the scale. Below the SEA are pushbuttons for FM muting, loudness, mono mode, low filter, high filter, and SEA defeat.

On the back panel are the usual input connectors for phono cartridge, two aux sources, two tape recorders (including recording outputs), and preamp-out/main-in connections—normally bridged by the supplied jumpers—for use with outboard equalizers or similar units. A similar jack is provided for feeding the FM detector output to a quadraphonic adapter, should one become available. The spring-clip connections for three stereo pairs of speakers are unusually handy in their arrangement. There are screwdriver terminals for AM and FM (300-ohm) antenna leads, a spring-loaded grounding connector, and two AC convenience outlets—one switched, one unswitched. And there is a screwdriver adjustment for the FM muting threshold.

That's a lot of features for a unit in this price class, but it's not all. We said that this unit might be of particular interest to tape recordists. Not only does it have connections for two recorders, it also has phone jacks on the tape section of the front panel which can be used alternatively with the tape 2 jacks at the back. This tape panel also contains the two monitor switches. But most important of all, it includes a third switch by means of which the feed to the tape recorders can be taken off the amplifier's output (through an appropriate loss pad of course) and therefore after the SEA circuit. The SEA circuit thus can be used not only as a sort of simplified room equalizer (or complex set of tone controls, depending on your point of view), but as a program equalizer as well. You can copy old records, poorly equalized tapes, or any similarly substandard source and retain the SEA improvement permanently in your tape copies.

That improvement can be considerable. While there

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**FREQUENCY RESPONSE**

<table>
<thead>
<tr>
<th>FREQUENCY IN HZ</th>
<th>RESPONSE IN DB</th>
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</thead>
<tbody>
<tr>
<td>10</td>
<td>-5</td>
</tr>
<tr>
<td>20</td>
<td>+5</td>
</tr>
<tr>
<td>1 K</td>
<td>0</td>
</tr>
<tr>
<td>10 K</td>
<td>-1</td>
</tr>
<tr>
<td>20 K</td>
<td>-3</td>
</tr>
<tr>
<td>100 K</td>
<td>-5</td>
</tr>
</tbody>
</table>

**POWER OUTPUT DATA**

<table>
<thead>
<tr>
<th>CHANNELS SIMULTANEOUSLY</th>
<th>LEFT AT CLIPPING: 36.1 WATTS FOR 0.2% THD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEFT AT CLIPPING: 36.1 WATTS FOR 0.1% THD</td>
<td></td>
</tr>
<tr>
<td>RIGHT AT 0.5% THD: 63.7 WATTS</td>
<td></td>
</tr>
<tr>
<td>RIGHT AT 0.5% THD: 63.7 WATTS</td>
<td></td>
</tr>
</tbody>
</table>

**POWER BANDWIDTH**

(for 0.5% THD, 0 dB = 34 watts)

- Below 10 Hz to 33 kHz
  - Power: 0 dB = 34 watts

**FREQUENCY RESPONSE**

<table>
<thead>
<tr>
<th>FREQUENCY IN HZ</th>
<th>RESPONSE IN DB</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>-5</td>
</tr>
<tr>
<td>20</td>
<td>+5</td>
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<tr>
<td>1 K</td>
<td>0</td>
</tr>
<tr>
<td>10 K</td>
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<tr>
<td>20 K</td>
<td>-3</td>
</tr>
<tr>
<td>100 K</td>
<td>-5</td>
</tr>
</tbody>
</table>

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are some special narrow-band effects (60-Hz or 120-Hz hum, the "high-Q" resonance of some early electrical disc cutters, and so on) that the SEA cannot ameliorate without affecting a relatively wide portion of the audible spectrum, we were very impressed by what it will do in this respect. (JVC has a very similar receiver model that gives the recordist even more; the VR-5551, for an additional $60, has a little more power plus left and right mike inputs with their own master level control.)

At 34 watts per channel the 5541's amplifier section has more than enough oomph for any conventional speaker pair in normal rooms; but if you plan to use more than one pair, models of relatively high efficiency probably would be desirable. (The speaker switching prevents simultaneous use of the outputs for all three speaker pairs.) Harmonic distortion is well under JVC's 0.5% spec and, in fact, stays below 0.1% over much of the unit's operating range. The FM section is particularly good in terms of capture ratio (better than 1 dB) and frequency response; in other respects it is about par for an inexpensive unit—and considering its special features we'd consider the 5541 to be notably inexpensive. To put it another way, we've encountered few receivers that offer so much fun per dollar—particularly to the recordist.

CIRCLE 145 ON READER-SERVICE CARD
A "Real" Receiver from Magnavox


Comment: Whenever a mass-market/console company announces "true component audio products," we tend to be skeptical. Magnavox has done so repeatedly in recent years, but until now the products involved were more gussied-up compacts than true components. The present line—to judge by the 8896, the top receiver model but one—is notably different. The 8896 can, indeed, be called a true component audio product.

Most of the control panel is fairly conventional, but with a few unusual features that reflect the peculiarities of the 8896. The AM dial is above the FM dial, and the AM section is distinctly more successful than the FM section, which lab tests show to be no better than so-so. Using only the built-in AM antenna, and FM via our local cable, stations crowd in on both. This is a joy where AM stations are concerned, since some receivers pick up only local stations without an external antenna, but a nuisance on FM since the dial is marked only in even megahertz. (There are no calibrations between 100 and 102, for example.) The single meter happily shows center tuning for both FM and for AM stations. Though there are two sets of speaker taps on the back panel and a headphone jack on the front, Magnavox has made no provision for speaker switching; whatever is connected for both FM and for AM stations. Though there are two

Right at clipping: 55.7 watts for 0.20% THD
Left at clipping: 62.1 watts for 0.24% THD

CHANNELS SIMULTANEOUSLY
Left at clipping: 55.7 watts for 0.24% THD
Right at clipping: 55.7 watts for 0.38% THD

POWER BANDWIDTH
(For 0.5% THD, 0 dB = 50 watts)

RF INPUT IN MICROVOLTS

FREQUENCY RESPONSE
(for 1 watt output)

CIRCLE 142 ON READER-SERVICE CARD

High Fidelity Magazine
Decca's Unconventional New Pickup

The Equipment: London/Decca Mk 5, a stereo phono pickup with spherical stylus. Price: about $100; "Export" (de luxe) version, about $125. Manufactured by Decca Special Products, England. U.S. distributors: Paoli High Fidelity Consultants, Inc., P.O. Box 867, Paoli, Pa. 19301 (East); Audiophile Imports, 8 E. Erie St., Chicago, Ill. 60611 (Midwest); ESS, Inc., 9613 Oates Dr., Sacramento, Calif. 95827 (West).

Comment: The latest in the prestige Decca series of pickups, the new Mk 5 employs an unusual internal structure based on the use of new magnetic materials Decca claims makes possible a more direct translation of stylus motion into output signal—what the company calls "positive scanning." In addition, the new design is credited with less hum, lower mass, reduced stray magnetic field, and higher signal output.

In careful listening over wide-range speakers and with a variety of program material, these claims translate to very wide-range, clean sound with a full dynamic range and excellent clarity in both the stereo image and the internal musical detail. There is a sense of utterly

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Magnavox 8896 Receiver Additional Data

<table>
<thead>
<tr>
<th>Frequency in Hz</th>
<th>Mono</th>
<th>L ch</th>
<th>R ch</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 Hz</td>
<td>1.0%</td>
<td>0.96%</td>
<td>0.98%</td>
</tr>
<tr>
<td>1 kHz</td>
<td>0.80%</td>
<td>0.59%</td>
<td>0.52%</td>
</tr>
<tr>
<td>10 kHz</td>
<td>2.7%</td>
<td>2.0%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

IM distortion < 1.0%

19-kHz pilot -45 dB

38-kHz subcarrier -60 dB

Frequency response
- mono +2, -3 dB, 20 Hz to 15 kHz
- L ch +2.25, -3 dB, 20 Hz to 15 kHz
- R ch +2, -3 dB, 20 Hz to 15 kHz

Stereo separation > 30 dB, 40 Hz to 7.3 kHz
- 20 dB, 20 Hz to 12.5 kHz

Amplifier Section
- Damping factor 80

Input characteristics (for 50 watts output)
- magnetic phono 2.2 mV
- ceramic phono 100 mV
- aux 158 mV
- tape monitor 450 mV

S/N ratio
- Mono 71 dB
- Stereo 54 dB

RIAA equalization accuracy
- +0, -3 dB, 23 Hz to 20 kHz
Square-wave response

FREQUENCY RESPONSE

Left channel: +3, -1 dB, 20 Hz to 20 kHz
Right channel: +3, -1 dB, 20 Hz to 20 kHz

CHANNEL SEPARATION

Left channel: >15 dB, 48 Hz to 16 kHz
Right channel: >15 dB, 29 Hz to 16 kHz

FREQUENCY IN HZ

Hair-trigger transient response that makes for realistic reproduction, especially of program material that has strong percussives.

These audible virtues are the more impressive when you look at the published specifications and lab test data. The same spec sheet was delivered with both versions of the Mk 5. CBS Labs ran complete data on the "Export" model and checked critical items with the standard model, which proved to be very similar. By today's widely accepted standards, some of the "numbers" do not seem very auspicious. Distortion figures are about par for the better pickups. Output (for 1 kHz at 5 cm/sec) measures 4.9 mV in the left channel, 5.5 in the right. Decca specifies a compliance of only 12 (x 10^-1) laterally and 5 vertically, though CBS Labs measured it at 30 and 5 respectively. And the vertical tracking force recommended is 2 to 3 grams. It went through the lab's torture test at 2.4 grams and we subsequently used it at 2.5 to 3 grams. The compliance and tracking-force figures, particularly, remind us of the first stereo pickups of some twelve years ago.

Decca is aware of this apparent anomaly and has issued a lengthy technical explanation of why they believe their design philosophy to be correct despite what most other pickup manufacturers are doing. While the explanation is beyond the scope of this report, it states flatly that ultra-high compliance is, in itself, no guide to pickup performance, and that ultra-low tracking forces will not necessarily result in either better sound or less record wear. Further, Decca favors the spherical stylus over the elliptical. Tip radius is specified at 0.6 to 0.7 mils; the lab found it to be slightly smaller, and of good geometry.

As a consequence of its unconventional internal design, the Mk 5 has only three connecting pins. (A single ground serves both channels.) This requires you to tie together the two ground leads in the arm's shell. Be careful when doing so; these leads and their clips are fragile. Decca supplies extra clips in case of misadventure, but they are a trifle loose and need some tightening with a long-nose pliers. In our judgment, the chore involved is well worth the effort. The Mk 5 merits serious audition by anyone interested in discovering how great records really can sound.

Kenwood's Dolby Cassette Deck


Comment: The format has become familiar—a Dolby cassette deck for under $300. Kenwood's is unusual both in being well under $300 and in including more than minimal features (as well as good performance). Among the features are three recording-equalization options (for "regular," low-noise ferric oxide, and chromium dioxide tapes respectively), automatic stop and drive disengagement at the end of the cassette, playback level controls, and sturdy transport controls with a nicely thought-out interlock system. (You can go directly from "play" to fast wind, for example, but must go by way of "stop" in switching back to "play," avoiding damage to the tape.) Though we wouldn't describe the unit as luxurious, it strikes us as well built and nicely detailed for its price class. For instance, the meters are fully calibrated and even include a special Dolby-level marking.

The special meter design has given Kenwood an option denied to manufacturers who arbitrarily equate
Kenwood KX-700 Cassette Deck Additional Data

<table>
<thead>
<tr>
<th>Speed accuracy</th>
<th>105 VAC: 1.0% fast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120 VAC: 1.0% fast</td>
</tr>
<tr>
<td></td>
<td>127 VAC: 1.0% fast</td>
</tr>
<tr>
<td>Wow and flutter</td>
<td>playback: 0.10%</td>
</tr>
<tr>
<td></td>
<td>record/playback: 0.15%</td>
</tr>
<tr>
<td>Rewind time, C-60</td>
<td>min. 6 sec.</td>
</tr>
<tr>
<td>Fast-forward time,</td>
<td>same cassette 1 min. 6 sec.</td>
</tr>
<tr>
<td>S/N ratio (ref. DIN 0 VU, Dolby off):</td>
<td></td>
</tr>
<tr>
<td>playback</td>
<td>L ch: 54 dB  R ch: 56 dB</td>
</tr>
<tr>
<td>record/playback</td>
<td>L ch: 48 dB  R ch: 48 dB</td>
</tr>
<tr>
<td>Erasure (333 Hz at normal level)</td>
<td>56 dB</td>
</tr>
<tr>
<td>Crosstalk (at 333 Hz)</td>
<td>40 dB</td>
</tr>
<tr>
<td>Sensitivity (for 0-VU recording level):</td>
<td></td>
</tr>
<tr>
<td>line input</td>
<td>L ch: 80 mV  R ch: 80 mV</td>
</tr>
<tr>
<td>mike input</td>
<td>L ch: 0.27 mV  R ch: 0.27 mV</td>
</tr>
<tr>
<td>Meter action</td>
<td>ref. DIN 0 VU  L ch: 2 dB  high  R ch: 2 dB  high</td>
</tr>
<tr>
<td></td>
<td>ref. Dolby level L ch: 1 dB  high  R ch: 1 dB  high</td>
</tr>
<tr>
<td>THD (record/play, -10 VU)</td>
<td>L ch: &lt; 1.7%, 50 Hz to 5 kHz</td>
</tr>
<tr>
<td></td>
<td>R ch: &lt; 1.5%, 50 Hz to 5 kHz</td>
</tr>
<tr>
<td>IM distortion (record/play, -10 VU)</td>
<td>L ch: 7.3%  R ch: 7.0%</td>
</tr>
<tr>
<td>Maximum output (ref. DIN 0 VU)</td>
<td>L ch: 3.1 V  R ch: 3.4 V</td>
</tr>
</tbody>
</table>

Dolby reference level (a fixed value, specified by Dolby Labs) with the 0 VU indication (a value subject to considerable variation, as the meter-action figures in our reports document). Kenwood has chosen a fairly high recording level, the 0 VU as indicated by the meters is only 2 dB below the DIN standard. The reduced high-frequency headroom resulting from this choice might have caused problems in capturing high-amplitude, high-frequency sounds but for Kenwood's treatment of another option: the equalization for chromium dioxide. Kenwood's choice here has been to offer identical playback equalization for all tape types, thereby increasing headroom and frequency response (rather than signal-to-noise ratios) with chromium dioxide by contrast to those models in which playback equalization is altered as well. In sum, low-noise ferric oxide tape (like TDK's SD, with which most of the lab measurements were made) will perform well on the KX-700 with most program material, for best results with demanding program material, chromium dioxide is in order.

A part of the difference is visible in the frequency-response graphs. The record/playback curves for low-noise ferric oxide do not extend very far at the top end. (Lowering the 0-VU point presumably would have extended them a bit; similarly, the relatively low levels of most high-frequency signals can be relied on to increase effective top-end response.) The chromium dioxide curves are "flat" out to about 15 kHz—an excellent mark. Whether you will hear the difference is questionable and will depend on the program; often both types of tape sounded good enough to be indistinguishable from the original source material.

In other respects the KX-700 resembles most cassette decks. Jacks for mikes and stereo headphones are at the bottom of the front panel; phono-jack pairs, plus a DIN socket, handle input and output connections on the back panel; the main controls can be understood at a glance. Speed accuracy is, at 1 1/2% fast, acceptable and—presumably thanks to the hysteresis motor—unaffected by changes in line voltage. Insertion of a plug into a mike jack automatically disconnects the line input for that channel. If you wish to mix live sounds with existing recordings, you will need an outboard mixer of some sort. There is a three-digit tape counter and a connection for grounding the unit to your receiver or control amplifier should you encounter any hum problem. (We didn't.)

Taking all things together, the KX-700 is an attractive unit: a good value, easy to use, and well calculated to please those who want good sound with a minimum of fuss.

Fisher ST-550 loudspeaker system
B & O 3000-2 stereo receiver
Lenco L-85 turntable
Sony's Automatic
Single-Play Turntable


Comment: If you are like many owners of record changers who use them almost exclusively as single-play turntables, why did you buy a changer? Perhaps you like the automatic arm setdown and liftoff and want, in any event, a preinstalled arm. The 5520 seeks the best of both worlds and further shows evidence of optimizing various critical performance and design features so that the resultant product is something more than just a record changer minus the changing mechanism.

It is stylish and well engineered. A pair of lever switches at the front left select speed (33 or 45 rpm), while a multipurpose circular control at the right selects the operational mode. One lever on this control chooses between manual and automatic start: another selects the record size (7, 10, or 12 inches) for the automatic mode. Used automatically, the arm lifts off its rest and cues the record at the outer edge. At the end of the record the arm lifts up and returns to rest, shutting off the machine. In either mode you can cue the record manually at any point via the finger-lift on the shell or by flipping a cueing lever behind the mode control. There's a "reject" position on this control to interrupt play and return the arm to rest. Finally, the control has a "repeat" position that starts the unit automatically and will repeat the record indefinitely until you reset the control. In our tests the 5520 went through all these operations flawlessly. The arm-cueing device worked beautifully, with no side drift and with ample damping for gentle arm descent.

The diecast aluminum alloy platter, a shade under 12 inches in diameter, weighs 2 1/2 pounds including the rubber mat and center dress piece. It is belt-driven from a synchronous motor. There is no provision for fine speed adjustment, but at the critical speed of 33 rpm no adjustment is needed; speed was absolutely accurate regardless of the test line voltage used. At 45 rpm it was consistently 1 per cent fast. Flutter averaged 0.07 per cent and rumble was clocked at -55 dB—performance that is seldom matched in even the best changers. Arm resonance was measured by CBS Labs (with a Shure V-15 Type II Improved cartridge) as a 9-dB rise at 6.1 Hz.

The tone arm is a well-balanced metal tubular type with rear counterweight and removable shell that accommodates any standard pickup. It has negligible friction laterally and vertically. Adjustments are included for optimum stylus overhang (a gauge and template are supplied, and the adjustment is quite easy); for vertical tracking force (absolutely accurate, with a range up to 3 grams); and antiskating. The latter is applied by means of a suspended weight—keeping compensation constant throughout the record side, which spring devices can't always do. It can be omitted or adjusted for any of three compensation settings depending on tracking force. Tracking forces under 1.5 grams get no compensation in this system—an approach open to dispute perhaps, but one that Sony has worked out with excellent accuracy according to the lab test.

The Sony 5520 comes with a carefully written and well-illustrated instruction manual and a 45-rpm single-play doughnut adapter. All told, the Model 5520 strikes us as a very appealing unit.

CIRCLE 149 ON READER-SERVICE CARD
The Equipment: Model 8054, a stereo/quadraphonic 8-track tape-cartridge playback deck (no power amps or speakers) in wood case. Dimensions: 13% by 4% by 9% inches. Price: $119.95. Manufacturer: Mincom Div., 3M Company, 3M Center, St. Paul, Minn. 55101.

Comment: The sleek styling of the 8054 is efficiency itself. The so-called program indicators are the numbered pilot lights in horizontal "slots" at the left. The cartridge slot is at the center, flanked by a selector lever (which advances the head position manually from one program to the next) and a fast-wind lever. At the right is the mode selector: 2-channel, 4-channel, automatic. The back panel has phone jacks for the four line-level outputs.

There is no on/off switch; as you slide a cartridge into the slot the unit first turns itself on and then, when the cartridge is all the way in, begins play. Play advances automatically from one program to the next, unless you skip by using the selector lever. The automatic switching between stereo and quadraphonic modes uses the special slot built into the Q-8 case (and omitted for stereo) to trip its sensor. We didn't find ourselves using the manual override much, but now that quadraphonic recording decks are becoming available the override will permit playing home-made quadraphonic tapes housed in the standard blank-tape cases, which so far are without the special slot. The fast-forward feature is a big help in looking for an individual selection, particularly in a Q-8 (which of course requires twice the tape-loop length for a given playing time by comparison to a stereo cartridge).

And that just about says it—except to add that in terms of sheer sound the 8054 is the most satisfactory 8-track player we've yet encountered. Its relatively wide-range electronics leave an unfiltered freshness to the top frequencies. They also allow more of the noise from the slow-speed tapes to pass through than in competing, but less wide-range, models we've tried. The choice is up to you; but until an 8-track player whose performance is up to that of the better cassette decks comes along, we'll take the Wollensak approach. As the lab figures document, the 8054 is not state-of-the-art; but neither is the 8-track medium itself. And the 8054 is a very attractive buy.

Wollensak 8054 Player Additional Data

<table>
<thead>
<tr>
<th>Speed accuracy</th>
<th>2.1% slow at 105, 120, and 127 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wow &amp; flutter</td>
<td>0.16%</td>
</tr>
<tr>
<td>S/N ratio</td>
<td>ref. 400 Hz RCA test cartridge</td>
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<td>left front ch</td>
<td>45.5 dB</td>
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<tr>
<td>right front ch</td>
<td>42.5 dB</td>
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<tr>
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<tr>
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<tr>
<td>Channel separation</td>
<td>record 1, play 2</td>
</tr>
<tr>
<td>record 3, play 4</td>
<td>42 dB</td>
</tr>
<tr>
<td>record 5, play 6</td>
<td>39 dB</td>
</tr>
<tr>
<td>record 7, play 8</td>
<td>39.5 dB</td>
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<tr>
<td>Maximum output</td>
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<td>0.75 V</td>
</tr>
<tr>
<td>right back ch</td>
<td>0.80 V</td>
</tr>
</tbody>
</table>
First Speaker System
with Laminated Magnet Structure


Comment: In the November 1971 issue ("News & Views") we published first reports of a German design for laminated magnets in dynamic devices. The claim was made—and confirmed by initial tests—that gains in both efficiency and distortion could be achieved by building the magnet structure from lamina, rather than solid material. So it was with considerable interest that we heard of Linear Design's having both taken over as U.S. representative for the process and applied it in an adapted version of the LDL-749.

The front of the unit contains a single, centered driver. Four identical drivers are mounted in each of the angled back panels, making a total of nine drivers. There is no crossover, and therefore no balance controls; connections are made to screw terminals at the bottom of the unit. The intent of such a design should be thoroughly familiar to our readers by now: to deliver most of the sound into the listening room in such a way that it is heard by reflection off nearby walls, opening up the sound and simulating the large radiating surfaces of the concert hall. To achieve this end the speaker must be placed away from the wall—perhaps about a foot or less is optimum in most rooms—and rotated until the most satisfactory stereo image is achieved.

We asked CBS Labs to test the modified model, and then A/B'd it with the original model in our listening room. But more of that in a moment. The impedance curve proved to be almost a textbook example, without the little quirks that can make multiple-speaker hookups problematical. Following bass resonance (centered at 140 Hz) the impedance drops to its rating point of 9.5 ohms (at about 450 Hz) and then rises gradually to beyond 16 ohms as frequency increases. Linear Design's rating of 8 ohms is therefore appropriate. Even in the extreme bass the impedance drops only slightly below this value, so it is an unusually safe model for parallel hookup to solid-state amplifiers.

The standard test level of 94 dB at 1 meter was achieved for 4.5 watts input, representing high efficiency. The unit handled continuous tones of 100 watts without exceeding distortion limits, and pulsed tones to 131.5 watts (263 watts peak) for an output of 110.5 dB, a good dynamic range. High-level pulse photos did show some waveform distortion, however.

You'll note that the frequency-response curve is not encouraging. Linear Design has an equalizer unit (for use with any speaker—not just the 749) in the works, but at this writing it's not yet available. We played the speakers through a JVC SEA (multiple-slider tone-control) receiver (the VR-5541, reviewed elsewhere in this issue), applying up to 12 dB of boost in the extreme bass and up to 10 dB at the high end. We'd suggest that you use something similar (several available equalizer models will do the job) with the 749 and provide some reserve power for that purpose. Perhaps 20 to 50 watts per channel would be appropriate in almost any room, though the 749 can be driven by less and will handle more.

With the equalization applied, the sound is well balanced and reasonably smooth. Dispersion is excellent of course, in fact so much of the sound is reflected off nearby walls that the normal truisms of high-frequency dispersion (the axiomatic beaming of individual drivers) do not really apply. In comparing the present version with the original we could hear little difference, though the bass did seem somewhat more efficient with the laminated magnet.

**LDL-749 Speaker Harmonic Distortion**

<table>
<thead>
<tr>
<th>Output Level (dB)</th>
<th>80 Hz % 2nd</th>
<th>80 Hz % 3rd</th>
<th>300 Hz % 2nd</th>
<th>300 Hz % 3rd</th>
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<td>0.21</td>
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<td>80</td>
<td>1.7</td>
<td>1.3</td>
<td>0.22</td>
<td>0.74</td>
</tr>
<tr>
<td>85</td>
<td>2.6</td>
<td>1.6</td>
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<tr>
<td>90</td>
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<td>2.0</td>
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<td>0.44</td>
</tr>
<tr>
<td>95</td>
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<td>0.30</td>
</tr>
<tr>
<td>100</td>
<td>5.3</td>
<td>5.9</td>
<td>0.75</td>
<td>0.23</td>
</tr>
<tr>
<td>105</td>
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<td>5.9</td>
<td>0.75</td>
<td>0.23</td>
</tr>
<tr>
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<td>5.3</td>
<td>5.9</td>
<td>0.75</td>
<td>0.23</td>
</tr>
</tbody>
</table>

*Distortion data are taken on all tested speakers until distortion exceeds the 10% level or the speaker produces the spurious output known as buzzing, whichever occurs first.*
More than the memory lingers on as new groups—and a few old—continue to experiment with "some of the most exciting music this planet has ever known."

Where Did All the Big Bands Go?

by Gene Lees

A FEW MONTHS AGO, I attended a concert on the campus of the University of California in Irvine by Don Ellis and his big orchestra and Willie Bobo's powerful little Latin jazz group. It was the first jazz concert ever presented at that campus, students told me—and it was a sellout. And this in a time when a number of rock concerts in that area had bombed.

The students loved the music, although the concert went on a little too long; a number of them told me of a growing interest in jazz among young people. Ellis himself said that he had been playing at universities all through the West, and the response was always the same: large and enthusiastic crowds. "If only the record companies would become aware of it," he said.

What ever happened to the big bands?

Well, Stan Kenton is out there still, and selling his records by direct mail. Woody Herman has an extremely vigorous band of young musicians, and audiences of all ages love them. Duke Ellington, Buddy Rich, and Count Basie are still very active. Jack Daugherty's excellent big-band album on A&M, "The Class of '71," got excellent airplay and sold well.

Anyone who thinks interest in the big bands is dead had better tell it to the Reader's Digest: Their LP reissues of big band music from the past have sold in the tens of millions. Time-Life, aware of this interest, started a program of re-creating the band sound of the past. Up in Canada, the prestigious Canadian Broadcasting Corporation has seen fit to mount a full-scale television series on the big bands, re-creating their sounds and, when possible, having their original leaders like Charlie Barnet and Woody Herman as guests on the show. When a show on the superb band of the late Claude Thornhill was mounted, Gerry Mulligan (who played and wrote for Thornhill) was the leader.

And if that evidence of interest in the big bands isn't enough, try this statistic on for size: There are an estimated 8,000 to 10,000 big jazz-inflected orchestras in the colleges and high schools of the United States.

It is significant that even during the musical drought of the 1960s, professional musicians would get together to form big bands and play for the fun of it, much as orchestral musicians will play string quartets together for pleasure.

The rock era now seems to be ending, as even the young grow weary of an endless thunderous amplified twang and as the social and moral values of the
rockers and their hippy followers fall deeper into well-deserved discredit. If the young do discover big bands, much of the credit will belong to such groups as Blood, Sweat & Tears and Chicago. Whether you like them or not, they introduced the younger listeners to the sound of horns.

If we have big-band music again, it will not be like that of yesteryear. It will be more like the music in the aforementioned Jack Daugherty album or Gerry Mulligan’s recent album on A&M. This new kind of big-band music incorporates the musical changes of the past twenty-five years: new instrumental groupings, complex Latin rhythms recently imported, the better elements of rock rhythms, which jazz players have of late been refining into something authentically exciting.

Artie Shaw, one of the major exponents of the big-band style, once told me that he thought the band era was unique and that there would never be another like it. And he was right, for if there is a revival on the scale the present activities suggest, it will, for the aforesaid reasons, be different. But Shaw meant something more than that.

The lay public cannot be expected to appreciate subtle and important music. There always has been a lot of bad popular music around, and that is the kind that the public seems to love most. Yet in the big band era millions of young people fell in love with first-rate music. For a brief, magical moment of history most popular music was good and good music was popular.

There were corny bands, to be sure. But the significant thing is that men such as Basie, Chick Webb, Herman, Ellington, Kenton, Thornhill, Jimmie Lunceford, Tommy Dorsey, Shaw, and many others achieved considerable success and personal popularity with music that was genuinely superb.

It is difficult to date the big-band era precisely. The seed began growing in the early 1920s, the body and leaves of the plant were apparent by 1930, and the full flowering occurred between 1935 and 1945. After that the plant went to seed. But the seeds fell on fertile ground and men such as Henry Mancini (once of the postwar Tex Benecke band), Johnny Mandel (a former Woody Herman Herd-er), Quincy Jones (an alumnus of the Lionel Hampton Band), Lalo Schifrin, Oliver Nelson, and the beloved (there is no other word for him) Benny Carter took the skills and techniques of big-band writing, crossed them with those of the classical conservatories, and turned movie music into the hardy, healthy hybrid it is today. Meantime, some of their colleagues went into the universities and planted the seeds of the astonishingly flourishing “stage-band” movement. And big-band-oriented schools like the Berklee College of Music in Boston and North Texas State in Denton, Texas taught big-band writing and playing to a generation of exceptional young musicians.

The big-band sound was, and is, closely associ-
Not all of the golden era big band leaders are out of business. Among those still active are Count Basie (left) and Stan Kenton (below left with Gene Krupa).

The big band influence has come down to the later generations whether it is in the music of a composer/arranger like Henry Mancini (left) or in the nationwide appearances of Don Ellis' (above) group.

It is necessary thus to qualify the definition carefully because not all the big bands played jazz, and not all the jazz bands were big. The best big bands were indeed jazz orchestras, but there were commercial dance bands that were quite good, and some of those "Mickey Mouse" bands, as they were known, were capable of creditable jazz when their leaders occasionally gave them their heads.

There were big bands before 1920. In World War I, Negro musician Lt. Jim Europe led a widely admired band that played for American troops overseas, as Glenn Miller and Artie Shaw would do one war later. But the big bands as we know them really began to take shape in the 1920s, as the instrumentation that later became so familiar evolved—saxes, trumpets, trombones, and rhythm section. Various men contributed to this development, but primary credit is usually given and no doubt belongs to Fletcher Henderson and Don Redman, with important contributions by Edgar Sampson and Benny Carter—all four were blacks, and three of the four were saxophone players.

Henderson formed his own orchestra, but it failed commercially and he went to work for Benny Goodman as an arranger. The success of the Goodman band popularized Henderson's kind of writing (and vice versa!) and paved the way for other bands built on Henderson's pattern. Indeed, some of the famous "Benny Goodman arrangements" came directly out of the book (as a library of arrangements is called) of the Henderson band, and some of Goodman's hits, including "Stompin' at the Savoy" and "Don't Be That Way" were written by Sampson originally for Henderson. Goodman today is a wealthy man, and Henderson is long since dead—of frustration, some say. And there is bitterness in certain black musical circles over these events. Some of it is justified, though it is difficult to blame Goodman personally for conditions that obtained in American society at that period.

Another critically important figure in the development of the big-band sound was Duke Ellington, whose approach was quite different from that of Henderson and Redman. To understand the era, and even much of today's music, it is necessary to examine this difference.

What Henderson, Redman, and the others had been seeking was a large ensemble that would swing. To achieve this, they segregated the instruments. That is to say, trumpets played with trumpets, trombones played with trombones—though part of the time they functioned together. But the saxophones maintained a separate identity. Except in massed tutti passages, they worked as a countervoice to the brass.

Ellington didn't do things that way. The Duke and his right-hand man, the gifted arranger and composer Billy Strayhorn (who also is dead now), liked to mix the sections—perhaps voice a clarinet...
with muted trumpet and trombone, as in Mood Indigo. Ellington was interested in shades of color.

Ellington’s approach influenced the Claude Thornhill band and its genius arranger, Gil Evans. And the Ellington-Evans approach influenced Gerry Mulligan, Miles Davis, and the small-group jazz movement they pioneered in the late 1940s, when the big bands were falling on hard times.

Both approaches, that of Ellington-Evans and that of Redman-Henderson, have had an extraordinarily wide and profound influence on twentieth-century music. When I saw a Russian musical variety show in Switzerland two or three years ago. I noted with interest that the orchestra’s format was the one developed by these men in the ‘20s, ‘30s, and ‘40s.

At first there were four saxes—two altos and two tenors. Ellington used a baritone saxophone, played by the stalwart Harry Carney. By 1940, more and more bands were adding baritone saxophones. The instrument not only gave a band a stronger bottom sound, it permitted the use of the more advanced harmonies that were becoming popular with arrangers and audiences.

There were variants on the format, of course. Woody Herman in the 1940s went to three tenor saxophones and a baritone, the famous “Four Brothers” sound. But five became the ideal sax section, and still is.

At first there were three trumpets and either two or three trombones. And that works, since it permits five-way voicings. But the brass sound grew in power, and eventually four trumpets and three trombones became standard; some bands went to five trumpets and four trombones. Brass writing had become so advanced, and the players were expected to perform such high and arduous passages, that lead trumpet players, the workhorses of the orchestra, tended to tire. So it became advisable to “split the lead chair” among two players. And when five trumpets and four trombones did at last play together as a section, it was one of the most dazzling sounds in all music.

But in general the experiment with format could be said to be complete when most bands had five saxes, four trumpets, and three trombones. That still is the basic pattern, although for many years saxophone players have often been expected to double on flute and occasionally even on oboe or English horn. The best of them do it effortlessly, and some of them arrive at record dates with so many instruments that they look like plumbers’ assistants.

The rhythm section consisted, by the 1940s, of piano, bass, drums, and sometimes guitar. The Count Basie rhythm section, for example, was instantly identifiable to the more astute band fans by Freddie Green’s rock-steady and flowing guitar work, so subtle that it was closer to a texture than an audible sound. The pianist was often a lost soul in the rhythm section. No one really knew what to do with him or why he was there, but he was, and he was usually confined to playing rhythm figures that no one in the audience could hear, and superficially reinforcing the harmonies in a manner similar to the keyboard player in the baroque era. Gerry Mulligan later did a sensible thing, though it shocked everyone: Like Haydn two centuries ago, he tossed the harmony-filling keyboard out of his bands, whether small groups or large. Still, the best big-band pianists provided an interesting added color in their solo work, and many of them (such as Mel Powell, who went on to become director of Yale’s Electronic Music Studio and dean of the School of Music at the California Institute of the Arts) were much admired.

It was de rigueur for a band to have two singers: a girl and a boy. They were there for romantic reasons, as the interpreters of ballads, usually saccharine ballads of little depth or worth. The instrumentals were what the real fans waited for. A lot of the band singers weren’t very good. Yet the best American singing, as represented by Frank Sinatra and Peggy Lee, grew out of the big band era. Both began as band singers.

The band era was withering by the late 1940s, as transportation costs rose and television exploded (or imploded, some would argue) on the entertainment world and broke the public habit of going out to be amused. And the newly developed long-playing record made the public more and more dependent on the phonograph for its music.

There were dozens of big bands traveling throughout America during the late 1940s. There were probably hundreds of others in business, if you count the “territory bands,” some of them excellent, which never broke through into the big time. Their leaders enjoyed a modest regional success, but frequently musicians who trained in these local groups went on to bigger things: Tommy and Jimmy Dorsey, Sonny Dunham, Lucky Millinder, Will Bradley, Harry James, Vaughn Monroe, Charlie Spivak, Lionel Hampton, and all the others whose names rang like those of gods rambling around an American Olympus.

They created a musical style that has influenced the entire world. It is hard to imagine what music would be like had they never existed; it is hard to imagine a sound for America had those bands never played.

Most of the bands are gone now, their leaders dead, as in Thornhill’s case, or retired, as in Barnet’s. But some of these remarkable men, as we have noted, are still out there, and they, with younger musicians like Jack Doughtery, the kids in the bands on the campuses, and the rehearsal bands scattered around the country, continue the far-from-finished experiment with some of the most exciting, interesting, and inventive music this planet has ever known.
Mengelwängler:  
“65 Years on the Podium Is Enough”

The musical world reacted with shocked surprise last week when Kurt Wilhelm Mengelwängler, the “Grand Old Man of Music,” announced that he would retire next month, on his ninety-third birthday.

“Sixty-five years on the podium is enough,” the white-haired maestro said in an exclusive interview shortly after the announcement. “After all,” he continued, “sooner or later those of us who are getting on a bit have to step down to make room for the younger ones.”

The brilliant and colorful career which comes to a close this season began in 1908. Mengelwängler, then twenty-eight, had already established himself as an instrumental virtuoso playing first-chair triangle with the legendary West Tyrolean Zither and Glockenspiel Chamber Society. The conductor, Fritz Furtberg, fell ill minutes before a concert and although Mengelwängler had never seen the score of Echoes of Bavaria, he managed the podium and with the steel beater of his triangle, conducted the orchestra in a stirring, history-making performance.

“The secret of successful conducting, you see, is fear,” Mengelwängler confesses. “I have had a penchant for thick, heavy batons. It only works very well for me too. I must say, especially in this last assignment.

“The tenor of successful conducting, you see, is fear. If the conductor can properly intimidate the orchestra, preferably with threats of physical violence, then he will have no problem.” While Mengelwängler’s technique may not work for everyone’s success over the past fifteen years with the New York Department of Corrections Recidivist Philharmonic clearly indicates that he has fully mastered his own technique.

“At first,” he confesses, “I was reluctant to take on The Repeaters, as our orchestra is popularly known. I had a quite comfortable berth with the Armonk (N.Y.) Symphony Orchestra during the season, with a rather pleasant and lucrative summer position at the Junior High School 209 School of Music. I held the Miss Parkhill Chair in Triangle there and was greatly respected. I believe I hold the record, among the entire J.H.S. 209 faculty, for the least number of muggings by students.

“But I could not resist the challenge that The Repeaters presented, young, vibrant musicians with just enough hostility to bring new dimensions to old music. I shall never forget what they did to Liebestraum,” he says in a near whisper, as a barely perceptible shudder passes through his frail body.

It was early during his career with The Repeaters that Mengelwängler refined the conducting technique that brought him international fame. He well remembers the first time he used it.

“I was rehearsing the orchestra in a symphonic arrangement of Spanish Eyes. based on a Radio City Music Hall orchestration, and it seemed to me that the string section was slowly closing in on me. I did not become concerned, however, until I realized that I was up against the wall, just under a window. Undaunted, I raised my arms for a crescendo and my right hand struck the bars, one of which came loose. I pulled it free and began conducting with it. Within a minute or two, the string section rejoined the rest of the orchestra. I have been conducting with an iron bar ever since.”

Was there any truth to the theory that the iron bar serves as a resonator which enables the Maestro to feel the vibrations of the orchestra?

“None whatsoever. The iron bar serves primarily as a deterrent to the musicians.”

Of the three auditoriums linked inextricably in our musical history with Mengelwängler’s name—Philharmonic Hall, Carnegie Hall, and the P.S. 209 Assembly Hall—which was his favorite?

“No question about it—Carnegie Hall,” he asserts. When it is suggested that Carnegie’s superb acoustics are the reason for the preference, the Maestro responds with a look of contempt.

“Don’t be a dummkopf,” he sneers. “What does a conductor know about acoustics? Look, you have about forty fiddles on your left, some thirty or so cellos, violas, and basses on your right, a whole assortiment of horns and whistles directly in front of you, and away in the back, a timpanist with an iron grip on his mallets and blood in his eye. Do you seriously think a conductor can hear the acoustics with all that racket going on?”

“Why, then, the preference for Carnegie Hall? “Because the podium is a good three inches higher than any of the others. You can loom over the orchestra better. That, plus the iron bar, scares hell out of them.”

Mengelwängler modestly denies—but with little conviction—that he is the founder of what has been called the Iron Bar School of Conducting. “Many modern conductors,” he claims, “achieve exactly the same effect with an ordinary wooden baton. It only sounds like they’re conducting with an iron bar.”

What does the future hold in store for the Grand Old Man after retirement?

“Reflection, relaxation, and a great deal of rest. At my age, waving an iron bar around in front of an orchestra can be a trifle taxing.”

The Repeaters plan a farewell party for their beloved Maestro. “to repay him,” according to the official announcement, “for everything.” Mengelwängler says he can hardly wait to see what they have planned. Neither can the rest of the musical world.

by Marvin Grosswirth
BERNSTEIN
STRAVINSKY
LESACRE DU PRINTEMPS
THE LONDON SYMPHONY ORCHESTRA

Ravel/Entremont
Piano Concerto G Major
Eugene Ormandy
The Philadelphia Orchestra
Piano Concerto in D Major for the Left Hand
Pierre Boulez
The Cleveland Orchestra

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The Cleveland Orchestra

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Zukerman, VIOLA
Barenboim, CONDUCTOR
Mozart: Sinfonia Concertante
Stamitz: Sinfonia Concertante
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On Columbia Records

*Also available on tape
Les Contes d'Hoffmann has not lacked recordings. In early LP days there was the Opéra-Comique set on Columbia. Cluytens-conducted, assembled from thirty-two 78 rpm sides, with Raoul Jobin as its hero and a trio of heroines; it represented much the sort of performance to be heard in Paris in those days, quite lively and enjoyable, not especially distinguished. (The Opéra-Comique as a company is no more; but Solti, they say, is planning a slap-up new Hoffmann for the Paris Opéra.) Then London brought out the soundtrack of the 1951 Hoffmann film—distinguished by Sir Thomas Beecham's conducting, and precious little else. Of more recent sets, Angel's of 1965, again conducted by Cluytens, remains in the catalogue, to be considered along with the two new albums under review.

Un peu d'histoire, as they say in the Michelin guides, makes an essential introduction to any account of a Hoffmann performance, since scarcely any two of them nowadays present the same text—and one of the main points of the new London album is that it is the first Hoffmann on record that tries to get back more closely to the opéra comique of Offenbach's original intention. I'll try to be as brief as possible. Offenbach died before his work reached the stage. Ernest Guiraud completed the score for the premiere in 1881, omitting the Giulietta act, but (in order to save the pretty Barcarolle, which Offenbach had lifted from his operetta Die Rheinnixen) shifting Antonia from Munich to Venice. When Giulietta returned she did so in the wrong sequence, before instead of after Antonia. From there, the tale becomes one of increasing textual corruption, with sung recitative gradually ousting all the spoken dialogue. In Vienna, Mahler omitted Prologue and Epilogue. Hans Gregor opened the Berlin Komische Oper in 1905 with an expanded Hoffmann that included Coppélius' Spectacles and Dapertutto's Diamond airs; and his version was the basis of the scores published by Choudens and by Peters which served, and still serve, for most revivals. At the Opéra-
peated six-note theme whose rhythmic character is at least as important as its melodic contour, there is no missing the composer. Indeed, one is strongly reminded in spots of Martin's *Petite symphonie concertante*, which, by the way, sorely needs a new recording. But for all the Martin trademarks that carry over from one piece to the next, one always finds fresh and fascinating ideas in each work, and in the Harpsichord Concerto Martin has been able to adapt a rather Bachish harpsichord style (the Fifth Brandenburg Concerto comes to mind at several points) to his decidedly contemporary rhythmic and harmonic textures, all of which are highlighted by the particularly delicate and subtle scoring, referred to by Martin quite accurately as "transparent." One is also captivated by some of the complex cross-rhythms between the harpsichord and orchestra in the second movement, which is basically a set of accelerating variations built around a rather Ravelian chordal theme. Christiane Jaccottet has a supple, flowing manner of playing the harpsichord, and she manifests a perfect understanding of the Martin concerto in her performance here. I must add that I have never heard better harpsichord sound on a recording.

Neither of the ballades benefits from the sensitive solo work of the Harpsichord Concerto, and in both cases the solo instruments seem under-recorded. Nor does either ballade display the harmonic or formal tightness that represents one of the strong points of the later concerto. But, on the other hand, both offer a more opulent melodic and orchestral style than one usually finds in Martin's work, and there are enough of the composer's earmarks, from the four-note theme after the introduction in the Trombone Ballade (1949) to the ostinato rhythms at the opening of the longer, more elegiac Piano Ballade (1939), to keep Martin fans happy. I might add that the colorful but dark-hued painting by Bazaine reproduced on the cover is a remarkably good choice to accompany Martin's music. Let's hope Candide doesn't stop here.

R.S.B.

**MOZART:** "The Eight-Year-Old Mozart in Chelsea": six divertimentos and five contredanses for various instruments. Academy of St. Martin-in-the-Fields, Neville Marriner, cond. Philips 6500 367, $6.98.

Neville Marriner and Erik Smith, a Philips official and Mozart expert, have expended a great deal of trouble on this recording which they might more profitably have lavished elsewhere. When Mozart was eight and staying in Chelsea during his English expedition with Leopold, he filled a notebook with musical sketches for keyboard—usually only a melody line with bass, leaving chords and inner parts to be done later. The so-called London notebook came to light in the late nineteenth century and was published in the twentieth. Erik Smith has taken these very sparse and innocent exercises and—working, as he says in the album notes, less on analysis than on intuition—has filled in the inner parts, supplied tempo and dynamic indications, occasionally composed closing measures, joined random movements to make complete pieces, and orchestrated the results, emphasizing woodwinds.

Smith's intuition is irreproachable, his documentation of what he has done meticulous, and this slender music offers some tunefulness and a great deal of bustle. But the real Mozart remains on those rudimentary notebook pages (and possibly some of *that* was dictated by Leopold—who, after all, had Wolfgang copy out an entire symphony of C. F. Abel during this same English visit, a symphony mistakenly known as Mozart's No. 3 for years). This recording is neither innately interesting enough to warrant more than one hearing nor historically valid enough to stand as a historical document.

S.F.

**OCKEGHEM:** Missa Ecce ancilla Domini—See Dufay: Missa sine nomine.


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Continued on Page 98
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I don't know about the rest of the fiddle fanatics in this world, but I make one mistake before listening to each new Paganini recording that comes along: I assume that only a dazzle-dazzle, purely virtuoso type of soloist can make the most of it—that a notably mature, "serious" artist is going to fail, somehow, to bring off the fireworks. Once again the theory proves wrong. Grumiaux personifies, if anyone does, the serious, searching violinist. And what does he do with the old wizard, Paganini? He brings to the music the best elements of his own accomplished technique, and sets up a beautifully balanced, well-controlled, unfrazzled pair of performances—striking both in their agility and in the warmth lavished on those famous lyric themes.

Grumiaux can glide up and down the fingerboard in parallel thirds and sixths with the best of them, and he does it without any sense of stress; he can also dance around up there in the stratosphere and make music of every note of it. I was particularly struck by the springiness and crystalline clarity of the finale of No. 4, and by the full, warm tone applied to that melancholy rhapsody in the slow movement. There is only one moment of shakiness in the whole recording, and that's during the double-stopped harmonics in the last movement of No. 1, where for some reason the soloist sounds a bit stricken. For the rest, there is clean fingerwork and precision bowing all the way, and a remarkably judicious, Italianate use of rubato on the songful subjects. Grumiaux plays his own cadenza in No. 4, August Wilhelm's in No. 1. The orchestra brings plenty of brilliance to the circus-music opening of No. 1, and pitches into its chores with a will.

S.F.


In the brief span of his twenty-six years, Pergolesi managed to compose a substantial quantity of theatrical and church music: La Serva padrona and the present Stabat Mater alone place him among the most notable composers of the first half of the eighteenth century. The Stabat Mater, his last completed work and composed while he was dying of consumption, is a masterful and highly expressive setting of the traditional Latin hymn describing the Virgin standing before the Cross. In Pergolesi's time, there was not much distinction between church music and the secular world of opera, so it is not necessarily inappropriate to select two well-known opera singers for this performance. Both Mirella Freni and Teresa Berganza are in fine voice and their singing here will delight their admirers. It will not delight those who expect authentic eighteenth-century singing style throughout: Here one hears inflection, rhythmic emphasis, and vocal coloring much more suitable to Rossini, Verdi, and Puccini, though Berganza is more in keeping with the style than her partner. The London record with Raskin and Le-
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There was once an early London disc of the *Left Hand Concerto* in which the opening pages sounded like a witches' cauldron. Suffer it to say, Boulez—his mana for detail—and the modern, ultra-defined recording techniques bring it all into the midday sun. The conductor's view of this piece is as outstanding here as it was in a recent "live" performance in Philharmonic Hall—broad, rhythmical, very dynamic, and extremely clear. The soloist in that concert performance was Leon Fleisher and it is sad that his outstanding, elucidating interpretation couldn't have been perpetuated in Columbia's recording. Entremont's pianism, by contrast, is a bit coarse and splashy, without Fleisher's fine tonal gradations and without that player's keenly analytical grasp of Ravel's motivic workmanship. Still, he brings a modicum of snap and bravura to the music and fills out the broader pianistic outlines of Boulez's purposeful conception.

The earlier Entremont/Ormandy reading of the G major Concerto is reused from Columbia MS 6629 where it shared vinyl with Falla's *Night in the Gardens of Spain*. This is a competent but not particularly distinguished account. The pianistic side is a bit blocky and helter-skelter, and Ormandy's "big orchestra" approach lacks the de rigueur intimacy and personalized jazzy details.

**Schumann**: Davidsbundlertanze, Op. 6.


Selected comparison (Schumann): Kempff DGG 139316  
Selected comparison (Brahms): Katchen Lon. 6410

Neither of these works has been recorded a great deal, and they appear on recital programs still less often. In the case of the Brahms, it's easy to understand why. With Schumann less so.

Brahms's C major sonata is almost as hard to listen to as it is to play. It is angular and bristling, a raw statement of youthful strength. Except in the first movement, the themes are of limited interest, and their development is superfluous. Despite moments of beauty, it is a piece we can live without.

*Papillons* and *Fantasiestücke* are the Schumann piano suites we hear most often. But the dialogue between the composer's alter egos Florestan and Eusebius as embodied in the *Davidbundlertanze* is superior to the former and at least as interesting as the latter. The eighteen pieces, more or less evenly divided between Florestanian ebullience and Eusebian reserve, give insight into Schumann's personal and musical character perhaps more clearly than any of his other works.

But one need know nothing of Schumann's fanciful *Davidsbund* or the personifications of his divided personality to recognize that this is exceedingly good piano music.

Maselos plays excellently in both works but comes out on top only in Schumann; there is just too much working against him in the Brahms. Even the first movement, the most interesting, sounds bombastic: the second-movement variations sound disjointed no matter how smoothly they are played, and the finale rambles so much that even Maselos' heroic attempts to forge an over-all unity are failures. His sense of drama and close attention to the infrequent lyrical passages make his performance more successful than Julius Katchen's on London. Katchen's approach is quite restrained, robbing the piece of its dramatic character, and his frequently choppy playing is no help.

Kempf's playing of the Schumann is more serene than Maselos'. He minimizes the obvious contrasts among the pieces, while Maselos makes the most of them and gives the suite a sparkle I find lacking in the earlier recording.
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René Kollo, Helga Dernbach, Christa Ludwig, Victor Braun, Hans Sotin — The Vienna Philharmonic Orchestra — Georg Solti
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Renata Tebaldi, Luciano Pavarotti, Sherrill Milnes, Regina Resnik, Helen Donath — The Orchestra of L'Accademia Nazionale di Santa Cecilia, Rome — Bruno Bartolletti
OSA-1398

Molière: THE PLANETS
The Los Angeles Philharmonic Orchestra — Zubin Mehta
OS-6734

Offenbach: THE TALES OF HOFFMANN
Joan Sutherland, Placido Domingo, Gabriel Bacquier — L'Orchestre de la Suisse Romande — Richard Bonynge
OSA-13106

Rumors have it that the Russians had made a studio recording of the Shostakovich Thirteenth (not to be confused with the live version that found its way out of Russia and has been available on Everest for five years), but only recently has this rumor finally been confirmed. Of course, between the time the work was put on ice in Russia shortly after its premiere (in December 1961) and the present recording, the score to the symphony somehow found its way to these shores and was quickly introduced by Ormandy (and later by Andre Previn in England) to concert audiences. Interestingly enough, many of the reactions in the West were just as silly in their own way as those of the Russian censors. The editor of France's Harmonie magazine, for instance, was incensed because Ormandy's unparallelled recording of the Thirteenth nudged out Boulez's Pli selon pli for the Montreux prize in 1970; she lashed out against Shostakovich's conservative musical style and refused to realize the absurdity of judging the two works, whose aesthetic intentions are universes apart, by the same standards. Where, one wonders, would it all end if one were to start talking of the emotional conservatism of Pli selon pli?

All disputes aside, the outstanding element of this second Kondrashin recording, which like the first contains the textual revisions in Yevushenko's Babi Yar poem demanded by the Soviet authorities (as does the score recently released in the U.S.S.R.), is bass Artur Eizen, who has a much better idea of pitch than Vitaly Gromadsky on the Everest disc and whose expressive, resonant voice balances much better with the rest of the symphony than Tom Krause's on the Ormandy release — although Krause, who is really a bass-baritone, more than makes up for this in his communication of the music. The nightmarish frenzy Kondrashin is able to work up in the second movement also struck me as particulary appropriate. But as is frequently the case with Kondrashin, there is a matter-of-factness to much of the Russian conductor's style that simply undercut the grandeur of the music, whose towering sense of tragedy is, I can only repeat, perfectly re-created by Ormandy. One need only compare the overwhelming drama of the third-movement climax in the Ormandy version with the tame effect the same passage receives in Kondrashin's performance. Furthermore, the sound on the Kondrashin disc suffers from a markedly pinched quality, and although the recording is worth having for the different point of view it offers on this masterpiece — and for Eizen's exceptional voice — it remains a very distant second to the Ormandy performance.

R.S.B.


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As in his recent reading of the First Symphony, Bernstein makes little effort to distinguish between "early" and "late" Tchaikovsky. His energetic and emphatic interpretation stresses those aspects of this music that foreshadow the full-blown developments of the last three symphonies in tonal weight and rhythmic drive if not in melodic inspiration.

Needless to say, the New York Philharmonic follows Bernstein's leadership with all-out playing, and the reproduction has an appropriately full-bodied impact. P.H.

VAČKÁŘ: "Eyes Front!" Czechoslovak Army Central Band, Karel Sfátný, Jindřich Brejšek, and Eduard Kudelášek, cond. Supraphon 1 14 0745, $6.98.

Marches: Riviera; Awakening; Fine Lad; Liberation; Triumphal Homecoming; Tempo (Maybe Today, Maybe Tomorrow); Eyes Front! Dances; South Moravian Dance No. 1; Evenieg at Sea (Waltz); Dobrejovice Polka; Serenade: Reminiscence of Zbiroh.

Václav Vačkář is a new name to me, and I am unable to find him in any available reference work. Nevertheless, he turns out to be (on the evidence of the music here as well as of the multilingual liner notes) a Czech bandmaster and composer of considerable fame in his native country—a minor nationalistic master, indeed, comparable to at least some degree with Denmark's Hans Christian Lumbye, say, and our own John Philip Sousa. Vačkář's dates are 1881-1954 and he apparently rose to prominence in the early years of Czech independence, after World War I, when he was able to supply the need for new military-band marches replacing those too closely identified with the Austrian Empire—examples of which were featured in Supraphon's earlier "Old Austrian Marches" program (1 14 020). But in addition to the seven brisk, catchily tuneful marches here, there are three engaging examples of his dance compositions (one of which, the polka, celebrates the composer's birthplace: Dobrejovice) and an evocative Reminiscence of Zbiroh Serenade which features flugelhorn and baritone (the instrument, not a vocalist) solos.

All of these are decidedly lightweight, primarily appealing for their simple but distinctive melodic charms, and only in small part for compositional techniques which don't go far beyond elementary imitative-phrase and routine-accompaniment writing. And unfortunately the eighty-piece army band is either mighty thin- and coarse-toned in itself or is made to seem so by acoustical dry recording. No matter: You don't have to be Czech or even share my own personal susceptibility to Czech music in general to enjoy Vačkář's disarmingly fresh music-making. R.D.D.

VERDI: Requiem. Mirella Freni, soprano; Christa Ludwig, mezzo; Carlo Cossutta, tenor; Nicolai Ghiaurov, bass; Wiener Singverein; Berlin Philharmonic Orchestra; Herbert von Karajan, cond. Deutsche Grammophon 2707 065, $13.98 (two discs).

Selected comparisons:

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Of making many Verdi Requiems there is no end. This is the eighth stereo recording currently available and among the most interesting; yet for all its considerable virtues it falls short of persuasiveness. The Requiem is one of those works that, like La Traviata, seems to defy satisfactory performance on disc. Sometimes (the Toscanini set, for instance, or the Serafin) the principal fault lies with one or another of the vocalists. Sometimes (the Ormandy) conductor and singers alike share the responsibility. Sometimes (the Reiner) the chorus lets one down. Sometimes (the Bernstein) the unsatisfactory quality of the recording plays a decisive part. Sometimes (the Barbirolli, the Leinsdorf, the Solti) the conductor must take the full blame. Such is the case with the present recording...
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CIRCLE 48 ON READER-SERVICE CARD
As Verdi's vast conception unfolds itself it is determined by intelligence. There is not a hint of caprice, only a fortissimo for a low emotional temperature. Yet in the end the whole enterprise is vitiated by the listeners' expectations. From the unresolved harmonic tensions of the Act I prelude, the opera moves with irresistible momentum into the ceaseless ebbs and flows of the love duet, then to the arching frenzy of Tristan's soliloquy, and at last to a consolatory resolution in Isolde's Liebestod, where the struggle of Tristan and Isolde toward erotic consummation reaches its long-delayed climax in mystical understanding.

Among complete recordings of this opera only two, it seems to me, do real justice to the composer's intentions. Wilhelm Furtwängler on Angel and Karl Böhm on DGG. (Solti's performance on London seems to me a failure, on account of the conducting, the Tristan, and the recording.) These are very different kinds of performance, yet each in its own way evinces the dynamism, the sense of urgency and aspiration, which is at the heart of Wagner's conception. Furtwängler is magisterial and luminous, while Böhm, impetuous and immediate, drives forward with unflagging excitement. Both of these sets belong in every opera lover's collection.

The new Karajan recording is not in the same class. Karajan's grasp of the score cannot be doubted. Every nuance in his performance is determined by intelligence. There is not a moment when the listener is intellectually unaware of the opera's design. The climaxes are beautifully judged, each one growing progressively in intensity until the death of Tristan, at which point turmoil dissolves into serenity.

Karajan's virtuoso handling of the Berlin Philharmonic Orchestra enables him to gauge his effects to a nicety. Karajan favors very transparent textures. The climax of the Act I Prelude is gloriously clear. The orchestral peroration after the drinking of the love potion is both pellucid and totally resplendent. King Mark's hunting party fades into the night with ravishing delicacy, like "the horns of elfland faintly blowing." The fatal entrance of Mark at the end of the love duet is powerful yet lustrous. So is the opening of the last act. By comparison with all this, Böhm is almost coarse. Certainly, no other orchestra on disc—neither even Furtwängler's Philharmonia, nor at its magnificent peak—plays with as much refinement, technical skill, and sheer sensuous beauty as the Berlin Philharmonic.

Yet in the end the whole enterprise is vitiated by the willfulness of Karajan's approach to the drama and the music.
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DANCE SOCIETY. Camerata Hungarica Ensemble, Laszlo Szirtesi, dir. In HD.


Dance music presents a record reviewer with a particularly difficult task. The review pressings were noisy and plagued with problems here. Both the recording of the performance and the manufacture of the discs leave much to be desired. The sound is congested and lacking in presence. A treble cut is necessary for even reasonable results. Moreover, the acoustic keeps changing. At one moment the sound is forward, then suddenly—e.g., at "O sink hernieder Nacht der Liebe!"—it recedes into the distance. Brangane, singing from a remote watchtower, sounds louder than the lovers before us. There is some odd placement in the last scene of Act II and the final melee on Kareol is very confused, with Brangane once again louder than anyone else. The review pressings were noisy and plagued by rumble.

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Bach: Fantasia in C minor; Siciliana in G minor.
Chaminade: Autismus in A minor.
Haubiel: Noche en España; Elvris Spinning.
Siciliana, taken from the E flat Flute Sonata, S. 1031. is here performed in a Victorian baroque adaptation by Leonid Kreutzer, so we won't even begin to discuss style.

The Methil sonata apparently Miss Kramer's discovery and gets prime billing on the sleeve. Sir Thomas Beecham used to charm us with some of this French classicist's (1763-1817) music; the sonata is of like quality: suave, graceful, and utterly winning. It is played with gusto and relish. The romantic composer Sigisbert Thalberg, a more scope of his romantically oriented performer, and frankly I am a little surprised that Miss Kramer doesn't come off better than she does. The Brahms intermezzo is mauled by too willful a rubato and the Chopin nocturne lacks mystery and a true singing line. The Rachmaninoff prelude are likewise conventions and respectful to the music.

Anyone familiar with Musica Reservata's earlier recordings knows the heady force of rhythm-on-a-drum style of performance. Snappy rhythms and sharp acidic sound characterize most of these rousing Italian dances. The repertoire is more homophonic and rustic in appeal than the Hungarian selections and the outdoor style is well suited to their boisterous nature. This would be a successfully sprightly background record if it were not for the intrusively hoarse, coarse villottas which open and close each side, exhibiting the worst excesses of Musica Reservata's vocal ensemble. Easy Listening it is not.

S.T.S.

Selma Kramer (former pupil of Hans Hermanns, Leonid Kreutzer, and Artur Schnabel) has, to judge from the many press quotations on the album, concertized extensively. Nevertheless she will probably be a new name to many listeners (as she was, indeed, to me). This well-recorded collection shows her to be an artist of the older school: strong, expressive, and sometimes a bit too inclined toward mannerism. She plays Scarlatti as if it were meant for the piano-effusive, without ostentation, but just a little heady-handed. In the Bach Fantasia, a tendency to anticipate with the left hand might well raise the eyebrows of the tourists used to a chaster approach. (The Siciliano, taken from the E flat Flute Sonata, S. 1031, is here performed in a Victorian baroque adaptation by Leonid Kreutzer, so we won't even begin to discuss style.)

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GOLDSCHMIDT: Duet for Violin and Cello. Irving Ilmer, violin and viola; Leopold Teraspulsky, cello. Coronet 1715, $5.95.


Two excellent instrumentalists have put together a recital of almost unknowns, and it makes diverting fare—at least, the twentieth-century works do. The Haydn duet (unauthenticated, according to the album notes) is of moderate interest, and the Beethoven Eyeglasses duo is a rather tedious affair for my money. But Villa Lobos' exotic Duo for Violin and Cello—demanding, craggy, and full of colorful instrumental effects—ought to be aired more often on the concert platform, it is so skillfully scored that the two instruments complement each other in a good, close-knit texture. The Piston is attractive, with succulent linear interweavings in the first movement, some ingratiating parallel activity in the second (a lovely slow movement that lives up to its "serene" designation), and plenty of rhythmic bounce and fluid melodicism in the third. The Hindemith is a one-movement essay with a great deal of rhythmic thrust in which the instruments alternate in predominance. Ilmer and Teraspulsky are both on the faculty of Indiana University, and perform handsomely. S.F.

The only really good thing here is Morton Gould’s Columbia, which its composer describes as “a set of contrasting sequences in the shape of pronouncements, airs, dances, memorials, hymns, parades, and flourishes,” all based on Hail Columbia and Columbia the Gem of the Ocean. It sounds like something by Charles Ives that his professors had corrected—lives with right notes. Even the description quoted above is eminently Ivesian in its prose style. But the work has vitality and zest, and it is entertaining to see what changes Gould is able to ring on those familiar tunes. Soundings is an effort on Gould’s part to write a sort of two-movement symphony. It doesn’t come off very well, but one can’t be sure of who’s to blame, the composer or the conductor. The blame in the case of Carlisle Floyd’s blantly trashy In Celebration rests, however, only on one pair of shoulders. A.F.

Osseau-Lyre continues the reissue of its elderly monos “electronically reprocessed”: some of them are surprisingly viable—though not this one. Bruce Boyce is not a bel canto singer; the voice is a bit dry and hollow and does not take kindly to coloraturas. Margaret Ritchie, the Dafne, is a better singer but has some mannerisms à la Joan Sutherland. Anthony Lewis, an excellent musician, is not at his best here; things are pretty stereotyped. In fairness I must say that all participants may owe their lowered status to the artificial sound which is quite poor. P.H.L.

HANDEL: Apollo e Dafne. Margaret Ritchie, soprano; Bruce Boyce, baritone, Ensemble Orchestral de l’Oiseau Lyre, Anthony Lewis, cond. Oiseau Lyre OLS 130, $5.98.

Excellent performances of four of Handel’s twelve Op. 6 concertedos, boasting a resonant recorded tone and superb unanimity not only within each section of the orchestra but over-all as well (which accounts for the fine, clean, precise en plainse on fuga subjects). The temps move along as they ought: the solo work on the part of the concertino violinists is unfailingly attractive. Richter’s conception does not have quite the extra measure of virtuosic flair of Neville Marriner’s on London—those performances being slightly bouncier in rhythm and more flexible in dynamic shaping. But the soloists’ tone is more appealing on the Richter, and the recording in general should prove a rewarding one to live with day in and day out. S.F.

Mozart’s youthful “Italian” quartets (1772-73) should be more popular with the recording fraternity. They are a delight to the ear: melodious, elegant, and extremely well made. The Quartetto Italiano is a worthy exponent of the music: their ensemble is faultless, this kind of suave and seductive melody is in their bones, and they avoid any cuteness. Excellent sound. P.H.L.

Orff’s Trionfo di Afrodite. Helena Tattermuschová, soprano; Ivo Zidek, tenor; Czech Philharmonic Choir; Prague Symphony Orchestra, Václav Smolárek, cond. Supraphon 1 12 0877. $5.98.

OGG’S deliberation in completing the Jochum re-recordings of the full Orff trilogy, which they pioneered in mono, has permitted Smolárek and Supraphon to beat them out in stereo. No matter. Except for its stereo primacy and the enthusiasm with which it is performed, this Aforodie is strictly a minor-league production: course in both vocal and orchestral tonal qualities, lacking sonic weight and breadth in its recorded sounds. In any case, Aforodie is the lonely stepchild of the Orff family, only dimly echoing the dynamic drive and dramatic excitement that characterize Carmina Burana in particular. R.D.D.
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New Pressings of First Quadrads. At this writing three recordings have come out on RCA's "discrete" Quadrads. Why the quotes around discrete? Because, as the matrix people love to point out, the four signals of quadrrophonics are not kept separate and distinct throughout the reproduction cycle, but are mixed in such a way that stereo playback equipment will pick up a combination of front and back on both sides. This combining (or "folding," as it often is called) of the quadrasonic sound image is accomplished by a sum-and-difference signal process that is by definition a form of matrixing. And therefore the recordings are not truly discrete.

They might as well be to my ear, and anyone who fusses about the terminology is to that extent being a bit pedantic. Outside of a little more noise in extremely quiet passages, I really can find no audible basis for distinguishing between the Quadrads and the discrete open-reel tape--or the Q-8 cartridge, which has more noise yet. I've been playing the Hugo Montenegro "Godfather" record and the "Fantastic Philadelphians, Vol. 1" (both of which were reviewed in this space by Leonard Marcus last July) with a Panasonic solid-state Shibata-stylus cartridge and demodulator, feeding into the discrete inputs of several different quadrasonic setups. First let me say that these are not the same pressings that were reviewed in July. At least partially due to Marcus' review, they have been remastered and there is a noticeable improvement in noise. Beyond that, the quadrophonics are still unusually clear and unequivocal.

Although they carry the same catalogue numbers, we note a changed logo on our copies of the remastered pressings (see photo).

QUADRADISC
quadra disc

Old (top) and new Quadradic logos

Incidentally, Panasonic's Shibata-stylus cartridge is very good for stereo records as well as quadrasonic, and I have no qualms about using it for everything.

Enter London Records. London has issued no quadrasonic discs, but it appears to be making master tapes for the purpose; Ampex has released several of its titles in Q-8 form. One is "Children of France" (London/Ampex L 77150, $7.98), a collection of often familiar, Gallicly romantic songs, sung by the Chorale des Enfants de l'Opéra de Paris. The results are, as you might expect, charming rather than spectacular. From What Now, My Love (in French of course) to Plaisir d'amour, the tots chirp joyously. It's not everybody's cup of onion soup, but well recorded, with a comfortable, unfurled quadrasonic perspective. And as for children's singing, quelle expérience!

Another is "Film Spectacular No. 4" (London/Ampex L 77173, $7.98), subtitled "The Epic" and performed by Stanley Black conducting the London Festival orchestra and chorus. Spectacular, yes; epic, yes again. But sadly the music, which celebrates the soundtracks of Patton, Stagecoach, Ben Hur, and such, just isn't that interesting. Even the opening of Zarathustra (from 2001) doesn't come off, whether because of the arrangement, the tape transfer, or poor high-end response in my 8-track player, the celebrated organ pedal point sounds more like a bad hum in the equipment. Whatever the cause, this is the one fault I could find with the sound.

Guessing Games. At the New York High Fidelity Music Show I had an opportunity to try an experiment with audiences at the seminar programs. Using direct copies of master tapes, supplied by Vanguard for the purpose, I played the same passage from the Berlioz Requiem in three different forms: simulated quadrophonics (via a simple matrix) from the stereo master, decoded quadrasonics (via a full-logic decoder) from the SQ master, and quadrasonics directly from the discrete master. When I asked the audience to identify which was which, ninety per cent correctly picked the discrete version, but there was very nearly a fifty-fifty split in trying to distinguish matrixed from simulated.

The setup and room (a fairly large ballroom) was hardly ideal for quadrasonics--no public demonstration ever is to my mind--so the experiment may prove nothing. But in that room and with that recording, at least, the audiences' judgment was unequivocal: They heard a greater difference between matrixed and discrete program material than between matrixed and simulated. Until a wide variety of recordings is available in all three formats for A/B/C comparison--and until record producers have had more time to explore the inherent properties of matrixing--I'd prefer to reserve judgment.
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As for their receivers, amplifiers, tuners and turntables, they can supply you with a list of "who's who" in music that have complete AR systems in their homes. One such gentleman is Arthur Fiedler, (left) conductor of the Boston Pops Orchestra. That one name alone is worth more than we could ever tell you about AR. (P.S. Our new catalog will also have the new AR-7 speaker.)

CIRCLE 17 ON READER-SERVICE CARD

Record sales are slipping downward. Albums that sell the most are given the automatic title "million-sellers," but who really knows? In the face of this, A&M is taking a chance with a fine young unknown talent, Renee Armand. She is the kind of artist who may not make it the first time out, since quick sellers have an aroma of bubblegum, one way or another. But A&M is to be congratulated on its foresight. Miss Armand, for all her youth, is a grown-up, a quality artist by instinct. Miss Armand's voice is clear, warm, and enthusiastic. In collaboration with Kenny Clarke and Jim Gordon, she has written all her own lyrics. The words range from excellent (You and I; I'm Going Away) to not-quite-focused (Falling Ladies). But a song is more than a lyric. Most people don't even know the words to their favorite song. It's the marriage that counts: music, words, singer.

The album can be broken down into three kinds of sounds. One is the A&M sound, which we have always liked. You hear it on albums by Sergio Mendes, the Carpenters, the new Lam Hall record, etc. In this set, it covers You and I (a beautiful song about a love that just missed). Raining in L.A.: Does Anybody Love You, and others.

The second sound grows out of the remarkable arrangements of Roger Kellaway (Falling Ladies, a fragile tapestry in strings, and I'm Going Away, on which Miss Armand does her deepest singing).

The third sound is one we have not heard before created by drummer Jim Gordon, who produced most of the album. Gordon is perhaps best known for his work with such rock stars as Joe Cocker. He is much more than the best drummer around. On two tracks, England and I Think You're Making Me Go (the wrote both tunes), Gordon plays piano, acoustic and electric guitar, and percussion, as well as drums. Gordon's work adds up to a driving and hypnotic musical whole which leads Miss Armand into her most sensual singing. The interesting vocal presence on parts of England is produced by a process called phasing. These two tracks are, for me, the ones in which lyrics matter least and overall impact is strongest.

About the mix. Sometimes it's fine. On other tracks, such as Friends, Miss Armand's voice-the point of all the work-is all but lost in the texture of the band. It's more likely that it happened in the mastering rather than in the mixing-and it happened before at A&M, otherwise an excellent studio in which to record. An even texture is fine for some albums, but with an artist such as Miss Armand, vocal identity is the factor that pulls the album together.

Despite flaws, Miss Armand's debut album proves that she is a lady to be taken seriously, a durable sort of talent: the same goes for Jim Gordon as a producer. M.A.

JOAN BAEZ: The Joan Baez Ballad Book. Joan Baez, vocals and guitar; Fred Hellerman, guitar; East Virginia; Henry Martin: All My Trials, House of the Rising Sun; Silkie, Lily of the West, John Riley; Silver Dagger, fifteen more. Vanguard VSD 41/42, $9.98 (two discs).

Over ten years ago Joan Baez, the leading figure in the folk revival, was singing traditional Anglo-American ballads. She has since drifted nearly everyone else into contemporary material. Now Vanguard has released this retrospective detailing the traditional years. It's a welcome collection, though a bit unnecessary for those who own Miss Baez' early LPs. The fact that Vanguard released the set at this time may, I think, be considered typical of the general feeling that contemporary folk comps. If it's become a bit boring lately and that some attention to the classics is now in order. M.J.

COMEDY RECORDS. For a feature review of comedy recordings by George Carlin, Murray Roman, Radio Dinner, Marshall Efron, Gore Vidal, Bill Cosby, and Monte Python's Flying Circus, see page 76.

RICHELIE HAVENS: On Stage. Richie Havens, vocals and guitar; Paul Williams, guitar, Eric Oxendine, bass; Emile Latimer, congas. From the Prison, Old Friends, God Bless the Child, The Dolphins, My Sweet Lord; No Opportunity Necessary, Nop Experiences Needed, Ypoe Honey, Just Like a Woman, Teach Your Children, High Flying Bird, San Francisco Bay Blues; five more. Stormy Forest 2 SFS 6012, $5.98.

This is the first "live" recording by the man who is perhaps the folk scene's leading vocal stylist, and it's a fine one. Havens sings most of his familiar songs, including material versions of Just Like a Woman and San Francisco Bay Blues. He fails only by tending toward repetitiveness, and by including one or two ill-chosen selections. (My Sweet Lord really requires a vocal chorus, which Havens does not provide).

M.J.

BONNIE RAITT: Give It Up. Bonnie Raitt, vocals, bottleneck, and acoustic and electric guitars; rhythm accompaniment. Nothing Seems to Matter; Love Has No Pride; I Know, seven more. Warner Bros. 2643, $5.98.

This is the second album from Bonnie Raitt, a young singer/guitarist/sometime writer with old-time musical instincts. Miss Raitt's musical world is one of blues, rag piano, bass-drum pedal solid on one and three, Dixie clarinet, and songs with words like: "You can make me do this, you can make me do that, oh baby but you got to know how." Sweet hints in the air of Bessie Smith. A red-velvet parlor car in the middle of the space age.

All this from a fragile and very young-looking lady with red hair, a redhead's complexion, and a shy smile. Miss Raitt's backup musicians are equally young and contemporary looking. The warmest of the old and new meet in Bonnie Raitt and her friends. All are wonderful musicians, all work closely together.

If there is one quality above others that makes Miss Raitt purely likable, it is her relaxation. One feels she has not so much chosen her style as glided into it with intuitive ease.
"Most impressive range and power...
Bass is clear and very deep. Distortion was quite low even at high sound levels." Audio Magazine

"Superior transient response...
extreme clarity, will not break up under any normal or even super normal pushing..."

Larry Zide, American Record Guide

"What a speaker!...
The sonic presentation was excellent; voices were natural with no coloration; orchestral music was balanced and full; transients came through cleanly; the organ sounded authentic. Indeed, for a system of its size and price, designed for home use, the Grenadier strikes us as among the best." High Fidelity

CONSUMER COMMENTS: R. A., Portsmouth, N. H., The rich true sound of stereo • W. S., Canoga Park, Calif., The style for my wife...the sound for me • J. A., Hyattsville, Md., Superior sound over anything near its price • B. O., Vallejo, Calif., That's good sound • T. E., St. Louis, Mo., Fantastic sound and the fine quality in the design • R. G., New York, N. Y., I love it; you made it! • D. D., Honeybrook, Pa., Fantastically good fidelity • J. F., Vancouver, B. C., This speaker is truly a work of art!

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CIRCLE NO. 90 ON READER SERVICE CARD
au courant
lectic local character takes on ecology, space
a peacenik. a recording artist, and author of
ber of that outrageous satirical band, the Fugs,
Ed Sanders is a practicing poet, former mem-
mor. Reprise MS 2105, $5.98.
strings, vocal, and rhythm accompaniment;
Sanders, vocals and autoharp;

Bonnie Raitt—bursting with talent, sunshine, sadness.

It's hard to imagine her in any other musical place. With John Raitt for a father and musical comedy as a growing-up place, she has surely had wide musical exposure, and per-
haps has even experimented at one time or an-
other.

Bonnie Raitt is bursting with talent, sun-
shine, sadness, and friends with whom to share her gifts. Presumably worldly success will come. If not, she's still way ahead of the game. Listen to her.

M.A.


Ed Sanders is a practicing poet, former member of that outrageous satirical band, the Fugs, a peaceknik, a recording artist, and author of that term paper about Charles Manson. The Family. In "Beer Cans on the Moon" this eclectic local character takes on ecology, space travel, the rock culture, and a number of other au courant topics. The results, unfortunately, are totally predictable.

Everyone knows that littering the moon is thoroughly indecent; everyone knows that Henry Kissinger has escaped from the canvas of a surre-
alisitic painting; we do not need Sanders' derer (Ring! Ring! Goes the Bell).

This album encompasses material recorded by the influential soul/gospel/rock ensemble both for Elektra and Atlantic. The absorption of those companies into the great parking lot of recordings that makes this possible, which I suppose is another argument for con-
glomerates.

D & B was the birthplace of Leon Russell and the Hollywood Backup Band—Bobby Whitlock, Carl Radle, Bob Keys, Jim Gordon, Jim Price, Jim Keltner—who have played on dozens of important recordings. For this rea-
son alone, "The Best of Delaney & Bonnie" is a significant album. It's also powerful, rocking music.

M.J.

GARY GLITTER: Glitter. Gary Glitter, vocals; vocal and instrumental accompaniment. Rock and Roll Part I; Baby Please Don't Go; The Wanderer; nine more. Bell 1108, $5.98.

Both the English and American charts have been topped by two singles that bear the strange titles, Rock and Roll Part I and Rock and Roll Part II. These cuts, both of which rely upon repetitive pounding rhythms and lyrics that are more nonsense than anything else, man strike one as the very worst of contemporary pop music or another of this season's amusing novelties. I'm good-natured enough to sogn any of these "tunes" to the novelty categ-
ory and to declare that their author/per-
former, Gary Glitter, is quite a novelty also.

Glitter, all decked out in the flashiest clothes possible, combines the current peacock craze with a hefty dose of Fifites nostal-
gia. On his "Part 2" creation, he even tosses in a sprinkling of something that sounds as if it had escaped from David Bowie's "Ziggy Stardust" album. Glitter does not miss a trick. True, there is not much artistry involved in what he does but it does seem to be all fun.

On this disc, this deep-voiced one-manSha Na Na extracts every bit of melodramatic emotion from Richie Valens' Donna. He also does the same for Chuck Berry's "School Days (Ring! Ring! Goes the Bell). His The Wanderer is an engaging if synthetic brand new Fifites tune, and his Rock On has an insistent, urgent sound that is infinitely irresistible.

Glitter may not be a musical genius but he is a consummate novelty that can certainly be called amusing.

H.E.

THE BEST OF DELANEY & BONNIE. Delaney Bramlett, vocals and guitar; Bonnie Bramlett, vocals, vocal and in-
strumental accompaniment. When the Battle Is Over; Only You Know and I Know; Never Ending Song of Love; Soul Shake; seven more. Atco SD 7014, $5.98.

John Denver has changed not a whit in the ten years since I first heard him singing in a club called Ledbettter's in Westwood. The club was owned and run by Randy Sparks, one of Den-
ver's first supporters.

I am reminded of that period, during which I was coaching acts at that club (not Denver, he didn't need it), because of one of the songs in this new Denver album: Darcy Farrow by Steve Gillette and Tom Campbell. I first heard it at that time when its composers were on the local scene. Things were much folkier then. Sparks and the New Christy Minstrels were making brashly commercial "folk" music. Denver himself was not commercial. He was pure folk.

He still is, with his clean voice and his al-
most styleless style. Denver may be the only real successful straight folk singer. (Lenny Breau is closer to pop music these days.) Denver's simplicity makes him more interesting as a recording artist than as a performer. On stage he just stands there and sings; on records his purity comes through beautifully.

Denver also has proved to be a fine song-
writer. He is not a consistent writer, but when he's hot he's hot: "Leavin' On a Jet Plane: Country Road (my favorite); Poems, Prayers and Promises; Goodbye Again; and others. One of Denver's new songs is called Prisons. Unfortunately he has key ed it so high for his voice that shrillness dominates and the impact of its strong lyric (Vietnam POWs is almost lost. Also included in this set is a wonderful song by John Prine called Paradise.

It is impossible to imagine that John Denver is anything less than a very, nice guy, and this likability shines through his music and his sweet voice. Perhaps that explains the durabil-
ity of his appeal.

M.A.

CHICAGO: Their Latest Release. Terry Kath, guitar and vocals; Peter Cevera, bass and vocals; Robert Lamm, keyboards and vocals; Lee Loughnane, trumpet, background vocals, and percussion; Walter Parazaider,
Presenting the perfected iron-oxide tape: Capitol 2.

The light color is the result of taking the carbon out of the oxide side of the tape. Carbon doesn't help the recording properties of tape in any way. But other manufacturers are forced to use it in order to achieve good static properties. Capitol 2 solves that problem differently.

The backcoating. Just as the side of the tape that touches the heads should be smooth, the texture of the back of the tape should have a controlled roughness that improves handling characteristics. So Capitol puts the carbon into its new Cushion-Aire™ backcoating. The new backcoating not only prevents electrostatic charges from building up, but improves the handling characteristics of our reels, helps make our cassettes jamproof, and extends the tape life considerably.

Presenting the world’s best open-reel tape: Capitol 2 Ultra-High-Output, Low-Noise (UHL).

Capitol 2 UHL is the perfected reel tape. At 15,000 Hz (at 3½ ips), the new tape is, on the average, 4.5 dB more sensitive than the top tape made by the best known brand.

Presenting the perfected iron-oxide cassette: Capitol 2 High-Output, Low-Noise (HOLN).

Capitol 2 cassettes aren’t just the best iron-oxide cassettes you can buy (at least 6 dB more sensitive than conventional premium tapes at high frequencies, where it really counts). For many reasons, they’re the best cassettes you can buy.

Capitol 2 HOLN cassettes are compatible. Say you bought a good cassette recorder two years ago. You can’t use chromium-dioxide cassettes. But you can use Capitol 2! With the kind of results chromium dioxide users have been bragging about ever since it came out. The new iron-oxide cassettes will improve the sound of any cassette recorder in the house, from the old one you gave to your kid, to the new Dolby-ized one you bought yesterday.

Capitol 2 HOLN cassettes are jamproof. The Cushion-Aire™ backcoating not only improves cassette winding, it makes cassettes jamproof.

The texture of the backcoating assures that the tape will always wind smoothly with no steps, protruding layers, and other pack irregularities that cause, among other things, jamming. So Capitol 2 HOLN cassettes just don’t jam.

The perfect cassette package: the Stak-Pak™

If you’ve ever tried to locate a cassette in a hurry or pick one from the bottom of a pile, or put one away in an orderly fashion, you’ll appreciate the Stak-Pak. It’s modeled after something you find around the house: the chest of drawers. The Stak-Pak is very simply, a double drawer. It holds two cassettes. But the unique part of it is that Stak-Paks slide together and interlock to form a chest of drawers. The more you have, the higher your chest of drawers. Each cassette is neatly filed away in its own drawer.

The world’s most acclaimed cartridge.

The Capitol 2 Audiopak™ is the world’s most popular cartridge, long a favorite not just with consumers, but with broadcast studios and duplicators. The cartridge tape is a special formulation of iron oxide, different from the new Capitol 2 cassettes and reels. It’s specially lubricated (‘that’s why it’s often called lube tape!’). Capitol 2 Audiopak cartridges are the standard against which all other cartridges are measured.

The price, perfected.

Your dealer will sell you four Capitol 2 cassettes 60 s or 90 s, your choice, packaged in two Stak-Paks, for the price of three cassettes alone.

How to find Capitol 2.

Capitol 2 is new. Not all stores stock it yet. If you can’t find it, ask your dealer to order it for you.
Chicago aims its material directly at a college audience, and the band's college audience has given Chicago great success. By blending jazz and rock à la Blood, Sweat & Tears, Chicago offers its fans the illusion that they are getting music rather than noise. even though the monotonous regularity of this seven-man ensemble's approach lost its lustier records ago.

Unfortunately, the group's lyrics can be just as mediocre as its music. Chicago still seems preoccupied with the concerns of college students during the Sixties. The results are embarrassing. In State of the Union, the band mulls over an antiestablishment voice that cries the following profundity: "Tear the system down." While the City Sleeps contains the following perceptive observation: "Men are scheming/New ways to kill us/And tell us dirty lies." In Dialogue, Robert Lamm and Terry Kath debate the merits of being an activist or a stoned freak. Then the group sings: "We can make it happen/We can change the world now/We can save the children/We can make it better."

All I can say is: "Ha! Ha!"

H.E.

Brady Bunch: Brady Bunch, vocals; Al Capps, arr. Day After Day; American Pie; Time to Change; nine more. Paramount 6032, $4.98.

The acting personnel of a children's TV show cannot be discussed in terms of their aggregate musical talent. It's silly. Say, instead, that the album is efficient. The six children sing every bit as well as your children do. They have the advantage of being supported by several professional studio singers, recorded so that they blend in and you won't know they're there, plus the arrangements of a first-rate man, Al Capps. All is brought together by knowing producer Jackie Mills. It is difficult to like or dislike them. The people who own the Brady Bunch want some of that Partridge Family money from records, but they haven't got a David Cassidy. As I said, it is an efficient package, like Kellogg's.

M.A.

Conway Twitty: I Can't Stop Loving You (Lost Her Love) On Our Last Date. Conway Twitty, vocals; strings, rhythm, and keyboard accompaniment. (Lost Her Love) On Our Last Date; Candy, Hoki To My Unchanging Love; eight more. Decca DL 75361, $4.98.

If country-and-western music is your first love, you won't have to be urged to purchase Conway Twitty's new release. He has come a long way since 1958 when he was an incipient Elvis who had a gold record entitled It's Only Make Believe. Twitty is now a highly polished country artist. The first side of this disc does suffer from repetition, but Twitty really succeeds on Side 2 with mournful versions of I Can't Stop Loving You and The Key's in the Mailbox. He also does some mighty fancy country rocking with White Lightning. Twitty should never have worried about the burden of his humdinger of a name.

H.E.

Without the indefatigable Mrs. Burrell the portrait of Wagner would be incomplete. Documents, letters and memorabilia presumed lost or destroyed found their way into her collection, thus providing a mass of materials Wagner and his heirs would have wished concealed.

No. 312... $17.50


A book for young people who play the violin, want to play it, or just want to know more about it.... informative and interesting, and I am certain it will fill a very useful niche in the children's libraries (adults' too)!—Yehudi Menuhin.

No. 313... $4.50


In this first authoritative, analytical study of the development of American popular song, composer Wilder traces its roots, illustrates its evolution through the innovations of its most brilliant composers, and focuses on the special qualities—verbal, melodic, harmonic, and rhythm—of these compositions that have distinguished this form of musical expression from that of other countries. Musical examples from more than 700 songs are included.

A serious—but engagingly accessible—book on a too-often patronized art form.

No. 288... $15.00


Haydn was "the first to work out the possibilities of the symphony and the sonata and to show what their special qualities are.... among the first to establish the orchestra as we know it." This book is an excellent introduction to the composer's life and work. The author is a world-renowned Haydn authority.

No. 2615... $6.95


There has been only praise from critics for this biography of Hadoru Duncan, certainly a great artist but also an extraordinary woman. It is hard to believe that almost a century has passed since her birth (1878-1927) as so much she fought for—and was maligned for—is relevant to 1972. She lived a rebellion against restrictions in her art and life. Seroeff, her last lover, is noted for his biographies of musicians.

No. 292... $10.00


An engaging exploration of musical culture and activity in the Soviet Union since the October Revolution, a half-century of accomplishments and immense suffering, and a crucial period for one of the world's most musically creative nations. As well as discussing the music Dr. Schwarz describes the many and varied institutions that foster and propagate it: the opera and ballet theaters, the orchestras, the libraries and museums of "musical culture," the conservatories and research institutes.

No. 262... $13.50

RECORDS IN REVIEW. 1972 EDITION

The 17th annual edition of this "bible for record collectors." Hundreds of the authoritative, detailed reviews which appeared in High Fidelity in 1971 are arranged alphabetically by composer, sub-divided by category of music when releases of his music were considerable. A section on Recitals and Miscellaneous too, and an Artists' Index to all performers reviewed during the year, as well as those mentioned only in the text.

285... $9.95


Most of the music world has been waiting for the publication of this book, known a half year ago because of the extensive press coverage of the controversy its announcement created. So here it is, another view of a great man in contrast to his public image created by other books of the last decade. Certain to be one of the most hotly discussed books of the season. It is also an intimate, affectionate and moving portrait.

Lilian Libman worked closely with Stravinsky from 1959 until his death on April 6, 1971. Her memoir draws upon thousands of letters and documents from those years.

No. 293... $9.95

THE BALLERINAS FROM THE COURT OF LOUIS XIV TO PAVALDVA. Parmenia Migei.

Balletomanes will treasure this beautifully illustrated portrait gallery. Three centuries of ballet are recounted through the careers, personalities, lives, and loves of all the great ballerinas from the 17th century to Diaghilev's dancers.

No. 2108... $10.95


The final volume of this monumental study by one of Britain's leading musicologists, eagerly awaited because of the great critical acclaim for the first two. The overworked word "definitive" is exact usage here. 350 Music Examples

VOLUME I (1864-1912) No. 269... $13.95

VOLUME II (1912-1932) No. 2611... $12.50

No. 311... $12.50

BESSIE. Chris Albertson. Illus. Index.

A timely book, written by the man who with John Hammond is principally responsible for the current revival of interest in "The Empress of the Blues," and based to a large extent on first-hand recollections of those who knew her intimately; a revealing portrait of a rare artist who was also a strong-willed, defiant, tough, intense, and promiscuous woman; a tragic life but one lived to the fullest.

No. 2119... $7.95

THE CLASSICAL STYLE: HAYDN, MOZART, BEETHOVEN. Charles Rosen.

Winner of the National Book Award for Arts and Letters. "The most ambitious and useful study of classical music of modern times."—Newsweek

No. 295... $12.50

THE RECORDINGS OF BEETHOVEN. As viewed by the Critics of High Fidelity.

To celebrate the Beethoven Bicentenary, High Fidelity published the most immense critical discography ever undertaken by any magazine, appraising every available recording of the composer's works. At the end of the year, these separate discographies were completely revised and updated and are here collected into one convenient book. It is hard to imagine any record collection without it on an adjacent shelf. Index to performers.

No. 2616... $6.95


Four decades of bands and bandleaders examined both in musical terms and in their social and economic context. Unlike previous histories, this includes the great English and European bands. Lists of selected recordings with each chapter.

No. 299... $10.00


In the past decade, the international art world has discovered the comic strip as a significant contemporary art form. Horn documents in his learned introduction the worldwide influence of Hogarth, named by French critics the "Michelangelo of the comic strip."

Now Hogarth presents a new pictorial version of the novel that inspired the original comic strip—completely redrawn for this handsome volume. A fascinating book and a marvelous gift for any generation.

No. 2014... $9.95
MEMPHIS SLIM: South Side Reunion. Memphis Slim, piano and vocals; Buddy Guy, guitar and vocals; Junior Wells, harmonica; A. C. Reed and Jimmy Conley, saxophones; Philip Guy, guitar; Ernest Johnson, bass; Roosevelt Shaw, drums. When Buddy Comes to Town; How Long Blues; Roll and Tumble; seven more. Warner Bros. 2646, $5.98.

Memphis Slim is a bridge between the blues singers of the Twenties, Thirties, and Forties and those who have adapted to the electric sounds of the Fifties, Sixties, and Seventies. He is a contemporary who was part of the earlier scene, who sings and plays piano with authority in that older style and yet sounds remarkably at home with an electric bluesman such as Buddy Guy.

Slim is the commanding and influential performer on this disc which is drenched in boogie-woogie variants. He has a big, virile voice that projects authority every which way and hence, it is used to emphasize the music qualities common to current blues singers. Buddy Guy complements him with a higher but less potent voice and with some electric guitar solos that balance Slim's rolling, forceful piano style. Junior Wells receives prominent billing but contributes relatively little for, instance, than A. C. Reed and Jimmy Conley whose saxophones add to the good-time jump quality of the ensemble that Slim has brought together for this recording. J.S.W.

BUCKY ZIPPIRELLI: Green Guitar Blues. Bucky Pizzarelli and Mary Pizzarelli, guitars; George DuVivier, bass; Don Lamond, drums. Tangerine; Bizzarre; Goodbye; twelve more. Monarch.

DON GIBSON GANG: The Al Capone Memorial Jazz Band. Nat Levy and Nap Trottier, trumpet; Bill Hanck or Jim Conley, trombone; John Topel, tenor saxophone; John Harker, clarinet; Don Gibson, piano; Ken Salvo or Charlie Marshall, banjo; Dick Carlucci, bass and tuba; Mike Schwimmer, washboard and vocals. Wayne Jones, drums. Aunt Higel's Blues; Chicago; 1919 Rag; seven more. Long Groove LS 1, $5.95 (Long Groove Records, P.O. Box 192, Deerfield, Ill. 60015).

The Chicago jazz world appears to be developing a new school of jazz based on, but not really copying, the old Chicago jazz of the Twenties. The new school has many of the same characteristics of the old one—the hell-for-leather ensemble playing, saxophonists who would rather be hot than right, echoes of Bix phrases and the Stacy-Hines style of piano, and many of the old tunes. But the players in the new Chicago movement have shown that they are not entirely welded to the old school, even though they haven't quite created an idiom that clearly defines their own playing.

Don Gibson's band—an amplification of a group that plays in Long Grove, Ill.—is one of the better and most creative of the new Chicago school, and the reason for its expressiveness is unusual. It has a great rhythm section, an area which is more often than not, the principal downfall of contemporary bands playing in the traditional vein. Gibson uses a five-piece rhythm section anchored in the strong, steady drumming of Wayne Jones (who is at the heart of a great deal of the new Chicago jazz), strongly supported by Ken Salvo's banjo (or occasionally Charlie Marshall's), and the bass and tuba (particularly the tuba) of Dick Carlucci. Gibson adds piano chops. Mike Schwimmer plays a washtub that is felt more than heard (the best balance for a washtub!), also sings with assurance and spirit. Schwimmer's vocals give the group another plus over most of its contemporaries, whose singers usually sound like country club cut-ups on their fifteenth beer. With this foundation, the fact that the horn men are terrific soloists is not all that important.

The ensemble has a perfectly eruptive fire for a Chicago group, but the solos are some robust, Teagarden-tinged choruses on trombone, while Nap Trottier and Ned Lyke rise to some of their occasions on trumpet. John Topel, the group's tenor saxophonist, manages to sound different on every selection, thanks partly to a recording balance that sometimes puts him out in left field or sometimes brings him up front, and a style that can be pure Emmanuel Paul/New Orleans at one moment and whirling Chicago drive in the manner of Boyce Brown and Bud Freeman at another. Note particularly a rugged waltz version of Sometime and a Yuma Yuma Man that could stand as the perfect illustration of the relationship of the New Chicago school to the old. J.S.W.

HENRY VII AND HIS SIX WIVES. MUSIC from the Motion Picture. Henry VII and His Six Wives. Book One; Book Two; The Court of Henry VII; How Tudor Spain Ruled England; Ten Hours; nine more. Halcyon 106, $5.98 (Halcyon Records, Box 4255 Grand Central Station, New York, N. Y. 10017).

Possibly because they are, by nature, such individualists, jazz pianists have rarely played duos. Certainly there are no piano duos comparable to say, Whitemore and Lowe, Ohman and Arden, or Vronsky and Balbin. The only piano pairing that lasted for any period of time was the dual boogie-woogie-ing of Meade Lux Lewis and Albert Ammons when they were playing at Cafe Society in New York in the early Forties—but they were just as apt to be a trio with the addition of Pete Johnson, who also played at the club in those days. Duke Ellington and Billy Strayhorn played together at times but they really performed as sequential soloists, a real game of musical chairs. So it's a remarkable occasion when two pianists of the stature of Teddy Wilson and Marian McPartland are paired together for half a disc (they share solos on the remainder).

They try a little bit of everything here—a blues, a bossa nova, a jazz waltz, and a couple of standards. Both pianists manage to be mutually supportive: they avoid stepping on each other's toes, and create generally valid performances. In the process, however, some of the distinctive qualities of each pianist are subordinated; on a one-shot basis, such as this, it is a little much to expect a new duo personality to appear. Even dealing with the familiar and basic elements of a blues, their joint performance is filled with fresh and stimulating insights. And the presence of Mrs. McPartland helps lift Teddy Wilson out of his standard run-through on a too well-worn part of his solo repertory. Just One of Those Things—a refreshingly change. J.S.W.
As you probably know, Revox has always received the highest praise from the experts. And by now, we almost take it for granted.

But even if we were bowled over by the unabashed declaration of love we received from audio editor Michael Marcus writing in Rolling Stone. In fact, we were so pleased that we'd like to share our pleasure with you. Herewith, Mr. Marcus' comments in their entirety.

The Top “Semi-Pro” Tape Deck

If you get turned on by big bridges, German cars, Swiss watches, Leica cameras, and computers, if you had three Erector sets at the same time as a kid, if you shadowed the TV repairman and the plumber when they worked in your house, if you just know they're going to bury you with a screwdriver tucked into your shroud, a Revox tape deck would make you very, very happy.

And if you are a music maker or music listener besides, a Revox would make you *** ecstatic!

The Revox A77 Dolbyized deck sells for $969, and can make recordings with sound equal to million-dollar studios. It is compact enough to strap on the back of a motorcycle, and rugged enough to survive a crash. It either contains or may be combined with every imaginable feature and accessory, and is as fool-proof and easy to operate as any recorder I know of.

My tests, and reports in the hi-fi ads, back up Revox's claim that this is truly the top performing "semi-pro" tape deck available. Technical performance characteristics have seldom, if ever, been bettered by any other home machine: wide, flat frequency response; extremely low distortion; perfect speed; imperceptible wow and flutter; and noise level, even without the Dolby circuits, that matches the best studio equipment.

With the Dolby noise reduction circuits operating, the A77 is so quiet it's scary. This machine really provides sound reproduction! No person for whom I demonstrated the recorder could distinguish between live and recorded sound in A-B tests. For decades hi-fi ads have been bullshitting about "concert hall realism." The Revox really achieves it.

From across the room you could mistake it for an old $199 Radio Shack clunker: It has none of the carefully cultivated "professional" look found on current popular Japanese tape machines. But it has everything: ten-inch professional size reel capacity for hours of taping without flipping over the reels, Dolby circuits so you can use low tape speeds without sacrificing quality, saving tape expense and further reel-flipping; three-motor transport with electronic speed control, push-button solenoid operation with provision for remote control; spring clips built into the reel spindles to hold the tape on in any position without bothering with rubber clamps; different tape tension for each speed and reel size; safety record buttons with red signal lights for each channel; and automatic shutoff.

And individual input selection for each channel; internal track transfer; front and rear panel jacks for either high or low impedance micros; stereo, single-channel, or merged mono output modes; output volume and balance controls; and a Dolby calibration tone generator that lets you get the noise reduction circuitry working in two seconds.

And there's a lever that pushes the tape against the heads with the motors off for editing; a high frequency filter to prevent interference from FM station multiplex signals, and a headphone jack.

Inside the machine is where the technofreaks will really get off. Rigid girders, heavy metal plates, big Pabst motors, carefully routed wiring, beautiful plug-in circuit boards, fancy connectors, the works. Everything NASA quality; built for quiet, smooth operation and long life. It's obviously a machine that should last as long as you do, and Revox guarantees it to; and from looking it over, it doesn't seem like they're going to spend much money making good on their pledge. A few parts that come in contact with moving tape (heads, pressure roller, and capstan) are only guaranteed for one year; but the heads are the big-radius professional type that should be good for many years of normal use, and roller and capstan sleeve are cheap and easy to replace.

If you can't afford the full $969, the A77 is available without the Dolby circuits for about $200 less, and if you only plan to dub from records or radio, or record loud rock music, you may as well save the bread. Other formats and options are also available, including built-in playback amps and speakers, rack mounting, variable speed, half-track operation, 15 ips speed, selsync, and on and on and on.

I have a few bitches about the machine: the braking is slow; the meters are a bit small; and the photo-cell tape shutoff can be annoyingly activated by white leader tape spliced between tape sections; but I manage. I have really gotten to love the Revox A77 Dolby B. I know of nothing better.
in brief

AN EVENING WITH RICHARD NIXON, by Gore Vidal. Ode 77015, $5.98. Very cute, very fey, very tricky, very Gore Vidal. Take your chances. M.A.

SILVERHEAD. Signpost SP 8407, $5.98. Silverhead's lead singer is a young marquis named Michael Des Barres who is another in the collection of campy fops England has been sending us this season. The marquis and his hand are a hard rock ensemble. They are probably much more effective in person where the marquis has a chance to display his extravagant wardrobe and elaborate make-up job.

TRAVIS WAMMACK. Fame 1801, $5.98. A strong country-type singer who is held back by the fact that he does not write his own material. Produced by Rick Hall in Muscle Shoals. Definitely worth listening to.

THE HOODOO RHYTHM DEVILS: The Barbecue of DeVille. Blue Thumb BTS 42, $5.98. A rock group with a hoarse lead vocalist and a background in blues and rock-and-roll. They sound as if they might be exciting in person, but on record they're just another reason to turn down the volume.

DR. SEUSS PRESENTS FAVORITE CHILDREN'S STORIES. Camden CXS 9029, $2.49. Consider this a public service announcement. Here comes Dr. Seuss again. Includes journeys with the Sneetches. Yertle the Turtle. Here comes Dr. Seuss again. Includes journeys with the Sneetches. Yertle the Turtle. Consider this a public service announcement. Here comes Dr. Seuss again. Includes journeys with the Sneetches. Yertle the Turtle. Here comes Dr. Seuss again. Includes journeys with the Sneetches. Yertle the Turtle.

MISS ABRAMS AND THE STRAWBERRY POINT FOURTH GRADE CLASS. Reprise 2098, $5.98. A sweet album of songs by a young school teacher and her classroom singers. One of them, Mill Valley, has been successful and is included here.

THE PERSUASIONS: Spread the Word. Capitol ST 11101, $5.98. More inspired vocalizing from one of America's most likable a cappella groups.

CRUSADERS. Chisa 6001, $5.98. Originally a jazz group out of Texas, the Crusaders have reformed their membership and recomposed viewpoints. This is their best album, including a track on its way to being a hit: Put It Where You Want It by group pianist Joe Sample.
Hubris: Mahler's Impossible Dream.

One's biases undeniably tend to slant ever more steeply as one grows older: yet in the realm of musical experience this tendency sometimes can be arrested, or even reversed, by exceptionally potent recorded performances. Only recently, a prejudiced conviction of my own (that Tauskrause was an irredeemably dull opera) yielded to the combined persuasiveness of Solti's interpretative eloquence and London's most thrilling engineering. So this month I almost hoped that the same combination might release me from an even stronger musical antagonism—but in the case of Mahler's Symphony of a Thousand, my old objections are in some ways confirmed rather than contradicted by the grandeur of the Solti version and only softened a bit by the more modest persuasions of Haitink in a simultaneous reel release from Philips.

Although I'm usually a pro-rather than anti-Mahlerian, his gargantuan Eighth Symphony always has struck me as a classic example of overwhelming ambition, an attempt to lift oneself into Heaven by one's own bootstraps, a foolhardy challenge to Fate that the ancient Greeks named hubris. Often this madness is so superhuman that some observers, awed by the act itself, refuse to deny it success—or at worst esteem it as a "magnificent failure." (Beethoven's Ninth is an example some of us might cite.) So for many listeners the sheer loftiness of Mahler's aims in his Eighth may obscure the hard fact that his heavenshorming remains tragically earthbound, never really "coming off" in the concert hall, much less in recordings.

In any case, it is true that technological advances enable the two latest Eighths in stereo (with quadraphonic editions still to come) to argue their own cases more eloquently than any previous versions. They are London/Ampex K 90211 and Philips/Ampex K 7049, each a double-play 7½-ips reel, $11.95. The more dramatic reading and more spectacular sonics are those of the former, the Solti version, with international soloists, Vienne choruses, and the Chicago Symphony Orchestra. Yet while its rival, conducted by Haitink with international soloists, Amsterdam choruses, and Concertgebouw Orchestra, has markedly less sonic breadth, impact, and presence, the completely natural, more distant, large-auditorium recording and still more its restrained, gentler, and even (where possible) intimate reading poignantly enhance one's sympathy for the composer's attempt to realize his truly impossible dream. Hence, while I must recommend the Solti version first to audiophiles and to all those who find unalloyed grandeur where I find grandiosity, it's the Haitink version that's more likely to soften the hearts of those who condemn Mahler's hubris for attempting more than he—or any composer—can possibly achieve.

"Of Battles Long Ago." There hardly could be a worse time than the present for the appearance of any recorded war documentary, so it should be stressed that Frederick Fennell's great evocation of The Civil War: Its Music and Its Sounds was planned for and first released (in two double-disc volumes) during the centenary celebrations of the early 1960s. When it was finally brought to tape only recently, I passed it over initially for review consideration. But after checking back on the original disc reviews I began to suspect that I was missing something exceptional in the way of incomparable sonic, as well as martial, value—a suspicion immediately confirmed when I began listening to the tape leased (Mercury/Ampex L 901/2, two double-play 7½-ips reels, $7.95 each).

What we have here is a revitalization of the music sung and played on both sides of the Mason and Dixon line during the war years—music recorded in its original scorings and on period band instruments, which are also heard in representative field music (bugle and drum calls) of both armies. There are in addition sixty-page illustrated booklets of scholarly annotations. All these attractions are so fascinating in themselves as well as for their historical importance that one can well afford to skip over the last quarter of each reel devoted to narrated battle re-enactments exploiting authentic cannon and musket fire. These "Sounds of Conflict" now seem of limited interest in comparison with the wealth of musical appeals predominating elsewhere in these documentaries.

The Other Manon. Puccini's first real hit, Manon Lescaut, has been doubly handicapped on the stage by the ever greater popularity of his later triumphs and (outside Italy) by the competition of Massenet's earlier operatic version of the same Preveost story. On tape it's been unlucky too: the sole complete version—London's of 1964 starring Tebaldi—actually was recorded nearly a decade earlier and currently is out of print (except for a single reel of highlights). But not only does this ensure a warm welcome for Angel's new musicassette version (4XS 3782, two cassettes, boxed, $9.98; libretto on request), advance interest has been stimulated by the fact that its stars—Montserrat Caballe and Placido Domingo—gave a preview of its Act II duo in the recent Met Gala honoring Sir Rudolf Bing (recorded by Deutsche Grammophon). As might be expected Caballé sings entrancingly, and if conductor Bruno Bartoletti can't make the Ambrosian Chorus, New Philharmonia Orchestra, and the minor cast members sound idiomatic Italian, co-star Domingo is Italianate enough in his emoting and roaring to make up for that. Indeed, his robustness and the generally high modulation level of the recording effectively help to cover up most of the non-Dolbyized cassette surface noise.

Goodies, but Definitely Oldies. Reappearances of earlier, often years earlier, releases continue to figure largely among the "new" listings originating in this country—often enough a good rather than a bad thing in at least some respects, but a policy I can more readily approve when there is some cost saving than when there is none.

First mention, then, goes to a bargain double-play cassette edition (Columbia MGT 31418, $7.98; also a 7½-ips reel, MG 31418, at the same price) coupling Isaac Stern's famed 1960 performances of the Beethoven and Brahms Violin Concertos, with Bernstein and Ormandy respectively, in big-sound recordings which still stand up impressively well.

Second, if only because it represents less of a saving. is Arthur Freedler's Great Children's Favorites collection (RCA Red Seal RK/RSS 5076, double-play cassette and cartridge respectively, $9.95 each). Reissued here are the fine 1964 pairing of Saint-Saens's Carnival of the Animals with Britten's Young Person's Guide to the Orchestra (both with admirably straight narration by Hugh Downs); the very early stereo-age Tchaikovsky Nutcracker Suite; and, startlingly, a Prokofiev Peter and the Wolf with narration by Alec Guinness. What's startling here is that the only Freedler/Guinness Peter I know was recorded in 1952 (released in 1954)—and it certainly sounds like undoctored monophony here. But the sonics are amazingly good all the same, and since Guinness does a first-rate, completely unmannered job, unwary buyers may be deceived but they won't really be cheated.

The releases of the "Greatest" this and that continue on and on, but at full list prices I can give only qualified commendation to "Greatest Hits/The Violin," a couple of concerto movements and various popular encore pieces in polished virtuoso performances by Stern and Zukerman (Columbia MT/MA 31405, Dolbyized cassette/8-track cartridge, $6.98 each); "Greatest Hits/The Piano," familiar warhorse pieces in rather heavy-handed virtuoso performances by Entremont (Columbia MT/MA 31406); "Mahler's Greatest Hits" (RCA Red Seal RK/RSS 1206, double-play cassette and cartridge respectively, $6.95 each).
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