High Fidelity

THE MAGAZINE FOR MUSIC LISTENERS • OCTOBER • 60 CENTS

Tape or Disc?
by C. J. LeBel

The Operator
A keen look at Herbert von Karajan
by Paul Moor

BACH'S KEYBOARD MUSIC
a discography by Nathan Broder

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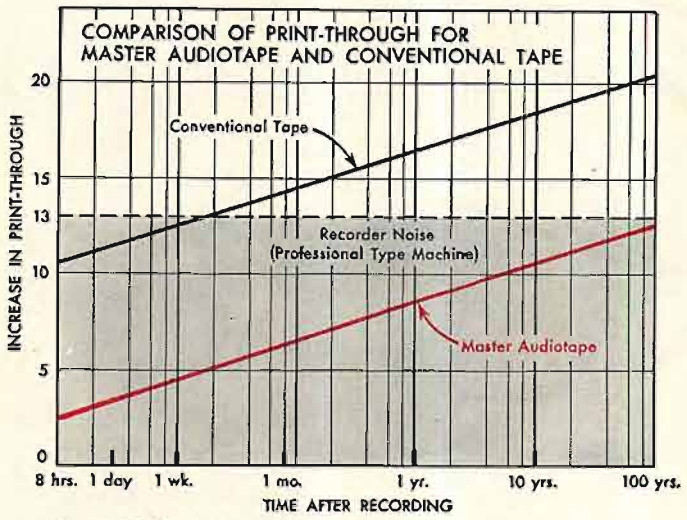

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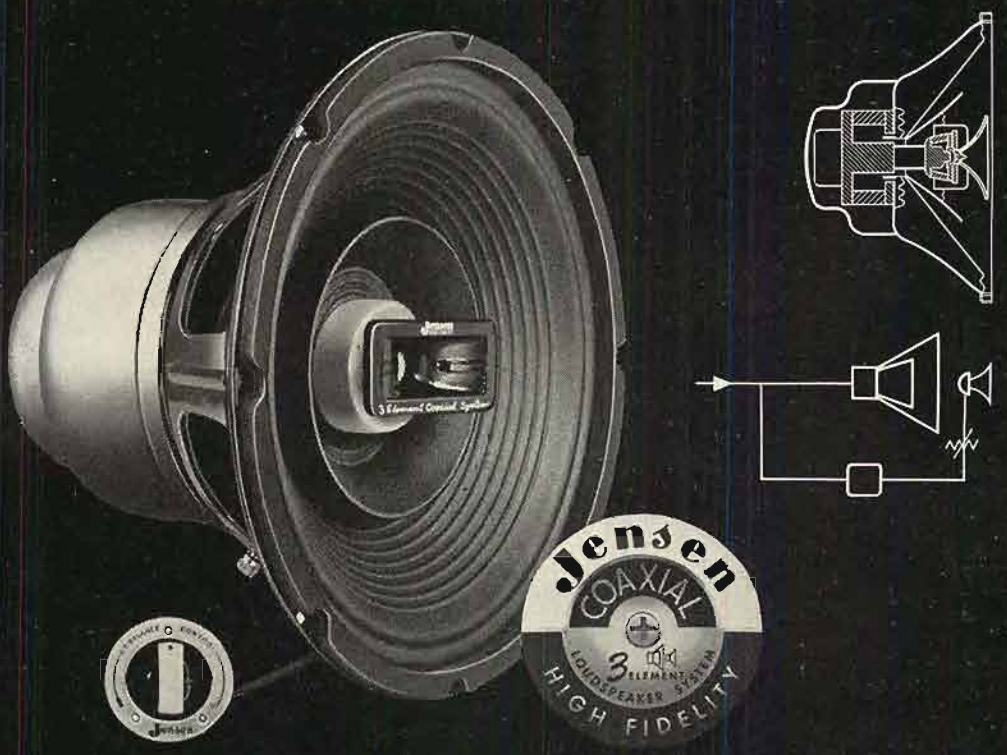

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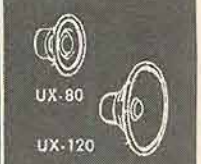

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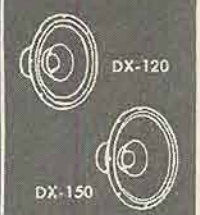

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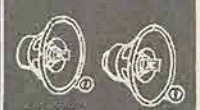

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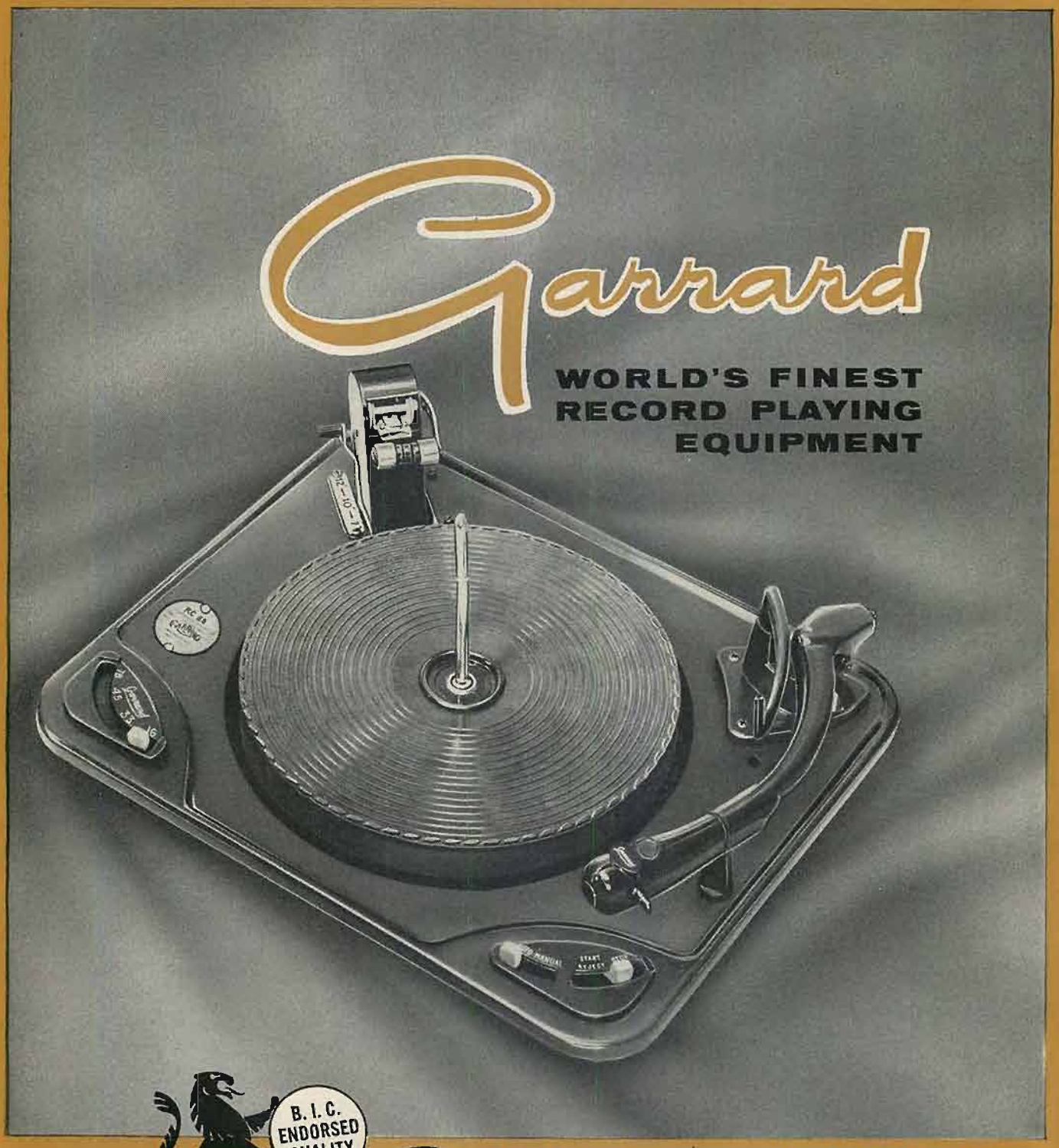

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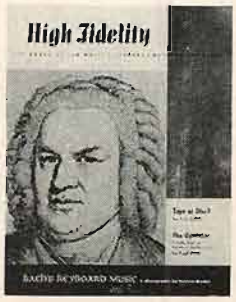

The cover engraving furnished by the Bettmann Archive, illustrates Nathan Broder's discography of Bach keyboard music.

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OCTOBER 1957

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AUTHORitatively Speaking

Paul Moor, whose analysis of the Karajan career begins on page 52, is a thirty-three-year-old, Texas-born musician, photographer, and writer. He began violin and piano lessons at nine, continued musical studies at the Juilliard School, the University of Mexico, and the University of Texas. Having secured his Bachelor of Music degree, however, he decided to become a writer. He began in the script department at RKO-Pathé, then free-lanced, placing articles with most leading magazines. He thinks he may be the only man who has been published both as a writer by the *New Yorker* and as a photographer by *Life* and *Look*. His photography began with tourist pictures he shot on a trip to Europe in 1949; by 1953 he was a member of Magnum Photos, the co-operative founded by Robert Capa and Henri Cartier-Bresson. He once read *Moby Dick* while aboard a whaler in the Norwegian Arctic.

C. J. LeBel, who balances tape against disc on page 56, is a man obviously well suited to this task, since he is vice-president of Audio Devices, Inc., a company which produces both tapes and discs. He holds S.B. and S.M. degrees in electrical engineering from Massachusetts Institute of Technology. After research jobs with two tube companies, Raytheon and Sylvania, he became a consultant in audio in the late 1920s, specializing in wax and film recording. He joined Audio Devices as chief engineer at its founding in 1938, and when the Audio Engineering Society was organized he became its first president (he's been its secretary ever since). Although he was reared on classical music, and studied trumpet under Edwin Franko Goldman, he has vacationed in the Massachusetts Berkshires every summer for twenty years without going once to Tanglewood.

John Pfeiffer, chronicler of Vladimir Horowitz's Manhattan holiday (page 59), is musical director of RCA Victor's Red Seal division. He was born and mostly educated in Arizona, receiving from the University of Arizona his musical training and a degree in electrical engineering, a combination which naturally landed him with RCA Victor in 1949. To begin with he was design engineer, but within a year he was transferred to the Artists and Repertoire department, where he has lived happily ever after.

Jacques de Menasce, the not uncritical Shavian of pages 62-63, is an Austrian-born American composer and pianist (he can be heard as both on Vanguard 442). He studied composition under Berg, among others, but his music rather resembles late Bartók. He has been active in the League of Composers and other groups devoted to the advancement of modern music.

Otto Mayer-Serra, who cased the Deutsche Grammophon Gesellschaft for us while touring Germany last spring, didn't send in his biographical data early enough for this column. We know he is editor of Mexico City's record magazine 33⅓, and there our Mayer-Serra lore comes to an end. For DGG see page 64.

Five reasons why every music lover should join the Columbia (LP) Record Club

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5. The Great Melodies of Tchaikovsky Philadelphia Orch., Ormandy, conductor. 8 memorable selections.
6. Moonlight Becomes You Here's mood music in Hi-Fi — Paul Weston and his Music from Hollywood. 12 songs.
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10. Rimsky-Korsakov: Scheherazade Philadelphia Orch., Ormandy, conductor. A superb performance of this exotic score.
11. Music of Jerome Kern Andre Kostelanetz and his Orchestra play 20 Kern favorites.
12. Concert by the Sea Erroll Garner in an actual jazz performance at Carmel, Calif. *Teach Me Tonight, Where or When, I'll Remember April* — 8 more.

PA-1

DO YOU HEAR A DIFFERENCE IN LOUDSPEAKERS?

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The different characteristics of loudspeakers are due to different kinds and amounts of distortion. The most desirable loudspeaker would be one which had absolutely no distinctive character about it. The only way to achieve such a loudspeaker is to reduce all forms of distortion to a minimum.

One form of distortion is harmonic distortion. This occurs primarily at low frequencies, where the cone must make large excursions. Harmonic distortion is caused by non-linearity in the restoring force of the mechanical suspension during these large excursions.

Another form of distortion occurs when certain of the lower frequencies are exaggerated or when the whole bass spectrum is either depressed or accentuated. Distortion of this type appears when an improper choice is made of the acoustical, electrical and mechanical parameters with the result that the combined system of loudspeaker, enclosure and amplifier output stage does not have equal efficiency at all frequencies.

A third form of distortion results from frequency irregularity in the mid-range. This is usually caused by erratic vibrations of the cone or by improper matching of the frequency response characteristics of two or more loudspeakers designed to cover different ranges.

Despite the strong tendency for these forms of distortion to occur, KLH was convinced that a sufficient concentration of talent, experience and equipment, used in a properly oriented program, could devise a way to consistently produce loudspeakers in which not just one but all of these forms of distortion are reduced substantially below the level heretofore found in the best available loudspeakers. The successful completion of such a program has resulted in the production of KLH Models One, Two, and Three, speaker systems designed to cover low- and mid-range frequencies.

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KLH has announced the production of three new SPEAKER SYSTEMS, ranging in price from $159 to $378.

Jerrold multi-set COUPLERS permit attaching two to four television sets to one antenna; they can be used also for a TV-FM combination. Prices: $3.50 to $5.75. Note that there are models for strong signal areas and others for fringe area reception.

Pilot offers, without charge, a 16-page BOOKLET explaining what high fidelity is all about.

Charles Boegli has designed a de luxe TONE ARM for Intersearch. It is viscous damped; plays up to 16-inch records; costs $22.95.

Radio Craftsmen has incorporated its Xophonic principle into a new CONSOLE which features, in addition, a complete amplifier, four speakers, equalized preamplifier, FM-AM tuner, four-speed record changer, and an extra-speaker switch. Price is $399.95.

Minnesota Mining and Manufacturing's new No. 131 TAPE features low print-through. It is stated that the tape's "print" tendency has been reduced by 8 db.

The Lafayette KT-400 is a POWER AMPLIFIER kit which will, for $69.50, build you an amplifier rated at 70 watts continuously, 80 watts momentarily, and 160 watts peak. Frequency response is 10 to 100,000 cps ±1 db at 1 watt. IM distortion is below 0.3% at 30 watts, 1.0% at 60 watts, and 1.5% at 70 watts. The amplifier provides variable damping factor, meter for bias adjust and balance adjust, and many other features. It also is available completely wired, for $94.50.

Continued on page 8

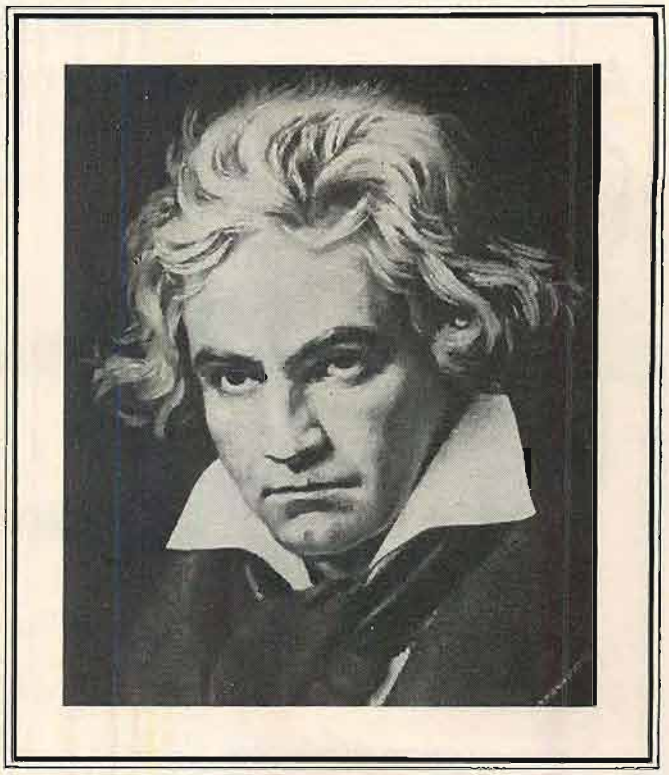
What was his philosophy?

"BEETHOVEN never failed to say Yes to life," wrote Howard Taubman, music critic of *The New York Times*, "and the *Ninth Symphony* is his most glorious affirmation. He had walked through the dark valley of despair from the time in his early thirties when he knew that he, of all people, a musician, was beginning to lose his hearing. He had put his agony into words in 1802, when he wrote a testament... in which he spoke of suicide and said farewell to his relatives and friends. But the deepest source of his nature had been a will to live and a determination to 'seize fate by the throat,' and from that source came his music."

THE CONSENSUS among musicians is that the *Ninth Symphony* represents Beethoven's "final passionate testament of faith." What was – what *is* – that testament? Just how did he go about presenting it in musical terms?

A RECENT RELEASE of *Music-Appreciation Records* gives a moving explanation of this glorious work. It is done by *Thomas Scherman*, distinguished young conductor who is the musical director of *Music-Appreciation Records*. He shows how the first movement presents and develops "the sense of doom and despair, inspired by Man's helplessness before a vast and blind fate," and then how Beethoven wins through ultimately to a joyous, even ecstatic, acceptance of life. In the last movement, most interestingly, he unmistakably rejects all other philosophies. No matter how much one is stirred emotionally by this great music, plainly Beethoven's message is lost without basic guidance such as this.

THIS SORT of illumination about the great musical works in our heritage is the sensible idea behind *Music-Appreciation Records*. On one record there is a full uninterrupted performance; then on another (available when the subscriber wants it) are what amount to "musically illustrated program notes," which make clear all the salient aspects of the composition.



THIS DOUBLE-DISC recording of Beethoven's *Ninth Symphony* is such an excellent example of the value of *Music-Appreciation Records* to all music-lovers (young and old) that we shall be happy to send you both the records (in a double sleeve) WITHOUT CHARGE, if you agree to order two other selections during the next twelve months from at least fifteen that will be made available. You may cancel the trial subscription any time after buying two selections.

THE REGULAR PRICE of these paired records, in a double sleeve, is $3.90. A different work is announced in advance each month, described interestingly by DEEMS TAYLOR. As a subscriber you take only those you are sure you want for your record library.

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ON THE COUNTER

Continued from page 6

Lafayette also has announced a binaural TUNER; it has separate FM and AM sections and claims full limiting on signals as low as 1 μv. Available as a kit for $64.50 or fully wired for $99.50.

ORRadio Industries' new 5¾-inch TAPE REEL features a large 2¼-inch hub, the same as on 7-inch reels. Thus tension between a 5¾ and a 7-inch reel is equalized; further, the new reel is easier to load.

Viking of Minneapolis now has CASES for the tape deck (#400) and the preamp (#401). $14 for the former, $7.50 for the latter; both made of metal, attractively styled.

The Intersearch I/S-3 TURNTABLE features: 4 speeds, neon stroboscope, magnetic speed adjustment, built-in level, wow and flutter of less than 0.2%, and a price of $65.

Beam-Echo of England "invaded" the United States recently with a complete line of COMPONENTS. Included are: PL6 21-watt preamp and power amplifier which has four inputs, three equalization positions, separate bass and treble tone controls, tape playback equalization for 3¾ and 7½ ips to CCIR standards, loudness compensator, high and low frequency filters; frequency response ±½ db 20 to 20,000 cps, IM (40 and 10,000 cps 4:1) 1% at 10 watts (Note: this is better than it looks; the British measure IM differently); price is $149.95. The PL12 is a double PL6: a twin-channel stereophonic amplifier; $239.95. The AF9 is an FM-AM tuner; two controls (tuning and selector); tuning eye; FM straight and FM-AFC; double limiter; sensitivity 2 μv for 20 db of quieting; price $149.95. Several other items were announced but detailed specifications were not available at press time; included were a corner and a square speaker system, using a 12-inch woofer and tweeter, priced at $195.95 and $185.95, respectively; a tape deck, for stereo playback at $150.95 and for stereo record as well as playback, for $225.95; also several other amplifier and preamplifier arrangements.

Notes FROM Abroad

LONDON — Arthur Benjamin's *A Tale of Two Cities*, which has had its world première at Sadler's Wells, is an unabashedly romantic blood-and-thunder opera, with emphasis on the blood. Salome, in Covent Garden at any rate, keeps her choice head decently covered with a dishcloth, but Benjamin's Paris mob openly gloat over two freshly severed heads on poles. Dickens, who wrote the book, Cedric Cliffe, who wrote the libretto, and Benjamin himself are all opportunists who lose no chance to titillate the emotions of their audience. Purist critics would disapprove, but the house loved it all; and no wonder, for Benjamin and Cliffe have calculated and timed with Giordano-like skill. A sound operatic triangle — soprano, tenor, baritone — underpins the action, as in *Andrea Chénier*, besides which there is the splendidly sinister figure of Mme. Defarge, knitting as the guillotine blade falls and breaking forth with her terrific revelation in the Trial Scene.

There is room in the world for all kinds of opera; and this neo-Italianate one, presented by the enterprising New Opera Company — based on the Cambridge University Opera Group and stiffened with professionals — found a warm welcome. Ruth Packer created Mme. Defarge, and Heddle Nash broke his retirement to reappear, touchingly, as Dr. Manette. It also was the New Opera Company and its fine, young conductor Leon Lovett that brought a deft and lyrical performance of *The Rake's Progress* to the city of its setting for the first time.

Covent Garden's plans include a fall opening with a new *Aida*, sung by a resident company (Amy Shuard, Jon Vickers) plus Fedora Barbieri under Raphael Kubelik; the British première of Poulenc's *Carmelites*, using the San Francisco translation; and — around

Continued on next page

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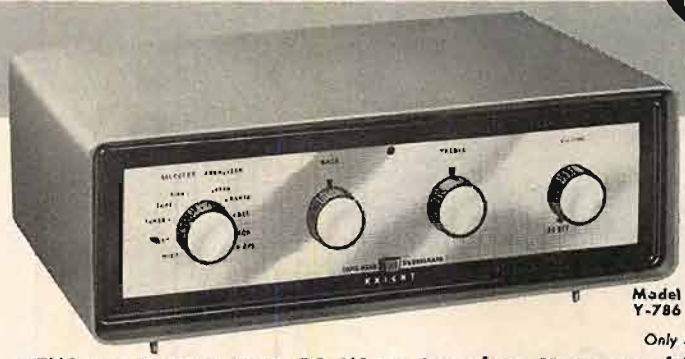

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Here's easiest-to-build hi-fi at a price that defies comparison. Features 8 inputs for every possible signal source, including NARTB equalized tape head input. Response is ± 1 db, 20-30,000 cps. At full 18 watts output, distortion is only 0.5%. Tape head and magnetic cartridge sensitivity, 5 microvolts. Uses new RCA 6973 output tubes. Output: 4, 8 or 16 ohms. Full equalization for all records; separate Bass and Treble controls. Beautiful custom-styled case, 4 x 13 x 8". Ready for easy, money-saving assembly. Shpg. wt., 15 lbs.

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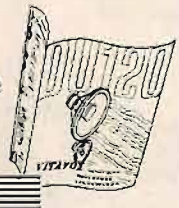

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NOTES FROM ABROAD

Continued from preceding page

about the time when the present house celebrates its centenary, on May 15, 1958 — a new *Don Carlos*, with Shuard, Barbieri, Vickers, and Christoff, produced by Luchino Visconti and conducted by Carlo Maria Giulini. Mr. Webster, General Administrator, has preserved an ominous silence about baritones. By centenary time, the Covent Garden company also should have made, under Decca's auspices, its first recording, a revival of *Peter Grimes*, conducted by Kubelik.

Pounds & Pence. Record prices have gone up recently, settling at around 40s. (rather over $6.00) for a 12-inch "classical" LP. To be precise, HMV, Columbia, Capitol, and Deutsche Grammophon sell at 41s. 8½d., Philips and Vox at 41s. 9d. Westminster and the Decca-London group records are now the cheapest of all, at 39s. 11½d. Forty per cent of this price represents purchase tax levied by the Chancellor of the Exchequer. Why, in a country where books and magazines are not taxed and the entertainment tax has just been taken off the theatre, we don't make more fuss about this enormous tax on records, I don't profess to understand. The Exchequer even expects record companies to pay this purchase tax on every review pressing sent out, which can hardly be said to be "purchased." Still, this makes the companies cast a keen eye over their free lists — probably a good thing.

The difference of the few pence in cost probably doesn't turn people to Decca and Westminster rather than other makes. Philips, on the other hand, have two attractive ways of making their records cost less. They offer in 10-inch format several works that other companies issue in 12-inch discs, and all their older recordings are put out on a cheaper label. The Bruno Walter, New York Philharmonic-Symphony version of Mahler's Fourth Symphony, for example, has just turned up on the "NBL" label (35s. 9½d.), and in this bargain version sounds marvellously much better than ever it did in the Columbia issue. The same applies with Beecham's account of Goldmark's *Rustic Wedding* Symphony. EMI still have a "plum-label" category, but use it fairly seldom for serious music; while Decca and their associates evidently believe

Continued on page 14

Removes all static and dust while record is played; new moving coil microphones and transistor amplifier

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The automatic record cleaner

The problems of dust, lint, and static buildup on phonograph records and pickup styli have been solved by this ingenious new invention which cleans the record as it is being played. The plush pad is slightly moistened with special, harmless activating fluid supplied in a replaceable applicator. This helps to loosen groove dust and dirt, which is then collected by the pad. It also neutralizes the static charge present in all records. Every point on an LP record is cleaned by the wide pad approximately one hundred times during a single play.

ESL Dust Bug, complete with Dust Bug Fluid in applicator **$5.75**

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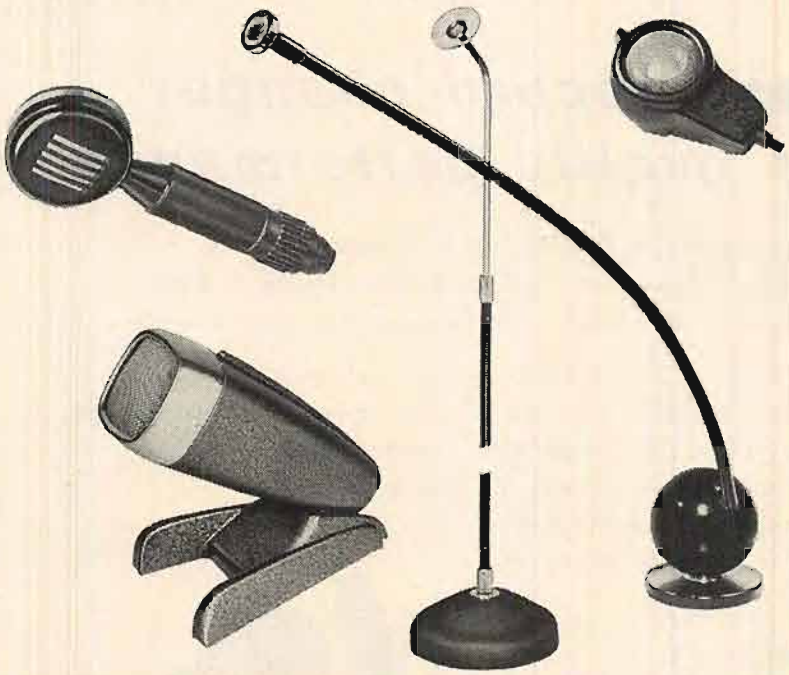

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A brochure describing the entire line of ESL moving coil microphones and accessories is available free upon request.

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Hum-free low impedance amplification

This hum-free, low-distortion amplifier can provide improved performance with moving coil microphones, for which it is a preamplifier, and with ESL electrodynamic cartridges, for which it is a pre-preamplifier. As its frequency response is flat and unequalized, it does not replace the conventional phono preamplifier. It permits use of greatly superior low-impedance microphones—such as the ESL—with medium-price tape recorders.

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The new GS Seventy Seven is as modern as automation. To see one in operation is a revelation. Smooth, gentle, precise — it performs with an almost uncanny intelligence. Here, at last, is the automatic record changer with turntable quality performance.

Examine and appraise its features — observe its appearance, its distinctive styling — then give the GS Seventy Seven your own most critical performance test — at your hi-fi dealer.

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new, exclusive GS Seventy Seven feature
automatically selects correct turntable speed –
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'SPEEDMINDER'*

You simply set the indicator in 'SPEEDMINDER' position and automation takes over . . .

★ *with the standard groove stylus in play position, changer automatically operates at 78rpm.*

★ *with the microgroove stylus in position, changer automatically operates at 33 and 45rpm and . . . automatically intermixes and plays 33 and 45rpm records without regard to size or sequence.*

the new GS Seventy Seven† also offers you:

added record protection
Turntable pauses during change cycle. Resumes motion only after next record has come into play position and stylus is in lead-in groove of record. Eliminates record surface wear caused by grinding action of record dropping on moving disc — a common drawback of other record changers.

fastest change cycle
Duration of change cycle is only 5 seconds — fastest in the field.

damped, acoustically isolated arm
Shock suspension prevents vibration feedback through arm pivot. Resonance is negligible.

dynamically balanced arm
Has easily accessible vernier adjustment for stylus pressure. Stylus pressure ranges from feather-light to pressure necessary to utilize the best characteristics of any individual cartridge. Variation of stylus pressure between first and tenth record on table is less than 1 gram — lowest in the field.

arm has finger lift
Offers transcription-arm convenience. Permits manual raising and lowering of arm without stylus skidding across grooves.

arm has stylus position guide
V-shaped cut in arm head and raised indicator simplify placement of stylus in manual operation.

finger lift for 45rpm singles
Molded rubber mat slightly raises 45rpm record to permit easy removal from table. Mat designed to provide maximum traction with minimum mat-to-record surface contact.

foolproof, jamproof and trouble-free
Idler automatically disengages in 'off' position to prevent 'flat' spots. Arm movement may be restricted during change cycle without damage. Arm may be manually relocated on record during automatic play without tripping change cycle. Changer shuts off automatically after last record. May be wired to shut off amplifier, as well.

other GS Seventy Seven features include:
- Automatic *and* manual operation at all four speeds: 16, 33, 45 and 78rpm
- Automatically intermixes and plays all size records at any selected speed without regard to sequence
- Muting switch and R/C network maintain silence at all times except when record is being played
- 4-pole, hum shielded motor with balanced rotor for smooth, constant speed, shock mounted
- Single knob control sets all operations

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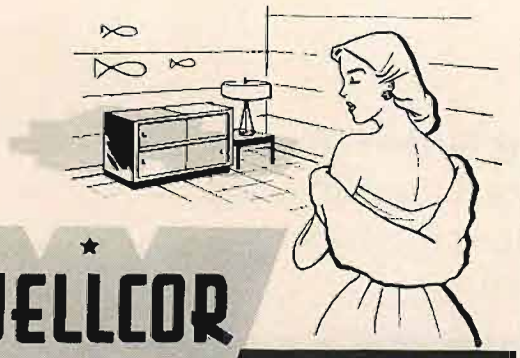

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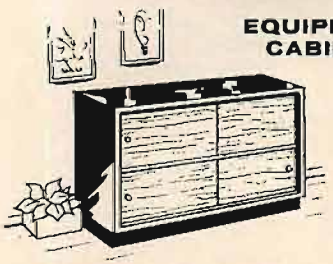

Accommodates turntable-changer tuner, amplifier, recorder, storage.

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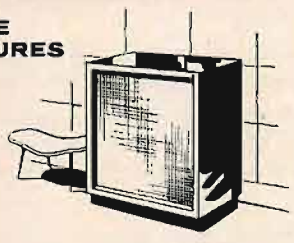

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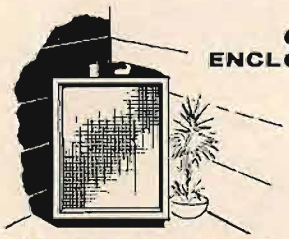

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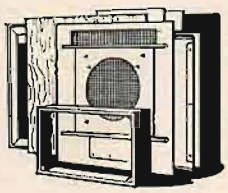

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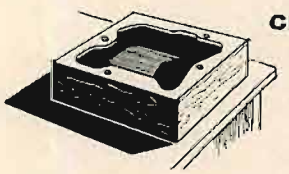

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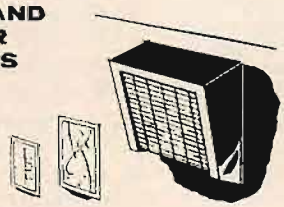

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NOTES FROM ABROAD

Continued from page 10

that all their classical performers rate red-seal celebrity pricing.

Mighty Voices. The tapes of the *Walküre* Act III, with Flagstad, Edelmann, and Marianne Schech, reached London in midsummer. "This to an ordinary record is like CinemaScope to a early silent film," "Only Toscanini could get an orchestra to play in the way that Solti does," are some of the milder comments. Strong engineers are moved to tears. I wish I could have given you a first-hand report. Flagstad is on record as having said that Edelmann is vocally the greatest Wotan she has ever sung with, including Friedrich Schorr. Decca's next Viennese assignment is to record *Elektra* with the Salzburg Festival cast; Inge Borkh, Lisa della Casa (!), Jean Madeira, conductor Mitropoulos.

The RCA-Decca alliance has already borne fruit in the cast of the *Gioconda*, which RCA began to record in Rome the week after Decca had finished with theirs in Florence. RCA's cast includes Milanov, Di Stefano (Decca artist), and Warren; Decca's has Cerquetti, Del Monaco, and Siepi. Milanov had a mixed reception recently with her Covent Garden Toscas and *Trovatore* Leonoras: your correspondent felt simple fury with those who, instead of marvelling at her serene, noble performances, matchless today in point of vocal style, preferred to mind that she has not the voice of a young woman. Kurt Baum's reception, as Manrico, was unmixed, and unfavourable. Franco Corelli and Giangiacomo Guelfi both made big-voiced London debuts in *Tosca*.

Experts are still working out the implications of our new copyright laws, but one thing that seems certain is that discs over fifty years old are now anyone's property — which means that pretty soon the whole of Bauer will be open to reissue. A Manchester firm, Belcantodisc, has already taken advantage of this in an attractive little eight-inch 45 of four Fonotipia sides: *"A te o cara"* and *"Spirito gentil,"* which represent just about the very best of Bonci, and Anselmi's *"O mia Marcella"* (Giordano's *Marcella*) and *"Come al sol coccente"* (Paderewski's *Manru*). These are evidently taken from originals in a beautiful state — and how marvellously well Fonotipia could record! ANDREW PORTER

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. . . guarantees maximum tracking stability, because of sealed viscous-damping on *BOTH* vertical and horizontal pivots, and complete static balance around the vertical pivot.

The Gray "Micro-Balanced" arm offers a maximum of compliance and responsiveness with all popular cartridges that is beyond the experience of most High Fidelity enthusiasts.

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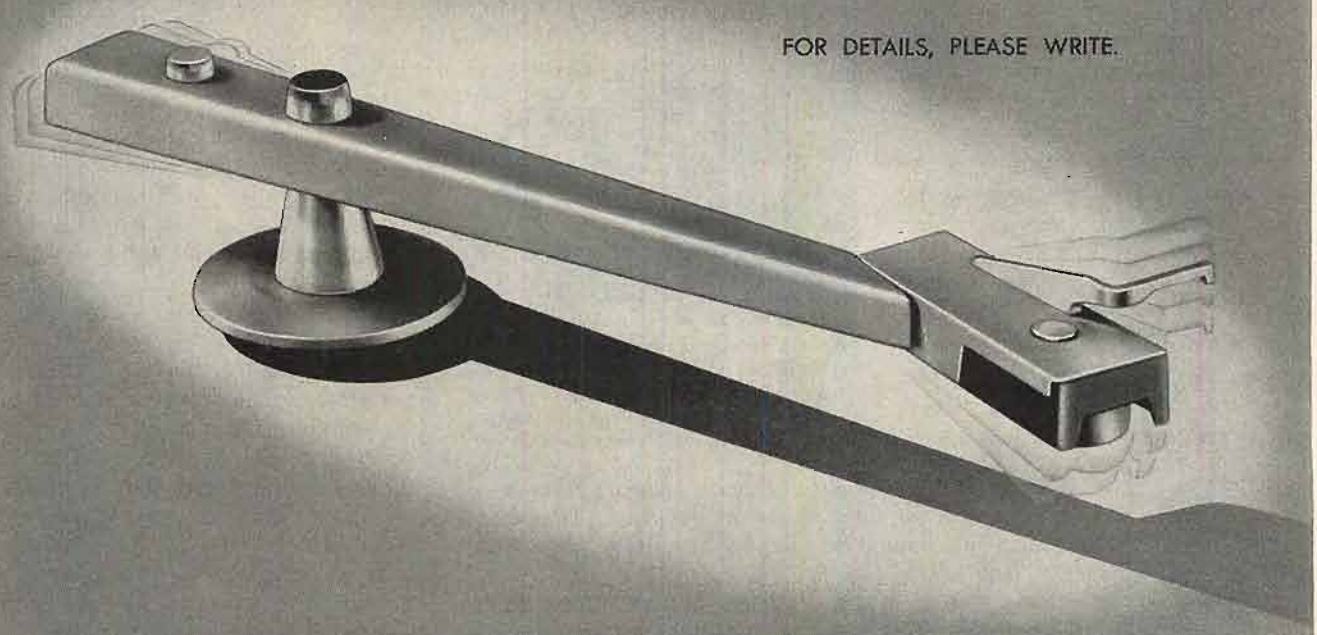

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Thorens CBA-83 Audiomatic record player

You get the best features of both in the Thorens CBA-83

Not a changer, not a conventional turntable, but so easy to use you can play it in the dark!

Place your precious records, by hand as gently as you please, on the 12-inch turntable of the Thorens Audiomatic CBA-83. Press the button—there's one for 7, 10, or 12-inch records. That's all you do!

A precision mechanism takes over and lowers the stylus gently and silently into the lead groove. No cueing light required. No stooping to look for the stylus point. No sighting along a cueing mark. No danger of scraping over the first few grooves. You don't need a steady hand—your hand need never touch the tone-arm at all!

Easy playing is just one feature of the Thorens Audiomatic. Take the motor, for example. Like all Thorens units, the Audiomatic is powered by a famous Swiss-precision direct-drive motor to assure silent operation. Accurately machined, electronically-balanced fast-rotating parts hold wow, flutter to less than ½%.

Ask for the Thorens CBA-83 Audiomatic record player at your hi-fi dealer's today! Its performance will surprise you.

And don't forget to send for free booklet "Hi-Fi and Your Budget." Write Thorens Company, Box H10.7 New Hyde Park, N.Y. 7.8

CB-33 manual player (above) starts when tone arm is lifted, shuts off silently, automatically at end of record. Has same Swiss-precision motor as CBA-83. From changer to transcription turntable, there's a Thorens for every need.

THORENS ★ FULL YEAR GUARANTEE ★ SWISS MADE PRODUCTS

ONE YEAR GUARANTEE. Now all Thorens units are covered by a 1-year guarantee—4 times as long as the usual 90-day electronic equipment guarantees! Ask your hi-fi dealer about this.

THORENS

SWISS MADE PRODUCTS
HI-FI COMPONENTS • LIGHTERS
SPRING-POWERED SHAVERS
MUSIC BOXES
NEW HYDE PARK, NEW YORK

Super Stereo

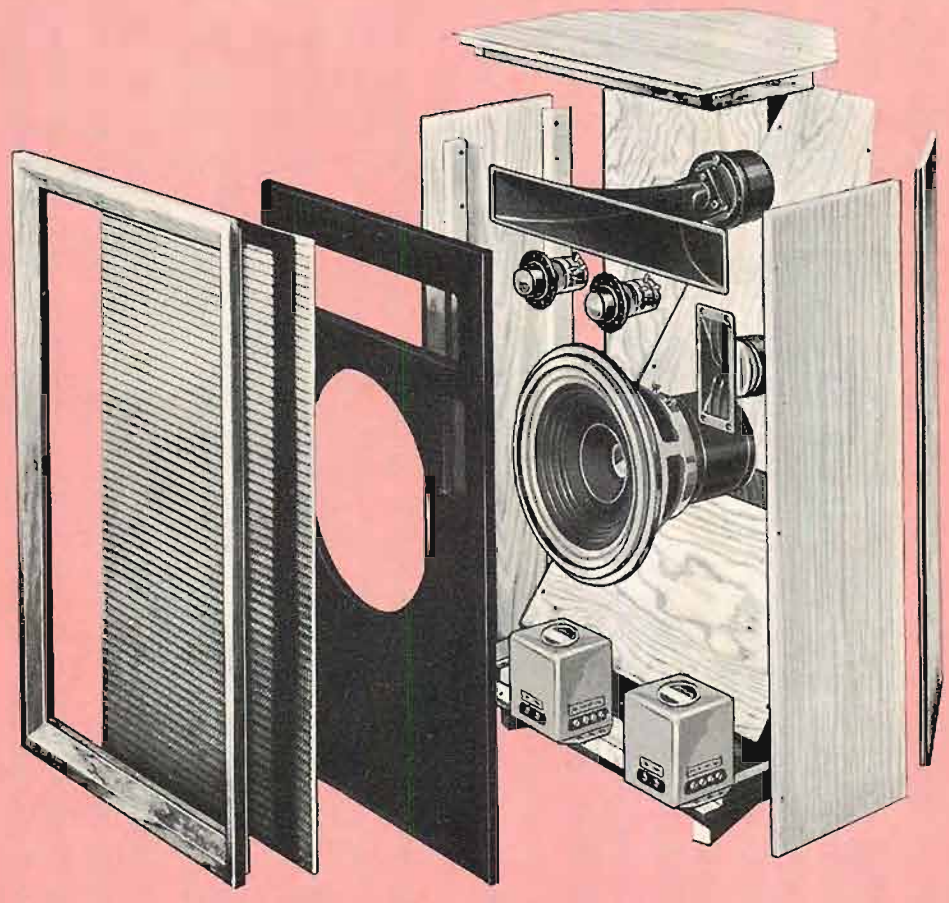
How would you like to have a stereo system which employed two banks of eight speakers each and which, in addition, offered variable reverberation delay so you could, at the turn of a knob, change your listening position from a conductor's five feet away to the end of a hall perhaps 150 feet long?

All this we were privileged to experience when we visited the Philips (which is Norelco in the United States) plant in Eindhoven, Holland. It was quite a sensation — both kinds: it made a sensation with us, and gave us a strange sensation. We sat in a medium-size studio, facing a curtain about fifteen feet way. Behind this were the two banks of speakers for the stereo setup. The stereo was excellent and truly exciting, but the real fun was still to come. The engineers tied in a reverberation control device which consisted essentially of a loop of tape passing over a series of playback heads. The spacing between the heads could be varied. Thus a signal, fed into the tape by a record head, would be picked up a fraction of a second later by the first playback head, then by the next, and so on. This principle of feeding the sound onto a tape and picking it up again a tiny fraction of a second later is one of the standard methods of introducing artificial echo or reverberation into recordings, but it is definitely not customary to use several playback heads, nor to be able to vary the distance between them while recording or reproducing.

Anyway, in the Philips setup each playback head was connected to an amplifier and then to a speaker located over the heads of the audience. The overhead speakers were about six feet apart, and there were twelve each. Two sets, one for each channel; the two rows, over our heads, were about fifteen feet apart. The music was a choral work; as the recording started,

Continued on page 21

FOR HI-FI ON A BUDGET, FOLLOW THE ELECTRO-VOICE BUILDING BLOCK PLAN



Start with your basic speaker and improve your compatible E-V high-fidelity system one economical step at a time by adding Electro-Voice Speaker Building Blocks.

Here, we've started with an SP12—12-inch coaxial driver. Later, you add BB2—a T35 very-high-frequency driver, X36 crossover and AT37 level control with wiring harness. BB2, Net $50. Still later, augment with the BB4—to smooth and disperse treble range, it includes T25A treble driver, with 8HD horn, a second crossover—800-cps X8—and a second AT37 level control with wiring harness. BB4, Net $114.

Build Your Own E-V Speaker Enclosure with a Pre-Cut, Pre-Cleated *'Do-It-Yourself'* Kit

There's no thrill like building your own speaker enclosure! Economize on your hi-fi system without sacrificing quality by assembling an E-V knock down kit of Korina plywood. Korina is of highest quality, naturally light in color, harder than mahogany, allows finishing to match any shade. There are seven models to choose from.

Shown dis-assembled is E-V's KD6 kit. Assemble it and you have a duplicate of our factory-built ARISTOCRAT enclosure of folded horn corner design for use with 12-inch drivers or separate multi-way systems. KD6, Net $39.

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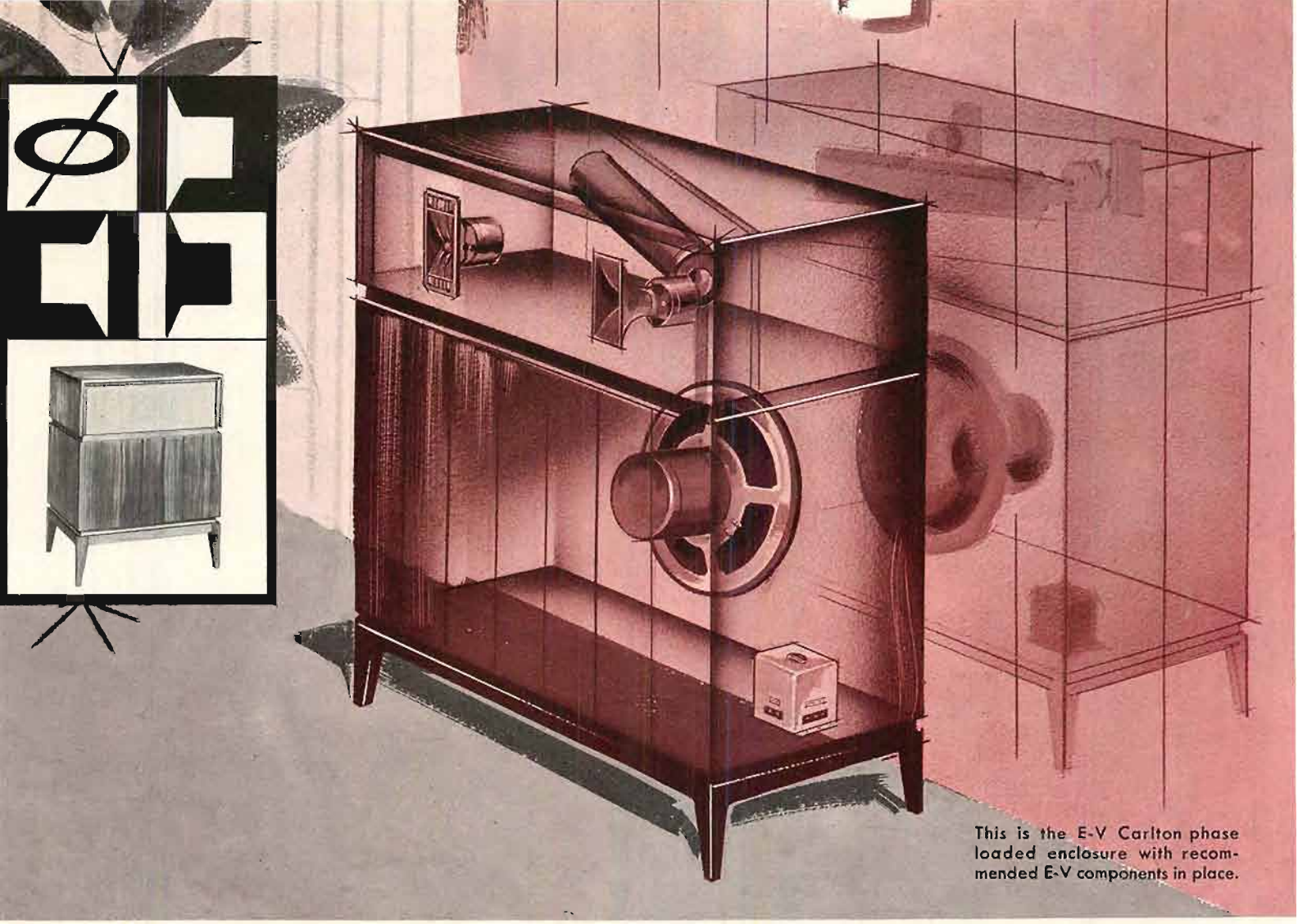
For all the facts about Electro-Voice 'Listeneered' high-fidelity components, see your distributor and write for complete details.

Electro-Voice®

ELECTRO-VOICE, INC. BUCHANAN, MICHIGAN

Export: 13 East 40th Street, New York 16, U.S.A. Cables: ARLAB



This is the E-V Carlton phase loaded enclosure with recommended E-V components in place.

Electro-Voice® MAKES HI-FI HISTORY WITH EXCITING NEW PHASE LOADED ENCLOSURES

For the first time—and only from Electro-Voice—you get performance from along-the-wall speaker enclosures which approaches the performance of a corner horn! E-V does it with the exciting new principle of PHASE LOADING, the most important advance in baffle design since the Folded Corner Horn!

Designed specifically for use along a wall, phase loaded cabinets give you almost a full added octave of bass range and completely eliminate the "boomy" characteristic of bass reflex enclosures.

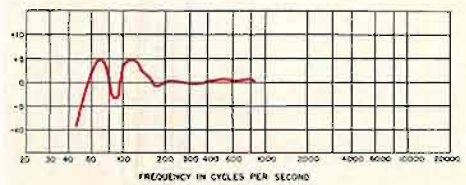
Flat, fundamental response is obtained *two* ways with *PHASE LOADING:*

First, by placing the driver at the rear of the cabinet close to the floor, and facing the wall. The wall and floor act as reflecting surfaces, close and almost equidistant from the driver cone, eliminating phase difference between reflections and the source.

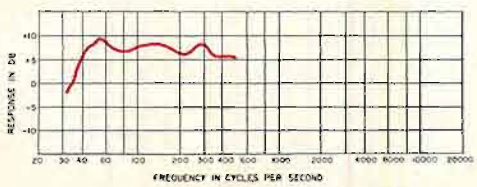
Secondly, *Phase Loading* permits a sealed cavity behind the cone, of precise volume. The compliance of this cavity, in conjunction with the mass of the cone, is made to react with the mass and compliance of the outside air throughout the second octave, adding this range to the response not otherwise attainable except through corner horns.

The low crossover of 300 cps makes this system possible, for higher frequencies are not propagated properly by indirect bass radiators.

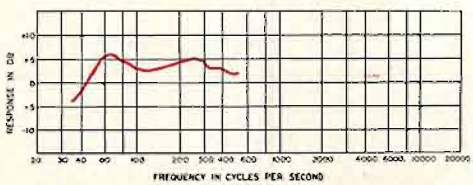
The application of these principles in E-V's PHASE LOADING gives full-bodied, extended low-bass hitherto unavailable. Musical balance is achieved for the first time in an along-the-wall system.



his curve shows performance of the usual 4-way systems in a bass reflex cabinet. Note the dip at 85 cps, which shows the destructive cancellation and the reinforcement (peak) at 120 cps which causes "boom."



This curve shows the smoothness throughout, the extra response and the extended bass response you get *only* from a folded horn corner enclosure.



This is E-V phase loading. As you can see, performance in an along-the-wall position closely approaches that of the corner horn.

DESIGNS FOR

The speaker system shown mounted in place is *one of more than a dozen variations* which may be employed in the ARISTOCRAT enclosure alone. Speaker performance data below.

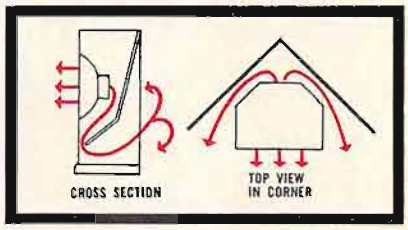
ARISTOCRAT 1A

Mahogany	$240
Blonde	247
Walnut	247

THE DIRECT RADIATOR CORNER HORN

Typical of Electro-Voice direct radiat folded horn corner enclosures is the ARI TOCRAT, a deluxe space-saver design for use with E-V 12-inch coaxial speaker TRX integrated three-way speakers your choice of speaker systems. It is d signed for use in a corner, where the wa of your room serve as extensions of th bass horn to deliver one full extra octa of bass range. Increased power-handli in the lower range is as much as 50%

This E-V ARISTOCRAT, the full line of Electro-Vo corner enclosures, ma use of room walls and c ner to propagate low bass tones. Curve sh smooth, flat response.

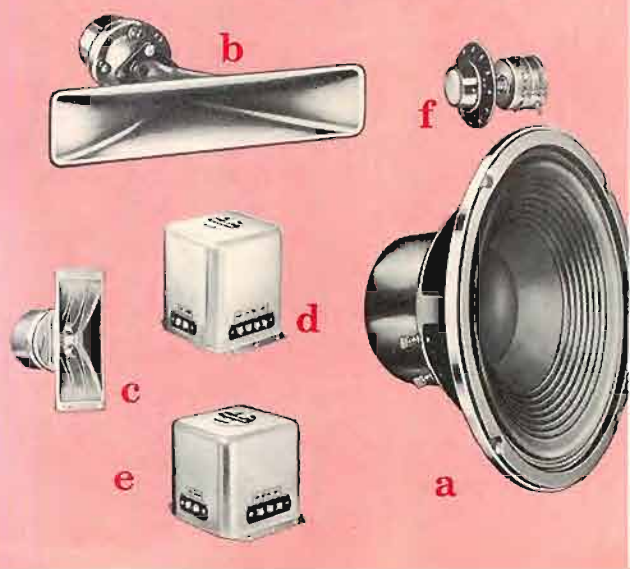


The folded corner h drawings here show sound path from dir radiators.

Integrated Speaker Systems

This is the Electro-Voice 108A *direct radiator* speaker system shown in the ARISTOCRAT enclosure above. It's an economy 3-way system employing (**a**) 12BW low-frequency bass driver; (**b**) T10A treble driver with 8HD horn for mid-range reproduction; (**c**) T35B very-high-frequency driver for silky highs; (**d**) X825 crossover; (**e**) X36 crossover; (**f**) two AT37 level controls plus wiring harness and baffle board. Crossovers are at 800 cps and 3500 cps, lowering intermodulation distortion and assuring optimum operation of each element in the system. Complete, ready to install, Net $168.

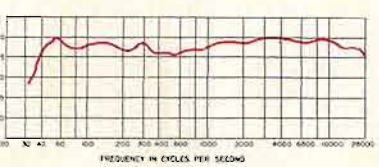
INTEGRATED



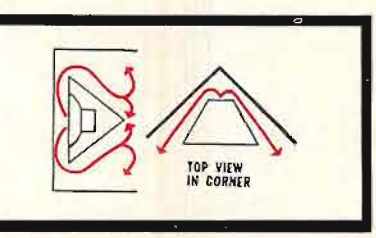
FOLDED HORNS

THE INDIRECT RADIATOR CORNER HORN

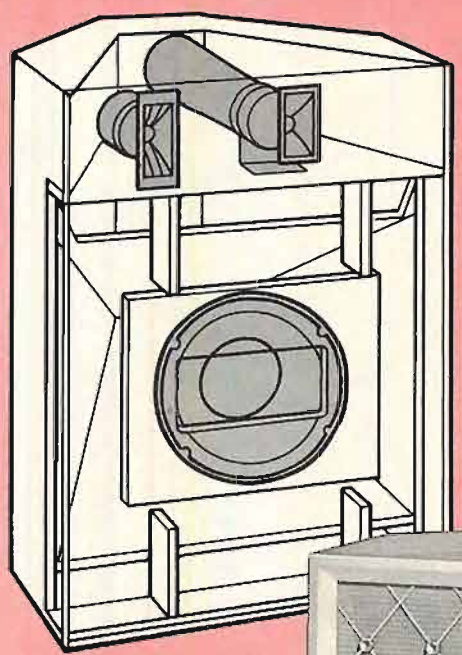
Using an advanced indirect horn-radiator principle E-V design extends the lows, enhances highs, uses room walls as extensions of the exponential horn air load. Indirect radiation and employment of low crossover frequency, allows exploitation of the sealed cavity feature explained on Page 1. These enclosures actually assure more than one full octave of added bass with unprecedented efficiency, provide direct front radiation of higher frequencies, cleaner overall musical balance.



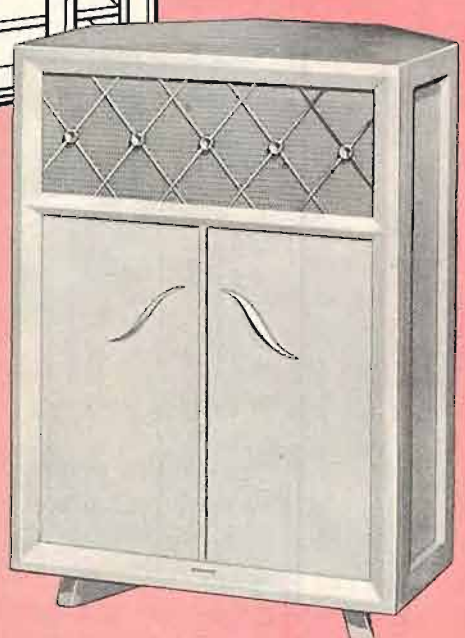
This is the response curve of an Electro-Voice Centurion indirect radiator folded corner horn enclosure employing a 4-way speaker system. Note the essential flatness of response.



Arrows in diagram show sound path in an indirect radiator corner enclosure.



Phantom drawing shows mounting positions of speakers in the E-V CENTURION enclosure, typical of this justly famed Electro-Voice design type.



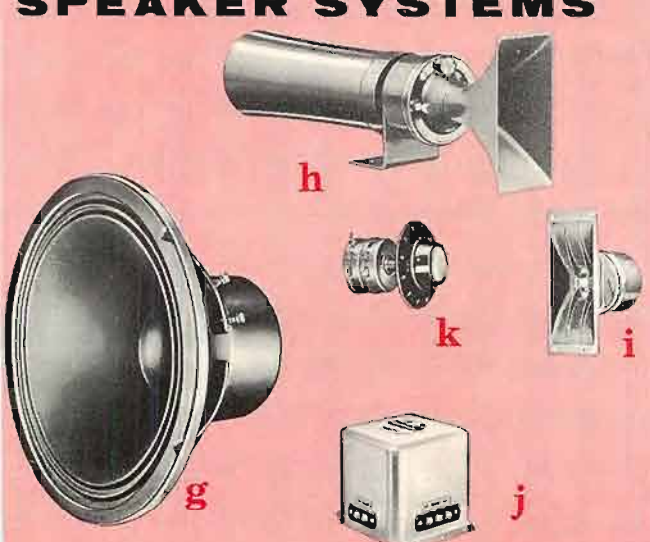
CENTURION IV

Mahogany	$392
Blonde	399
Walnut	399

SENIOR CENTURION IV

Mahogany	$487
Blonde	494
Walnut	494

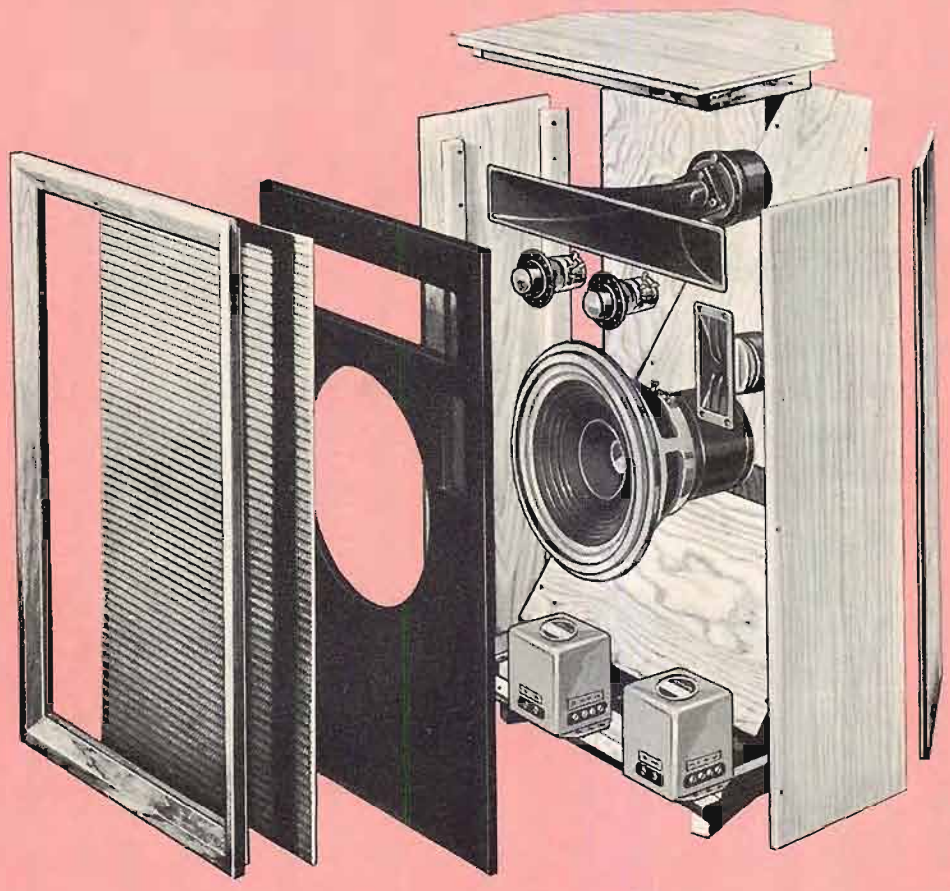
SPEAKER SYSTEMS



This is the 117B indirect radiator speaker system shown in the CENTURION enclosure above. It is an economy 4-way system of unusual performance and high value (g) 15BWK "K" type low-frequency driver for bass reproduction; (h) MT30B coaxial mid-bass and treble driver-horn assembly; (i) T35B very-high-frequency driver for smooth reproduction of the highs; (j) X36 crossover; (k) two AT37 level controls plus wiring harness and complete instructions including enclosure construction details. Electronic crossovers are at 300 and 3500 cps and there is an acoustic crossover at 1000 cps. Complete, Net $151.

Also shown are some of the components included in the deluxe 105E system of the same type. This deluxe system substitutes a high-efficiency 15WK LF driver for the 15BWK bass reproducer shown and also includes MT30 mid-bass horn assembly and a new T350 VHF driver, an Ultra-Sonax model which has a frequency response of 2kc to 21 kc, ±2db. The deluxe 105E system complete, Net $245.

FOR HI-FI ON A BUDGET, FOLLOW THE ELECTRO-VOICE BUILDING BLOCK PLAN



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Here, we've started with an SP12—12-inch coaxial driver. Later, you add BB2—a T35 very-high-frequency driver, X36 crossover and AT37 level control with wiring harness. BB2, Net $50. Still later, augment with the BB4—to smooth and disperse treble range, it includes T25A treble driver, with 8HD horn, a second crossover—800-cps X8—and a second AT37 level control with wiring harness. BB4, Net $114.

Build Your Own E-V Speaker Enclosure with a Pre-Cut, Pre-Cleated *'Do-It-Yourself'* Kit

There's no thrill like building your own speaker enclosure! Economize on your hi-fi system without sacrificing quality by assembling an E-V knock down kit of Korina plywood. Korina is of highest quality, naturally light in color, harder than mahogany, allows finishing to match any shade. There are seven models to choose from.

Shown dis-assembled is E-V's KD6 kit. Assemble it and you have a duplicate of our factory-built ARISTOCRAT enclosure of folded horn corner design for use with 12-inch drivers or separate multiway systems. KD6, Net $39.

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For all the facts about Electro-Voice 'Listeneered' high-fidelity components, see your distributor and write for complete details.

Electro-Voice®

ELECTRO-VOICE, INC. BUCHANAN, MICHIGAN

Export: 13 East 40th Street, New York 16, U.S.A. Cables: ARLAB

NOTED WITH INTEREST

Continued from page 16

the choir seemed to be standing right at our feet. Then slowly it started moving away, toward the back of a small room . . . toward the back of a large room . . . still farther away . . . until finally it was at the far end of a big cathedral. The effect was most dramatic and thrilling, like nothing we had heard before. Finally the engineers brought the choir back toward us, until it was again directly at our feet.

The effect was achieved by stretching the playback heads farther and farther apart, and giving the reverberation or echo part of the sound a stronger and stronger position relative to the total. Most of the sound, of course, was carried by the two stereo speaker banks behind the curtain; only a fraction came through the overhead systems. When the playback heads were as close together as possible, the overhead speakers sounded as if they were very close, so the size of the room seemed compressed. As the heads were spread apart, the delay between original sound and echo expanded. The overhead speakers then gave the impression that they were, not six feet apart, but perhaps as much as twenty or even thirty.

While this was a rather exotic demonstration, the basic principles are becoming more and more widely used in elaborate sound reinforcement systems. For example, consider a real church (not the imaginary one we were in at the Philips studio): if a normal public address system is used, the microphone in front of the pulpit will pick up the minister's words and deliver them through a series of speakers simultaneously. Since sound travels at about 1100 feet per second, the person in the first pew, ten feet from the minister, will hear his words about 1/100th of a second after they are spoken. But in the back of the church, perhaps 200 feet away, the loudspeaker will deliver the words before the person in the first pew hears them. And then, about one-fifth of a second later, that last-row worshiper will hear faintly the minister's voice, plus some echo from the original voice, plus some echo from various speakers along the walls, and so on. With devices such as Philips demonstrated, designers of sound reinforcement systems can de-

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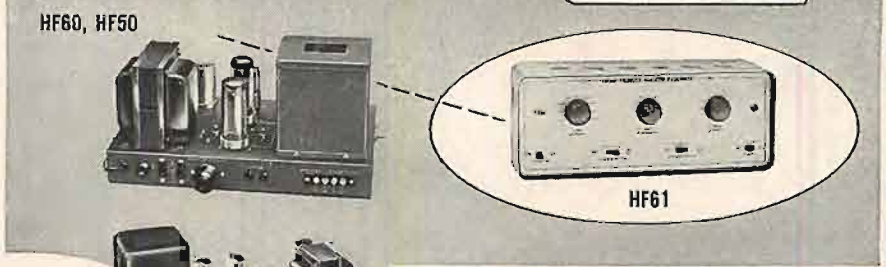
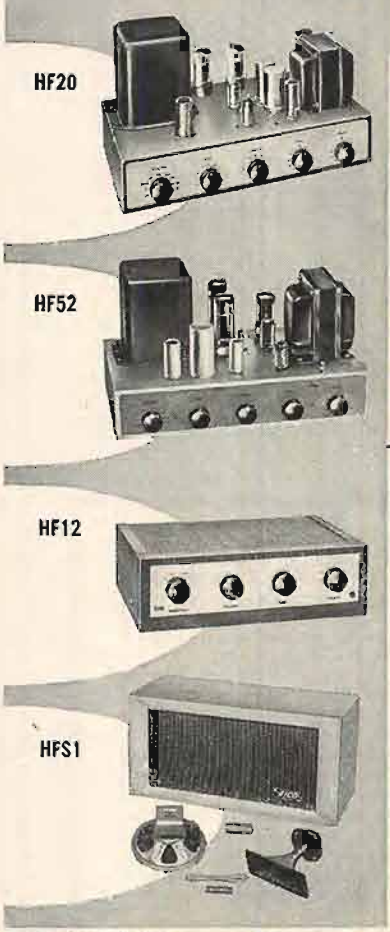
Look over the BEST BUYS in HI-FI . . . from EICO®





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The same engineering and price policy underlies all EICO high fidelity equipment. You can examine and compare EICO at any of the 1200 neighborhood distributors and hi-fi specialists throughout the U.S. Judge EICO's claims for yourself *before* you buy.

Write for FREE Catalog H-10.

HF52 50-WATT Ultra-Linear INTEGRATED AMPLIFIER complete with Preamplifier, Equalizer & Control Section
KIT $69.95 WIRED $109.95
Power amplifier section essentially identical to HF50, including output transformer, GZ34 rectifier, etc. Includes all-feedback equalizations (5 pos.) & tone controls. Centralab loudness control & separate level control that does not affect response at any setting. Cathode follower output to tape. Correct input loading for new ceramics. Zero cross-talk Biamplification input & output facilities. 8½" x 15" x 10". Matching Cover E-1, $4.50.

HF12 12-WATT Williamson-type INTEGRATED AMPLIFIER KIT $34.95 WIRED $57.95
Complete with Preamplifier, Equalizer & Control Section. Equalized direct tape head & magnetic phono inputs. Power Output: 12 w cont., 25 w pk. IM Dist.: 1.3% @ 12 w. Freq. Resp.: 1 w: ±0.5 db 12-75,000 cps; 12 w: ±0.5 db 25-20,000 cps. 2-EL84, 3-ECC83/12AX7, 1-EZ81.

HFS1 TWO-WAY SPEAKER SYSTEM $39.95 complete with FACTORY-BUILT CABINET
Jensen heavy-duty 8" woofer & matching Jensen compression-driver exponential horn tweeter. Smooth clean bass & crisp, extended natural highs. Overall response: ±6 db 70-12,000 cps. Power-handling capacity: 25 w. Impedance: 8 ohms. Bookshelf size: 23" x 11" x 9". 25 lbs. Wiring Time: 15 min.

HF61 Master Control PREAMPLIFIER
KIT $24.95 WIRED $37.95
with Power Supply: KIT $29.95 WIRED $44.95
Does not add distortion or detract from wideband or transient response of finest power amplifiers at any control settings. High-quality feedback circuitry throughout & most complete control & switching facilities. Feedback scratch & rumble filters, equilizations, tone controls. Centralab Senior "Compentrol" loudness control, concentric level control. 4 hi-level, 2 lo-level switched inputs. Extremely flat wideband freq resp: ±0.3 db 12-50,000 cps. Extremely sensitive. Negligible hum, noise, harmonic or IM distortion. 4-7/8" x 12-5/16" x 4-7/8". 8 lbs.

HF60 60-WATT Ultra-Linear POWER AMPLIFIER with ACRO TO-330 Output Transformer
KIT $72.95 WIRED $99.95
EF86 volt ampl direct-coupled to 6SN7GTB K-coupled phase inverter driving two U/L-connected p-p EL34 output tubes. GZ34 extra-rugged rectifier. Rated output: 60 w (130 w pk). IM Distortion: less than 1% at 60 w; 0.5% at 50 w. Harmonic Distortion: less than 0.5% from 20-20,000 cps within 1 db of rated power. Sine Freq. Resp: at 1 w: ±0.1 db 15-35,000 cps at any level from 1 mw to rated power. Square Wave Resp: excellent 20-25,000 cps; 3 usec rise-time; Sens: 0.52 v for 60 w. 7" x 14" x 8". 30 lbs. Matching Cover E-2, $4.50.

HF50 50-WATT Ultra-Linear POWER AMPLIFIER
KIT $57.95 WIRED $87.95
Extremely high quality output transformer with extensively interleaved windings, 4, 8, and 16-ohm speaker taps, grain-oriented steel, fully potted in seamless steel case. All other specs equivalent to HF60 but on 50 w level. Matching cover E-2, $4.50.

HF20 20-WATT Ultra-Linear Williamson-type INTEGRATED AMPLIFIER complete with Preamplifier, Equalizer & Control Section KIT $49.95 WIRED $79.95
Sets a new standard of performance at the price, kit or wired. Rated Power Output: 20 w (34 w peak). IM Distortion: 1.3%. Max Harmonic Distortion: below 1%, 20-20,000 cps. within 1 db of 20 w. Power Resp (20 w): ±0.5 db 20-20,000 cps; Freq Resp (¼ w): ±0.5 db 13-35,000 cps. 5 feedback equalizations. Low-distortion feedback tone controls. 4 hi-level & 2 lo-level inputs. Conservatively rated, fully potted output transformer: grain-oriented steel, interleaved windings. 8½" x 15" x 10". 24 lbs. Matching Cover E-1, $4.50.

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PILOT

offers you peak performance in high fidelity at low cost

3-in-1 COMPONENT UNITS

Pilot engineering and ingenuity at its best! Tuner, amplifier and preamp-audio-control built onto a single chassis for greatest convenience in assembling a high fidelity system. Only the speaker, and record player or tape recorder need be connected.

HF-42

Includes FM-AM Tuner with tuned RF stage and dual cascade limiter-discriminator FM circuit for maximum sensitivity — perfect quieting even with fringe signals; precise BEACON tuning indicator; AFC with disabling switch; 10 KC filter for AM; built-in FM and AM antennas; flywheel tuning.

Preamp-Audio Control with hum-free DC on tube heaters; tape head and phono inputs with separate equalization; bass and treble controls; loudness-contour and volume controls; tape recorder output.

Power Amplifier with less than 1% distortion at 20 watts rated output (40 watts peak); frequency response: 20 to 20,000 cycles, ±1db; built in rumble filter. Housed in handsome enclosure finished in brushed brass and burgundy.

Dimensions: 4¾"h x 13¾"w x 12¼"d.

$209.50 Complete

HF-30

Includes FM-AM Tuner with tuned RF stage for high sensitivity — perfect quieting even with fringe signals; precise BEACON tuning indicator; AFC with disabling switch; 10 KC filter for AM; built-in FM and AM antennas; flywheel tuning.

Preamp-Audio Control with phono and auxiliary inputs; bass and treble controls, loudness-contour and volume controls, tape recorder output.

Power Amplifier with less than 1% distortion at 12 watts rated output (24 watts peak); and frequency response: 20 to 20,000 cycles, ±1db; selector switch for independent or simultaneous operation of two speaker systems. Housed in handsome enclosure finished in brushed brass and burgundy.

Dimensions: 4¼"h x 14¼"w x 10¼"d.

$169.50 Complete

Make your own performance test of these component units at your Pilot dealer.
For complete specifications, write to Dept. AV-9

Prices slightly higher west of Rockies.

Pilot RADIO CORP., 37-06 36th St., Long Island City 1, N. Y.

Over 38 years leadership in electronics.

NOTED WITH INTEREST

Continued from preceding page

lay the arrival of the electrically-conducted or loudspeaker sound until the natural air-conducted sound arrives also. Thus the person in the last row of pews would hear the minister's live (if distance-attenuated) voice and simultaneously the loudspeaker reinforced voice, but without any jumble or blur, because of the various delays. And along the way, from the first to the last pew, the loudspeakers would be synchronized to match the arrival of the live voice. The result is that all members of the congregation can hear the sermon with equal clarity. (Never mind remarks from the peanut gallery that this may not be an advantage!)

Certainly the Philips demonstration of stereo with expansible reverberation was the highlight of our Eindhoven trip, but the Philips engineers and staff had a hatful of fascinating projects under way. A tape recorder, which should be in the United States shortly; their output-transformerless amplifiers and matching speakers (with special voice coils); their line of radio-phonographs and components. Also of interest was a trip through their diamond stylus factory . . . how the girls who insert the stylus into its shank have steady enough hands and good enough eyesight is beyond us.

We shall let readers of HIGH FIDELITY know as soon as Philips has a home model of its expansible echo system available. But don't delay purchase of a hi-fi system, meantime!

Musical Gifts

The big gift day is not too far off: for a handy and intriguing catalogue of musical gifts, write Leslie Creations, Lafayette Hill, Pa.

Don't Look Now

The way things have been going lately, a release received a little while ago from the Thorens Company seemed quite unbelievable — so much so that we held onto it for an issue, just to see if a cancellation notice would appear. It hasn't, so maybe it is true: Thorens, contrary to all other trends, is reducing prices. Briefly, the CB-33 manual player goes from $59.95 to $48. The CBA-83 automatic player is being reduced from $69 to $59.95, and the CD-43 changer has been lowered from $96 to $79.95.

Incidentally, Thorens has recently extended the warranty period for its products from ninety days to a full year. Unusual industry, high fidelity: lowering prices and lengthening guarantees.

The Morning After

According to a publicity release recently received from Miami Beach, the early morning hours for the average hotel guest of the future are going to be pretty horrible. (That's our opinion; the inventor doesn't agree with us, naturally.) Says this release: "Next year, hotel guests will not be awakened by the jangle of a telephone bell. At a time previously specified, the room lights will be turned on automatically. A musical chime will follow and then a pleasant voice, probably feminine, will give the weather forecast."

There are all sorts of things wrong with this. In the first place, let's cut out the weather forecast. In Florida, anyway even a tape recording of "Fair and warm" will wear out someday. But if we have to have a weather forecast, at least let's have it masculine (Liberace?) if the guest to be awakened is feminine.

And why the musical chime? That will make the guest think it's Sunday and he can go back to sleep. Later in this release, there's an explanation of a hair-raising siren which will function automatically in case of fire, or something. Let's reverse these two: have the siren for the awakening ceremony; all people like to see a fire so the guest will get up to watch. And use the soothing musical chimes when there's a fire; if the hotel gets on fire, let's everybody keep calm.

But the main trouble is that no one really wants to eliminate the phone jangle. That is part and parcel of the soul of The Hotel. Think what The Hotel means to so many million people —and then remember that no place else in the world can one awaken, at a prespecified hour, to the jangle of a phone. That jangle, for millions of travelers, means immediate identification of where they are . . . in The Hotel. Where in the world would you think you were if while you were still sound asleep, the lights went on, chimes chimed, and pleasant voices, probably feminine, cooed weather forecasts from a hole in the ceiling? NO! In the name of sanity, let the phones jangle!

Continued on next page

PILOT

and only

PILOT

offers you peak performance in high fidelity at low cost

TUNERS

Traditional Pilot engineering and quality assure optimum performance. All Pilot tuners feature *Beacon* tuning for precise station selection. All Pilot tuners are also fully shielded to conform with FCC radiation specifications.

FA-550 FM-AM

Has tuned RF stage and dual cascade limiter-discriminator FM circuit for maximum sensitivity; — perfect quieting even with fringe signals; AFC with disabling switch; 10 KC filter for AM; flywheel tuning; built-in FM and AM antennas. Features preamp-audio control with five input channels; hum-free DC on tube heaters; tape head and phono inputs with separate equalization; bass and treble controls; separate cathode follower outputs for tape recorder and power amplifier. Housed in handsome enclosure finished in brushed brass and burgundy.

Dimensions: 4¾"h x 14½"w x 10¼"d.

$159.50 Complete

FA-540 FM-AM

Has tuned RF stage for high sensitivity — perfect quieting even with fringe signals; AFC with disabling switch 10KC filter for AM; cathode follower output; phono and auxiliary inputs; flywheel tuning; built-in FM and AM antennas. Housed in handsome enclosure finished in brushed brass and burgundy.

Dimensions: 4¾"h x 13"w x 8¾"d.

$109.50 Complete

FM-530 FM Only

Has tuned RF stage for high sensitivity — perfect quieting even with fringe signals; AFC with disabling switch; cathode follower output; phono and auxiliary inputs; flywheel tuning; built-in antenna. Housed in handsome enclosure finished in brushed brass and burgundy.

Dimensions: 4¾"h x 13"w x 8¼"d.

$89.50 Complete

Make your own performance test of these tuners at your Pilot dealer.
For complete specifications, write to Dept. AW-10

Prices slightly higher west of Rockies.

Pilot RADIO CORP., 37-06 36th St., Long Island City 1, N. Y.

Over 38 years leadership in electronics.

PILOT

and only

PILOT

offers you peak performance in high fidelity at low cost

AMPLIFIERS

Pilot-engineered Williamson-type circuits employing specially wound output transformers to insure absolute stability and lowest distortion. Power specifications are conservatively rated, and amplifiers are designed for continuous operation at full output.

AA-920

Rated output with less than 1% distortion: 20 watts (40 watts peak); frequency response: 20 to 20,000 cycles, ±1db. Has built-in preamp and audio control with hum-free DC on tube heaters; tape head and phono inputs with separate equalization; 3-position rumble and scratch filters; bass and treble controls; loudness-contour and volume controls; plus tape recorder output. Housed in handsome enclosure finished in brushed brass and burgundy.

Dimensions: 4¾"h x 13¼"w x 9"d.

$99.50 Complete

AA-903B

Rated output with less than 1% distortion: 14 watts (28 watts peak); frequency response at rated output: 20 to 20,000 cycles, ±1db. Has built-in preamp and audio control with hum-free DC on tube heaters; tape head and phono inputs with separate equalization; 2-position rumble and scratch filters; bass and treble controls; loudness-contour and volume controls; plus tape recorder output. Housed in handsome enclosure finished in brushed brass and burgundy.

Dimensions: 4¾"h x 13¼"w x 9"d.

$79.95 Complete

AA-410A

Basic amplifier—rated output with less than 1% distortion: 20 watts (40 watts peak); frequency response: 20 to 20,000 cycles, ±0.5db; 6L6GB output tubes. Chassis and cover cage finished in brushed brass.

Dimensions: 4" x 12⅜" x 6" high.

$59.50 Complete

AA-908

Basic amplifier—rated output with less than 1% distortion: 40 watts (80 watts peak); frequency response: 20 to 20,000 cycles, ±0.1db; 6CA7 output tubes; provision for selecting optimum damping factor. Chassis and cover cage finished in brushed brass.

Dimensions: 12¼" x 8¼" x 6½" high.

$125.00 Complete

Make your own performance tests of these amplifiers at your Pilot dealer.
For complete specifications, write to Dept. AX-10

Prices slightly higher west of Rockies.

Pilot RADIO CORP., 37-06 36th St., Long Island City 1, N. Y.

Over 38 years leadership in electronics.

NOTED WITH INTEREST

Continued from preceding page

On the Air

In Cambridge, Mass., WHRB-FM will commence formal broadcasting this month. It is student-operated by the Harvard Radio Broadcasting Co.

And the Westinghouse Broadcasting Company began, in midsummer, separate programing for its FM stations in Pittsburgh (KDKA-FM) and in Portland, Ore. (KEX-FM). WBZ-FM in Boston and KYW-FM in Cleveland will follow suit as soon as transmitter relocating and revamping operations are completed. This is a major step ahead for fine music.

We will not reveal to you the identity of the station which heralded its birth, also in midsummer, with a blurb about how radio history was soon to be made because it would be the first hi-fi station! Ho hum!

Memo to station publicity agents: don't forget to mention your broadcasting frequency. We can't guess, and readers might like to know where, approximately, to start hunting for that new or improved signal. None of the announcements mentioned above gave this bit of information.

Taped Broadcast Wanted

J. E. Spencer, 701 W. Broadway, Clarksville, Texas would like a dub of anyone's tape of the Metropolitan Opera broadcast of Verdi's *La Forza del destino*. He will supply tape and postage; wants 3¾ ips, please.

Record Club: Pennsylvania

Received a letter from C. A. Anglemire of Nazareth, Pa., telling about a record club to which he belongs. It started in 1941, has met for two hours every Tuesday ever since.

Incidentally, Mr. Anglemire's letter rang some dim bells in our memory. We have been spending the past fifteen minutes thumbing through early issues; sure enough, a letter from him appeared in HIGH FIDELITY No. 4, page 11.

Boston-area FM

Word from Richard Kaye, Station Manager of WCRB in Boston, tells us that they are publishing their own expanded program guide. The first issue covers the period from Sept. 15 to

Nov. 1; subsequent issues will be bi-monthly. The guide will have several new features, including a calendar of concerts in the Boston area.

Hi-Fi in Lisbon

How's this for a splendid record shop? It's the Discoteca Fonomat in Lisbon.

Get Out the Wing-Back

Got an old wing-back chair around the house or in the attic? Dig it out, you stereophony enthusiasts! Put a loudspeaker in each "wing," and you're in business for some fine stereo (provided, naturally, you have the rest of the necessary two-channel equipment).

And if you don't want to rip up the family heirloom, get in touch with Stereo Products Co., Severna Park, Md. They've designed just such a chair, with the help of Mark Mooney, who is the publisher of *Tape Recording* Magazine.

Waxman *Sinfonietta*

The music is on Decca 9889; the score is available from Boosey and Hawkes. They were kind enough to send us a copy of it.

Hi-Fi Wife

If this keeps up, ownership of a high-fidelity system will be grounds for divorce, along with cruelty, abusive treatment, and so forth. Anyway, latest to incur the wrath of the ladies is a certain Douglass Welch, who wrote (under that pen name, at least) an advertisement for Frederick & Nelson in Seattle. We haven't actually heard that anyone (f.) has taken a shot at Mr. Welch, but somebody's likely to. Here's what he had to say: "'A gentleman of our acquaintance asked us recently if we thought he ought to invest in a fine high-fidelity phonograph, and we told him no because he does not have a high-fidelity wife to go

Continued on next page

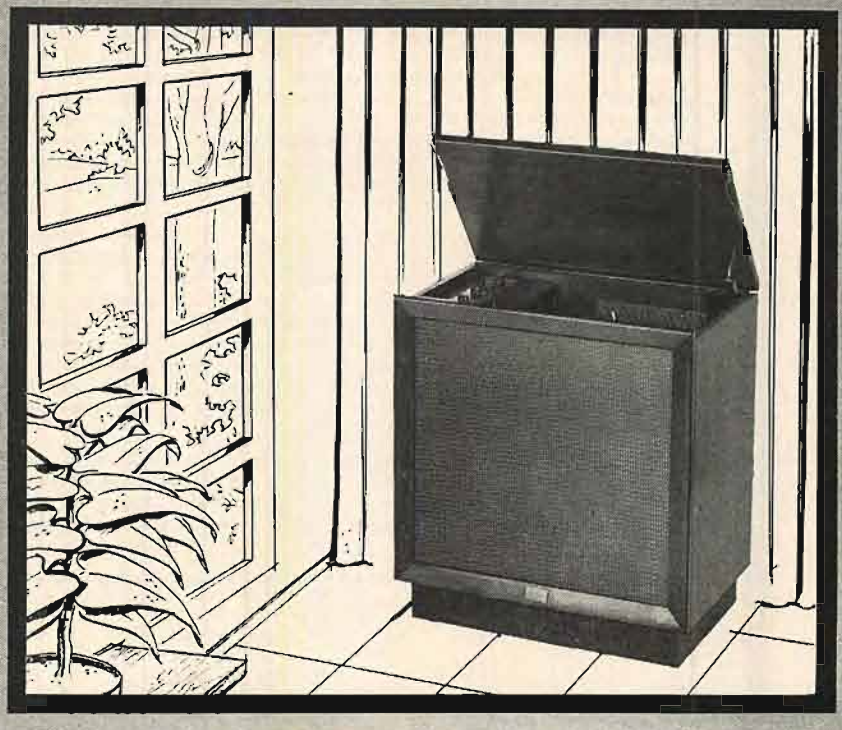
PILOT

and only

PILOT

offers you standard custom high fidelity components in

CONSOLE SYSTEMS



Pilot has combined component quality with console convenience.

Pilot consoles are actually high fidelity component systems made up of the very same nationally advertised high fidelity components designed for use in custom installations. You can readily identify them by type and model number – you can buy them separately.

The Ensemble 1030D, one of eight superb Pilot console systems, includes the standard Pilot AA-903B 14-watt (28 watts peak) amplifier-preamp, the famous Garrard RC-88 4-speed record changer with diamond-sapphire magnetic cartridge and a perfectly matched 4-way, 4-speaker system built into an acoustically engineered enclosure.

Next time your friends ask about authentic high fidelity with the 'plug-in-and-use' convenience of a single cabinet, tell them about Pilot Component-Consoles. But, before you do, hear one yourself – you're due for a delightful surprise. For complete information, write to:

Pilot **RADIO CORP.,** 37-06 36th St., Long Island City 1, N. Y.

Over 38 years leadership in electronics.

From the desk of

ROBERT D. NEWCOMB

Dear Mr. Newcomb:

The previous amplifier I owned had a loudness control but I never could get it to work. I finally had to disconnect the loudness compensation altogether. Naturally I concluded all loudness controls were no good. Did I get a surprise when I hooked up my new Newcomb Compact 1020 and adjusted it according to your instructions. It really works! Needless to say I'm happy but I'm also curious. Just what's different about your loudness control?.....

Dear Mr. Simons:

You guessed right when you suspected our loudness control was different than others. We have spent much time and effort over a good many years perfecting the control you are now enjoying. Loudness controls are effective and desirable only to the degree the compensation provided at each setting of the control agrees with the compensation needed by the ear for the volume of sound actually delivered into the room at that setting. Your Newcomb loudness control has been carefully designed to add the correct increments of compensation over the entire range of need. Then, to bring the sound level actually obtained into agreement with the compensation provided throughout the range of the loudness control, we developed the "level" control. Due to the wide choice of phonograph pickups available to the public, each with different amounts of signal output, and the variations in efficiency among loudspeakers of different makes and sizes of as much as 50 to 1, it is not hard to see that a means of varying overall gain to compensate for these differences is essential if we are to be sure the compensation in the loudness control agrees with the actual loudness. Since the design of the control to achieve correct loudness compensation over the entire range of need requires utmost care and skill, this compensation should not be changed by the user nor should it require changing at any setting of the loudness control if its compensation is effective over an adequate range of volume and if the actual volume of sound heard has been brought into agreement with that for which the compensation on the loudness control has been balanced.

In your Newcomb amplifier, the "level" control is the control that balances the sound level that results from your particular combination of components to that which was intended to occur at each setting of the loudness control. Once this relationship has been established, the "level" control setting need not be changed. All further adjustments for the sound intensity are obtained by merely turning the loudness control. The procedure recommended for properly setting the "level" control is very simple: While reproducing a record and with all controls normal, turn the "loudness" control full "on" and adjust the "level" control for the maximum sound level you actually will be using in your home . . . no more! (If you ever want to blast the windows for test purposes, you can always turn up the level control.) This will spread out the loudness compensation correctly for all future adjustment of loudness all the way down to a whisper.

The care we have exercised in increasing the range of useful compensation and to precisely meet the ear's needs at each level of sound intensity, coupled with our "level" control to balance the volume of sound you hear with that which should actually occur at each setting of the loudness control, if the compensation is to be correct across the full scale, is why you enjoy your loudness control as you do.

We are mighty glad you are happy and won't mind a bit if you tell your friends all about your "discovery".

Sincerely yours,

Bob Newcomb

The Newcomb Compact 1020 Power Amplifier and Pre-amplifier is a golden example of Concentrated Quality, Value, flexibility, dependability, low distortion, and beauty make the 1020 the finest unit made in the compact field. Don't regret later that you didn't hear the Compact 1020 before you made up your mind.

Mr. Newcomb is founder and President of NEWCOMB AUDIO PRODUCTS CO., *Hollywood's leading manufacturer of precision products for the control and amplification of sound... since 1937! Mr. Newcomb will be happy to answer your questions about high fidelity amplifiers if you will write to him at*

NEWCOMB AUDIO PRODUCTS CO.
Dept. W10
6824 Lexington Avenue
Hollywood 38, California

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Continued from preceding page

along with the machine. Although we think there is no purchase a family can make more rewarding or pleasurable than a good phonograph, high fidelity requires respectful, concentrated listening. This gentleman's wife, a wonderful person in every other respect, is under an irresistible compulsion to talk, laugh, scream, and shout the moment anyone starts to play a phonograph record within her hearing. She opens up like a Chautauqua speaker addressing a tent audience of 5,000 without microphone or public address system."

Well, you said all this, Mr. Welch, and she's your friend's wife. And we won't even mention the name of the reader who sent in this clipping to us; he might be married and then *his* wife is going to start asking *him* questions.

The Address Is Cremona, Italy

Dr. Eric Bock, of Waukegan, Ill., sent us a clipping from the Hamburg paper, *Die Zeit*, which reported that the Italian Post Office had received a letter from Irak, addressed to Antonius Stradivarius, Faciebat Cremona 1713. The Cremona postmaster opened the letter, which said: "Dear Mr. Stradivarius: In a violin which a friend of mine bought, I found your address. Because I think the instrument is of first class quality, I beg you to send me your catalogue. Yours very truly, A. P. Baraya, Ottoman Bank, Arbib, Irak."

Higher Power

In line with increased power now available from the newer power amplifiers, Cornell-Dubilier has introduced a line of capacitors particularly suited for dividing network applications. The capacitors are tubular and measure approximately 4 by 1½ feet; they are rated to 200,000 volts.

Well, yes, we're kidding, of course. Cornell-Dubilier *has* introduced the capacitors, and our specs are correct. But they may be a little larger than necessary for audio applications!

Canadian Folk Music Society

At a meeting held early this year, it was decided to establish a Canadian branch of the International Folk Music

Continued on page 29

When the music sounds like it is being played in the subway...you've got RUMBLE*. You can eliminate "rumble" with a Rek-O-Kut Rondine Turntable as the heart of your system. Prove this by listening to a Rondine at your dealer. Compare its accuracy and silence. It will stay that way for keeps! Compare its precision crafting, luxurious styling. Compare it with what you now own. It's like coming out into the sunshine...the difference is that great! Rondine Turntables from $59.95. Rek-O-Kut 12" Turntable Arm—$26.95—Bases in walnut and blonde. *Send for free color booklet and Strobe disc.*

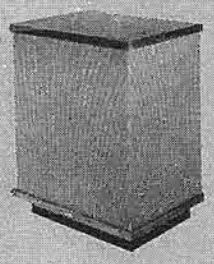
*Annoying extraneous low-pitched noise produced by conventional phono motor and reproduced by the loudspeaker.

REK-O-KUT

HIGH FIDELITY TURNTABLES · TURNTABLE ARMS

38-19 108th ST., CORONA 68, N.Y.

For Sustained Satisfaction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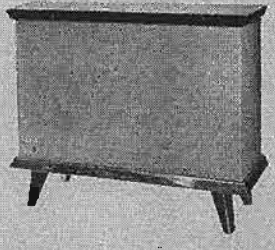
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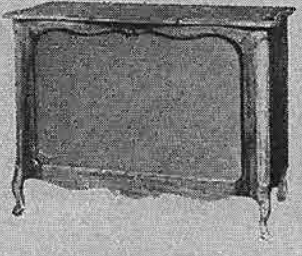
Bozak

QUALITY LOUDSPEAKERS

•

DISTINCTIVE CABINETRY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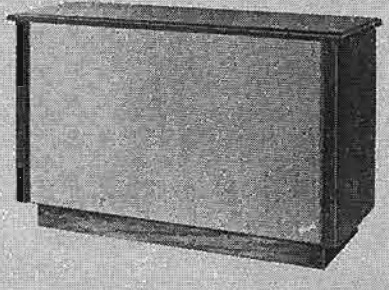
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Hear them at your Franchised Bozak Dealer

THE R.T. Bozak SALES COMPANY

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Exports: Electronics Manufacturers' Export Company • Plainview • New York

NOTED WITH INTEREST

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Council (UNESCO). The Society will be under the patronage of the National Museum of Canada. For further information, write Miss Carmen Roy, Canadian Museum of Human History, Ottawa, Canada.

Sweden to Michigan

Word from the University of Michigan is that they have started a twenty-six-week series of programs entitled "Sweden in Music," which they believe to be one of the first efforts to bring the music of Sweden to America. By the time the series has been completed, WUOM/WFUM will have broadcast music by nearly forty different Swedish composers, plus folk music, jazz, etc.

In Chicago

Has everyone in the Chicago area tuned their FM dials to 97.1 mc? That is the frequency of Chicago's WNIB, which provides varied musical fare and is reported to be doing some smart programing.

In Kansas

Had a very nice letter a while back from Charter Subscriber R. Edwin Browne, director of the University of Kansas' well-known pair of stations, KFKU and KANU. He enclosed several copies of their program guide and newsletter; even a hasty perusal whetted our interest. Wish we could tune in this station. Incidentally, KANU, the FM half of the pair, has been on the air since September 1952. Mr. Browne reports a phenomenal growth in terms of both listener interest and hours on the air.

High-Fidelity Concerts

Charles E. Branham of Tacoma, Wash., sent us material indicating how he demonstrates high fidelity; he furnished the music — generally foreground, but sometimes background — for a variety of different social and educational functions. For instance, the Tacoma Art League held a one man show; music was by Branham. For a series of high-fidelity recorded concerts in the Tacoma Public Library Auditorium, all equipment and record-

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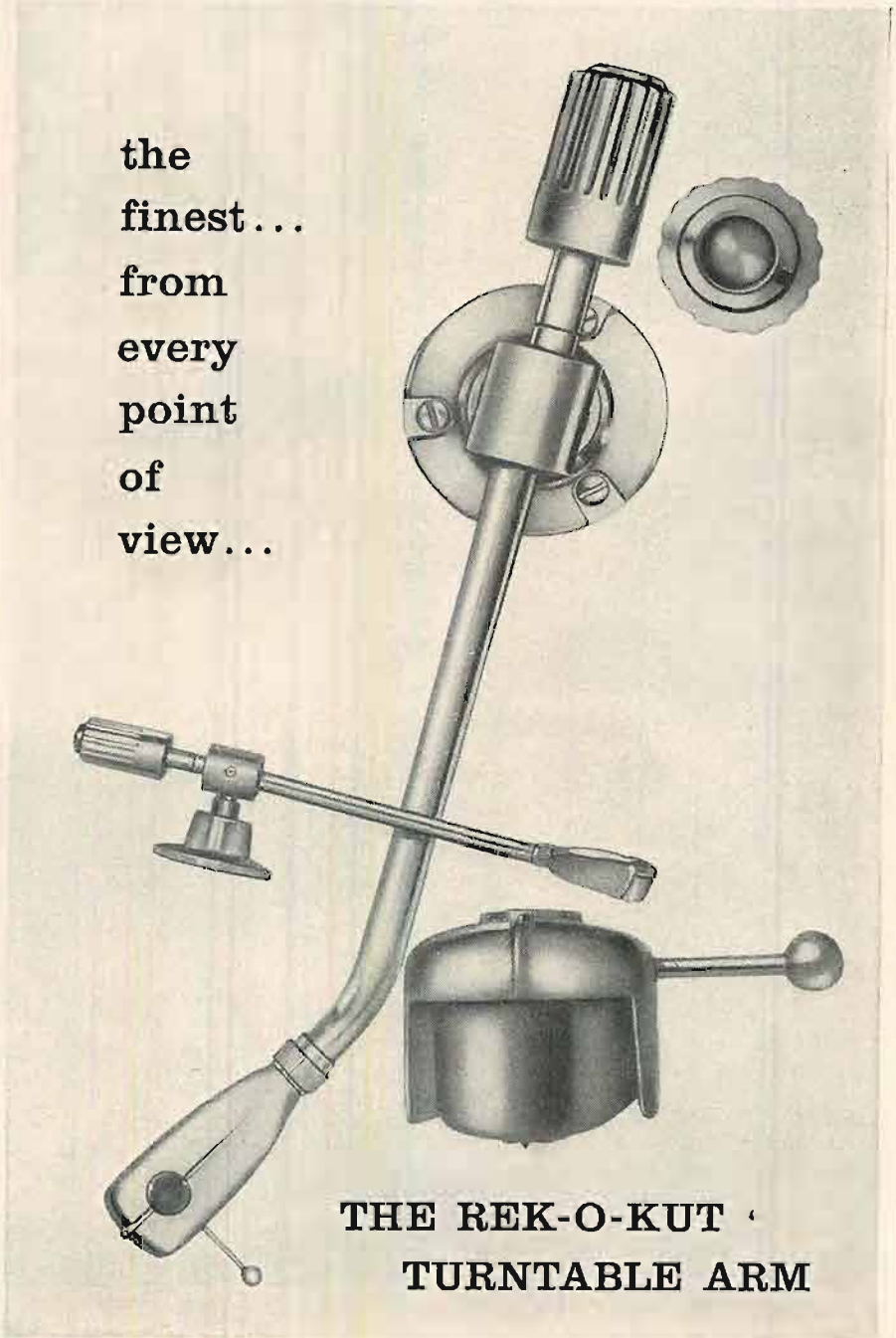
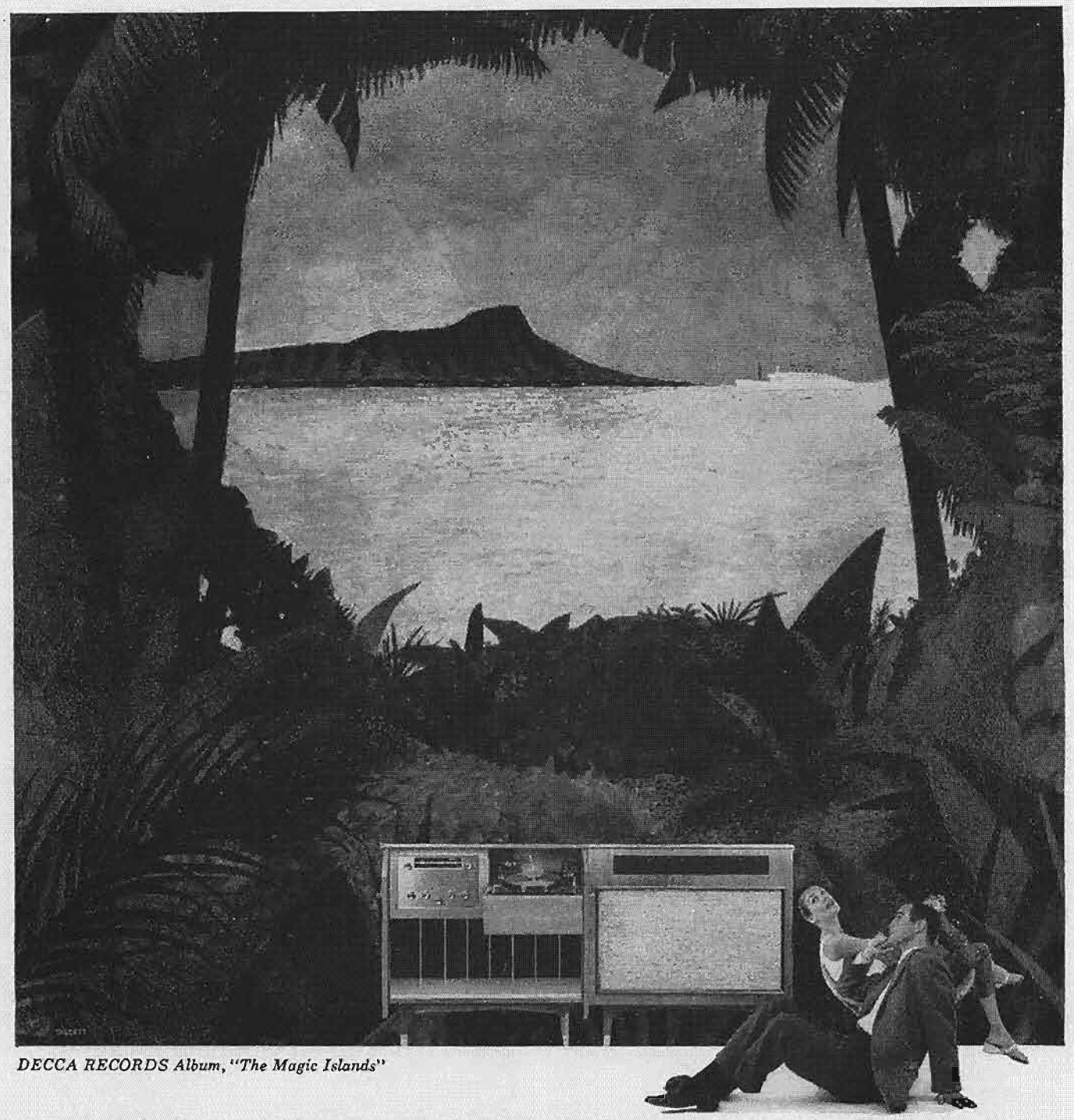


Most superbly styled of all arms — this is also the *one* turntable arm that offers best compliance, lowest resonance, optimum tracking . . . to give you better sound! That is why it is the *one* arm invariably sold with every turntable — *outselling all other turntable arms combined!* Write for catalog and free Strobe disc. $26.95 12" Arm, $29.95 16" Arm.

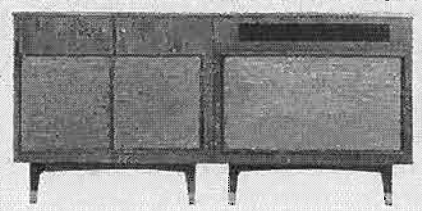
EXCLUSIVE FEATURES! • Patented sealed Versa-Twin bearing pivot provides superior horizontal compliance. • For free vertical motion, arm pivots are mounted in chrome steel ball-bearing races. • Micrometer gram weight adjustment gives correct stylus pressure without need for stylus gauge. • Has easy arm-height adjustment. Takes all popular cartridges.

REK-O-KUT
HIGH FIDELITY TURNTABLES—TURNTABLE ARMS
38-19 108th St., Corona 68, N.Y.



DECCA RECORDS Album, "The Magic Islands"

Put yourself in the midst of the music with the new AMI precision high fidelity AM-FM phono-tuner sound system. Three maximum performance drivers and three exponential horns in an exclusive audio-engineered, hand-made wall enclosure. Separate, matching control console houses sensitive AM-FM tuner with AFC and tuning meter; world-famous Garrard 4-speed record changer; professional amplifier and pre-amp; master control panel with separate, continuously variable volume control; professional 3-step loudness control; precision-calibrated bass and treble tone controls for definite steps of cut and boost or infinite variation; 12 db/octave high frequency rolloff control (scratch filter) all record equalization controls; selector switch for TV, tuner, phono, tape inputs and 5 remote speaker outputs; variable reluctance cartridge with 3 mil sapphire and 1 mil diamond stylii. AMI—one of the world's great sound systems.



For name of your dealer and literature please write AMI Incorporated, 1500 Union Avenue, S. E., Grand Rapids 2, Michigan. Chicago. Zurich.

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Continued from page 29

ings were by arrangement with Mr. Branham. This is a fine way of spreading the word, and Mr. Branham says he'll be glad to help others with concerts and demonstrations. His address is 2240 E. Morton St.

People-to-People

If you haven't used that tape recorder for a while, get it out! We know that a goodly number of HIGH FIDELITY readers exchange tapes with friends. Let's get more people doing it . . . and put a shoulder behind the President's People-to-People Program. In many ways, it seems that more can be accomplished through the exchange of tapes than in almost any other way. Letter writing doesn't have the personal touch and the conviction that goes with a voice.

Stumble Stopper

We've tripped over lamp cords, speaker wires, antenna lead-in wires, and what-have-you in many a home, and tripped over metal wire-coverer-uppers in offices, etc. Maybe a new product, called Electriduct, will be the answer. Anyway, it's a clever idea: a pair of wires molded into a rubber duct shaped like an inverted and broad-based V. It's less than half an inch high, and about 2⅝ inches wide. Can be fastened permanently to the floor with a special tape; comes in two basic styles: (1) as strips, 4 to 10 feet long, with a two-foot regular wire and plug at one end, a double outlet at the other, or (2) as separate components — hollow duct, outlets, corners, etc. Note that in (1) the wire is molded in; in (2), you insert the wire — and it can be coax cable, twin-lead, or speaker wires, as well as lamp cord. The big advantage, it seems to us, is the shallow shape and rubber construction; the danger of tripping is minimized, and you can roll chairs and other objects over the conduit more easily and silently.

For more information, write CMG Industries, 615 S. Second, Laramie, Wyo.

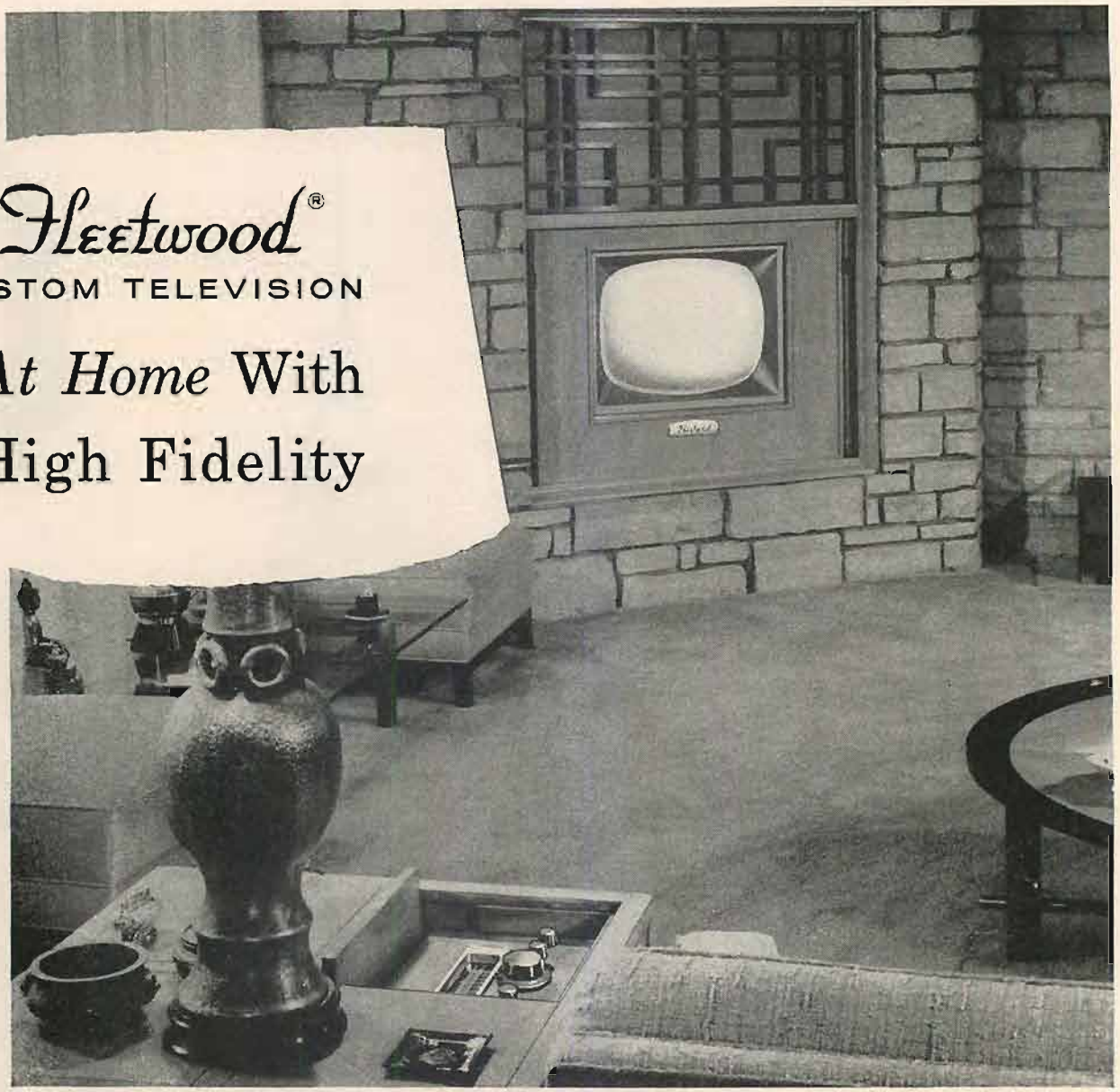
AUDAX TONEARM KIT

A screwdriver . . . 15 minutes of your time . . . and the fabulous Audax tonearm kit — that's all you need to own your own compass-pivot Audax Professional Tonearm *at a big saving!* You'll find accurate assembly of this exclusive kit a very simple affair — with assurance that the final result will be as fine as factory-assembled units! Use any cartridge with your Audax arm. Thrill to the wonderful new difference it makes in your high fidelity system — a difference that confirms your wise choice in owning one of the finest tonearms ever made!

At your dealer { 12" Tonearm Kit **$14.55**
16" Tonearm Kit $17.55

BEST RECORD PROTECTION INSURANCE —
Audax "Micro-poise" . . . the gram weight scale with "prescription" accuracy! $3.95

AUDAX Div. of Rek-O-Kut Co., Inc., 38-19 108 St., Corona 68, N. Y.



Fleetwood®
CUSTOM TELEVISION

...*At Home* With High Fidelity

FLEETWOOD is the *only* television receiver made to complement your high fidelity system and match its quality. Fleetwood's distortion-free audio outputs not only complete your sound system, but make a noticeable difference in television sound quality.

The Definition Control—exclusive with Fleetwood — tailors picture texture to suit individual taste —from soft and diffused to sharp and clear. With Fleetwood, you can have the lazy luxury of remote control. Fleetwood's fully electronic remote control offers you not just channel selection and volume control—but contrast, brightness, volume, channel selection, fine tuning and Definition Control. Non-remote models are also available.

Anywhere you want Fleetwood installed — *it belongs beautifully!* In a wall, room divider, piece of valued heirloom furniture, bookcase — in the living room, den, kitchen, bedroom, recreation room — Fleetwood installations are unlimited!

The professional's choice — Fleetwood is built to the same high quality standards as the broadcast monitors Fleetwood makes for the major networks. Have your dealer give you a demonstration, and you'll agree — for unmatched fidelity of reproduction, it's *Fleetwood Custom Television!*

For a free booklet of installation ideas, complete information and the name of your nearest dealer, write:

Fleetwood® CUSTOM TELEVISION

Crafted by CONRAC, INC. • Department A, Glendora, California

Export Division: Frazar & Hansen, Ltd., 301 Clay St., San Francisco, Calif.

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Free booklet of *installation ideas available from your Fleetwood® dealer or write: Conrac, Inc., Dept. A, Glendora, Cal.*

ARIZONA

AUDIO SPECIALISTS
333 East Camelback Road, Phoenix
Phone: AMherst 5-0447
NILES RADIO & TV CENTER
400 N. 4th Avenue, Tucson
Phone: MA 3-2537

CALIFORNIA

BERKELEY CUSTOM ELECTRONICS
2302 Roosevelt, Berkeley
Phone THornwall 3-4180
AUDIO SALES CO.
1209 E. Belmont Ave., Fresno 1
Phone: AD 7-1401
NEWARK ELECTRIC COMPANY
4736 W. Century Blvd., Inglewood
Phone: ORegon 8-5344 ORchard 7-1127
UNIVERSAL DISTRIBUTORS, INC.
4642 W. Century Blvd., Inglewood 2
Phone: ORegon 85509 ORchard 45740
BUSHNELL ELECTRONICS
12026 Wilshire Boulevard, Los Angeles 25
Phone: BRadshaw 2-7537
CALIFORNIA SOUND PRODUCTS, INC.
7264 Melrose Avenue, Los Angeles 46
Phone: WEbster 1-1557
CRENSHAW HI-FI CENTER
107 Santa Barbara Plaza, Los Angeles 8
Phone: AXminster 3-8201
LOS ANGELES PORTABLE RECORDING ENTERPRISES
525 No. La Cienega Blvd., Los Angeles 48
Phone: OLeander 5-8664
MIDWAY ELECTRONIC SUPPLY CO.
2817 Crenshaw Blvd., Los Angeles 16
Phone: REpublic 1-2451
BUSHNELL'S HARBOR HI-FI
3333 Newport Blvd., Newport Beach
Phone: Harbor 4681
CUSTOM AUDIO
2650 Avon Street, Newport Beach
Phone: Liberty 8-8671
GENERAL ELECTRONICS
4156 Piedmont Ave., Oakland
Phone: OLympic 5-2711
DOW RADIO, INC.
1759 East Colorado Street, Pasadena 4
Phone: SY 3-1197 RYan 1-6683
SOUTH BAY ELECTRONICS
1907 S. Catalina Ave., Redondo Beach
Phone: Frontier 58215
HOLLYWOOD HI-FI
1839 E Street, San Bernardino
Phone: 8-36101
HAL COX COMPANY
2598 Lombard Street, San Francisco
Phone: WEst 1-3134
MUSIC AND SOUND CO.
222 West Portal Ave., San Francisco 27
Phone: MOntrose 4-2830
GRACIE'S RECORDS
304 West Third Street, Santa Ana
Phone: KI 3-2684
EMMONS AUDIO EQUIPMENT
12600 Ventura Blvd., Studio City
Phone: PO 1-2989

CONNECTICUT

DAVID DEAN SMITH
262 Elm Street, New Haven 11
Phone: UNiversity 5-1101
GROVER'S RADIO SHOP
264 W. Main Street, Norwich
Phone: TU 7-0567
WESTLAB ELECTRONICS, INC.
1105 Main Street, Stamford
Phone: Fireside 8-6459
AUDIO WORKSHOP, INC.
1 South Main Street, West Hartford 7
Phone: ADams 3-5041

DISTRICT OF COLUMBIA

SHRADER SOUND, INC.
2803 M Street, N.W., Washington 7
Phone: ADams 4-4730

GEORGIA

BAKER FIDELITY CORP.
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Phone: TR 52156

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ALLIED RADIO CORPORATION
100 N. Western Avenue, Chicago 80
Phone: HAymarket 1-6800
ELECTRONIC EXPEDITERS, INC.
THE HI-FI CENTER
2909 West Devon Avenue, Chicago 45
Phone: RO 4-8640
NEWARK ELECTRIC COMPANY
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ROCKFORD HI-FI
1118 Auburn Street, Rockford
Phone: 3-9169
THE RECORD HI-FI SHOP
Lewis Ave. Shopping Plaza, Waukegan
Phone: ON 2-4445

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PHIL WOODBURY SOUND
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Phone: 20
PLAZA TELEVISION
1408 Huntoon, Topeka
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HI-FI SHOP
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A & L SOUND CO.
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20971 Westgate (Westgate Shopping Center)
Cleveland 26
Phone: ED 1-6448
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Phone: GL 1-0256
PIONEER ELECTRONIC SUPPLY CO.
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Phone: SU 1-9410
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Phone: RA 5844
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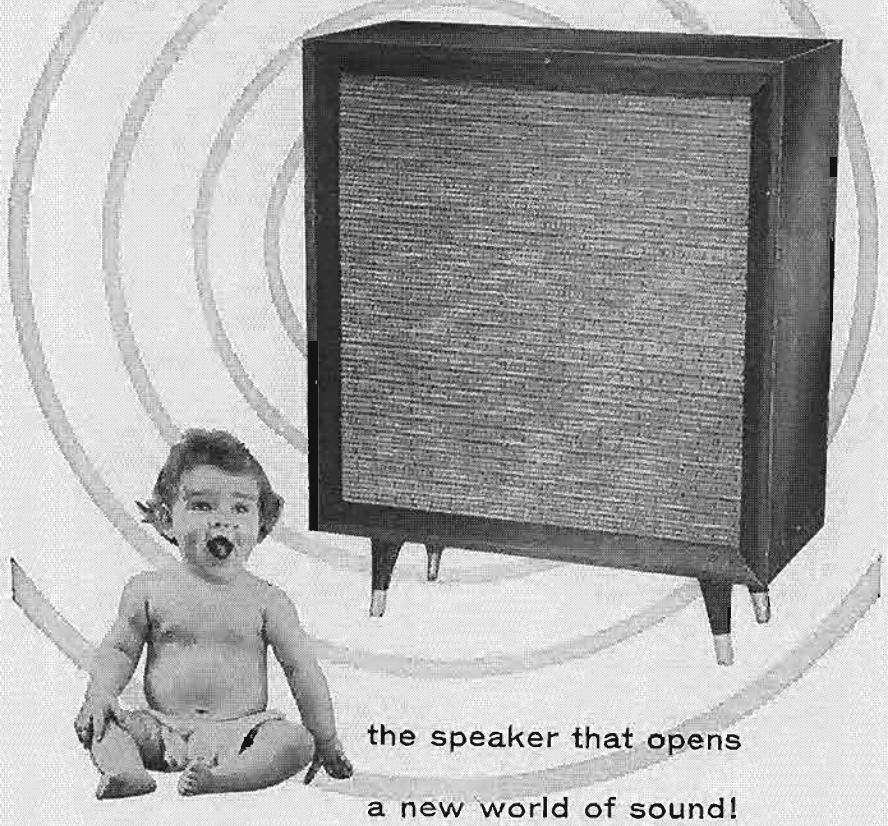


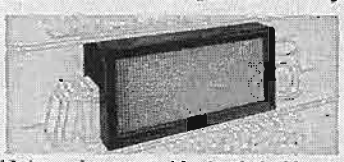
the speaker that opens
a new world of sound!

For years, engineers have strived to achieve really BIG SPEAKER PERFORMANCE IN SMALL SPACE. Today, we can say it has actually been done! Because the Audette *Sr.*—the newest of hi-fidelity speakers—employs all the features of systems many times its size! It is a two-way speaker system, with true Helmholz construction. It has an extremely wide frequency range (45-17,000 cps), and an amazing balance of natural sound. Yet it gives you all this in a cabinet measuring only 22" wide x 10½" deep x 27" high, including matching legs! See it today, hear it today . . . you'll recognize it as the perfect answer to the problem the hi-fidelity industry has long sought to solve—BIG SPEAKER PERFORMANCE IN SMALL SPACE!

In mahogany **$69.50** *In walnut or blonde* **$74.50**

For Small Space without Sacrificing Quality

LORENZ KAL Audette Jr.



Superb two-way speaker performance in a cabinet that measures 11 x 23¾ x 10. Use as a consolette (legs available) or place on table, bookshelf, anywhere! Richly grained Brown or Blonde Tan Leatherette covered case. **$49.50**—*(4 brass legs $5.95)*

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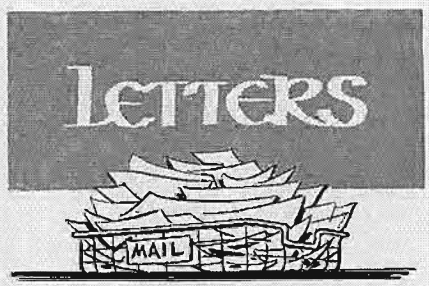

Elgar Enthusiasts

SIR:

The halfhearted attempt at commemoration of the centenary of the birth of Sir Edward Elgar in the June issue was, to these readers anyway, unworthy of your magazine. Granting Mr. Abraham is honest in his open [lack of sympathy with] much of the music of this great composer (a virtue regrettably missing in many music critics), it would seem only fitting that the hundredth birthday of such an important musician would have prompted the publication of an article by one who had made a profound study of his music and who loved and respected it, giving well-grounded reasons for his feelings. Certainly the music of Stravinsky, admittedly one of today's greatest masters, is still controversial, yet you published in this same issue an article which praised his contribution to music without qualification. It is too much to ask to give the same courtesy to Elgar?

An article in *The New York Times* of June 2, written by an English musicologist, stated that the music of Elgar is still the most popular of English music in England, and what is more has never gone through a period of even partial eclipse—an achievement not attained by any of his colleagues, even the redoubtable Vaughan Williams. . . .

Indeed, it would not be too much to ask to commemorate Elgar with recordings of hitherto untouched works. Moreover, there exist in England many fine recordings of Elgar which deserve to be issued in America. . . Elgar himself was a prolific recording artist, having made good recordings for HMV of virtually all his major works—recordings which surely deserve to be reissued. Elgar was one of the truly individual composing minds—not a passage of his major works could have been written by another composer. He is the unique survivor of a unique age in musical history. Surely there must

Continued on page 36

FISHER... FOR DISCRIMINATING HIGH FIDELITY ENTHUSIASTS

CA-40

FM-90X

TA-500

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THESE INSTRUMENTS by FISHER are the outstanding choice of today's discerning music lovers. Each serves a different requirement—the Master Control-Amplifier, Gold Cascode FM Tuner, and combined FM-AM Tuner–Control–Amplifier. In performance, engineering and design, all reflect the twenty-year FISHER tradition for quality.

THE FISHER Model CA-40 Master Control Amplifier

■ The most advanced and versatile unit of its type available today, the CA-40 was designed to satisfy the most critical requirements of the music connoisseur, as well as the professional engineer. On one compact chassis it offers the most advanced pre-amplifier with controls, as well as a powerful, 25-watt amplifier with less than 1% distortion at full output! The Model CA-40 has provisions for six inputs and offers complete equalization and preamplification facilities for both records and tape. An exclusive FISHER First–Tone-Scope provides a graphic indication of Bass and Treble Tone Control settings. In every respect—flexibility, laboratory-quality performance, handsome two-tone styling—the Master Control-Amplifier reflects the creative engineering that has made THE FISHER world-renowned for two decades. Truly, the CA-40 will long serve as the ultimate standard of comparison for high fidelity amplifiers with control facilities. **$139.50**

Prices Slightly Higher in the Far West

THE FISHER Model FM-90X Gold Cascode FM Tuner

■ From Lancaster, Ohio, Fred W. Scholl, Jr. reports, "My 90-X is the most astounding FM tuner I have ever had the pleasure to own or operate, and that includes the best to date. WWJ is our usual station for listening—air line about 245 miles!" FM reception at distances over 200 miles, terrain permitting, is a regular occurrence if you own a FISHER FM-90X. There has never been a tuner like it in radio history. Such performance is no accident, for the key to the unapproached reputation of the FM-90X is the exclusive FISHER Gold Cascode RF amplifier, plus companion circuitry that takes full advantage of the Gold Cascode. Some evidence of the precision-jeweler characteristics of the Gold Cascode's internal construction will be found in the simple fact that we guarantee this tube for two years. with its 0.5 microvolt sensitivity, THE FISHER FM-90X in one overwhelming sweep has rendered all other FM tuners in its price range obsolete. *Chassis,* **$169.50**

Mahogany or Blonde Cabinet, **$17.95**

THE FISHER "500" Complete Receiver

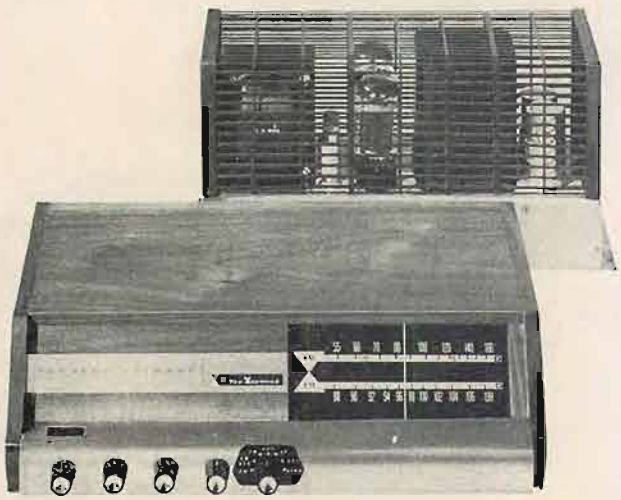
■ On one compact chassis, THE FISHER "500" offers all three basic high fidelity components – an extreme-sensitivity FM-AM tuner, audio control center and powerful, 30-watt amplifier. These laboratory engineered units are professionally combined, and ready for instant use. Simply add a record player and loudspeaker, and you have a complete high fidelity system. THE FISHER "500" is the easiest, and most economical manner in which to acquire matched FISHER components—and in the twenty-year FISHER quality tradition. Among its outstanding features are extreme sensitivity on FM and AM, plus micro-accurate meter tuning. Its full wide-band FM detector provides maximum capture ratio for greater selectivity and superior co-channel rejection. The 30-watt amplifier handles 60-watt peaks—and responds uniformly from 16 to 32,000 cycles. Four inputs. 4, 8 and 16-ohm outputs match all existing speakers.

Chassis, **$249.50**

Mahogany or Blonde Cabinet, **$19.95**

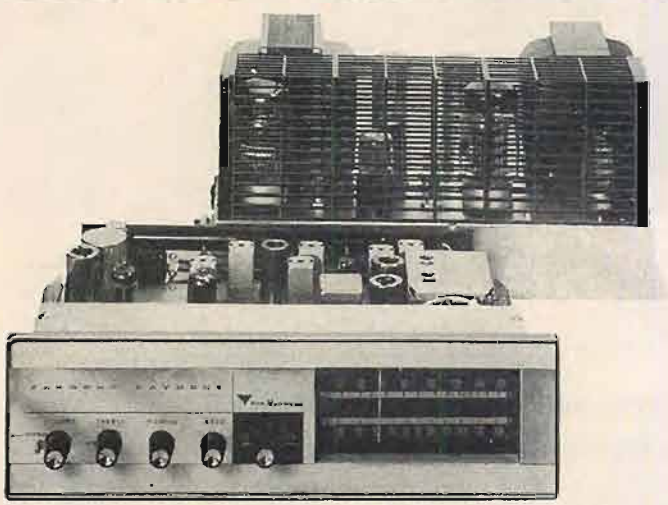
Write for specifications. **FISHER RADIO** Corporation • 21-25 44th Drive • Long Island City 1, New York

SARGENT-RAYMENT
SR-300



*now available with either console mounting escutcheon or cantilevered wood cabinets.

*also available with either 20 watt or 70 watt (using KT-88 output tube) amplifier.



WITH MORE OUTSTANDING FEATURES

The SR-300 "Maywood" AM-FM tuner, pre-amp, tone control and amplifier, has become recognized as "the top performer in its price bracket" among the Nation's leading hi-fi dealers. And now, more flexible than ever, it is available in these four combinations.

SR-300-M (with mounting escutcheon) with 20 watt amplifier . .	**$189.60**
SR-300 (in cantilevered cabinet) with 20 watt amplifier	**$199.95**
SR-300-M70 (with mounting escutcheon) with 70 watt amplifier.	**$249.30**
SR-300-70 (in cantilevered cabinet) with 70 watt amplifier . . .	**$259.43**

Write for brochure on the SR-300 series and other SR products today.

SR SARGENT-RAYMENT CO.
4926 East 12th Street, Oakland 1, California Est. 1927

LETTERS

Continued from page 34

be a place for him in the listening experiences of intelligent musicians.

William W. Zakariasen
Barton L. Wimble
David O. Lane
Flint, Mich.

The Beat Barrier

SIR:

Mr. Pleasants [Aug.] errs, I believe, in implying that musical progress in the last three hundred years was primarily a harmonic development. It may well be true that the quantity of such invention in the last three hundred years is unique, but many writers have shown that the differences between baroque, classical, romantic, and twentieth-century music are best understood in terms of revolutionary rhythmic developments — each at least as new as swing. Observe how in contemporary harmonies a strong reference to baroque music is created by the use of baroque rhythms in Stravinsky's *Von Himmel Hoch Variations* and *Pergolesi* Suite. Mozart's harmonies are often simpler than Bach's, but classical music far surpasses baroque in rhythmic contrast and variety. The discovery of the romantics that distortion of a rhythmic motif is a means to expressive musical architecture opened an even larger number of completely new areas of development.

While a simple statement cannot adequately sum up all the contributions to rhythmic technique made in the last fifty years, jazz has not been alone in developing hitherto untapped resources of the beat. Stravinsky in the *Rite of Spring* abandoned regular meter, causing the unmetered but regular pulse (beat) to be the only constant point of rhythmic reference (save change per se). Bartók used "Bulgarian" asymmetric meters in such a manner as to, in effect, put half a beat between each measure, and, in outlining each measure, made the beat itself a motif (e.g. *Six Dances in Bulgarian Rhythm*). Equally important contributions in this field have been made by Schoenberg's group and perhaps Hindemith could be cited.

Jazz cannot be given most or sole credit for crashing the beat barrier.

David Lidov
Great Neck, N. Y.

Continued on page 39

NO FINGERNAIL FUMBLING!

Exclusive

"T – GUARD"

STYLUS

only with the

PICKERING

fluxvalve

PICKERING'S introduction of the *truly* miniature FLUXVALVE magnetic phonograph cartridge represents a new era in high fidelity cartridge design. This newest of PICKERING cartridges brings the music lover the most exciting and *safest* idea in a stylus assembly since PICKERING introduced the first lightweight high fidelity pickup more than a decade ago.

The "T-Guard" stylus assembly is a quick-change, easy to slip-in unit which eliminates precarious finger-nail fumbling. Its practical "T" shape provides a firm and comfortable grip for safe and easy stylus change.

The most flexible cartridge in the world . . . the FLUXVALVE is the *only* cartridge with the remarkable ½ mil stylus . . . exclusive *only* with PICKERING. The FLUXVALVE can be used with any one of *five* styli, to meet any requirement or application...to play any record, at any speed.

If you are planning to buy a new cartridge – the fact that PICKERING developed this revolutionary stylus is *important to you!* All of the research, development and planning that went into the "T-Guard" stylus is conclusive proof of the superlative engineering skill in every FLUXVALVE model you buy.

FLUXVALVE TWIN SERIES 350 – A turn-over cartridge providing a rapid change of stylus point radius. Available in 12 models featuring many combinations of styli, prices start at a modest $24.

FLUXVALVE SINGLE SERIES 370 – A miniature high quality cartridge for use in any type of auto-changer or manual player arm. Available in 5 models, prices start at a low $17.85.

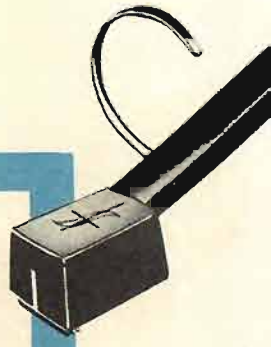
FLUXVALVE features exclusive hum rejection circuit—requires no adjustment!

Model 194D UNIPOISE Pickup Arm—A new . . . lightweight . . . integrated arm and cartridge assembly containing the FLUXVALVE with exclusive "T-Guard" stylus. The complete assembly – tone arm and cartridge – is only a fraction of the weight of conventional tone arms. The high compliance of the "T-Guard" stylus, with the lightweight tone arm and single friction-free pivot bearing assures distortionless tracking of microgroove and standard groove recordings. Available with the ½, 1 or 2.7 mil diamond styli, prices from $59.85.

"For those who can hear the difference" **FINE QUALITY HIGH FIDELITY PRODUCTS BY**

PICKERING & COMPANY, INC., Oceanside, N. Y.

Look . . . only the Fluxvalve *has 100%* IQF*



Choice of the *best* phonograph pickup can *only* be resolved by comparison! What is the yardstick? . . . How can you tell? . . . What do you look for? . . . the answer is 100% **Important Quality Features***!

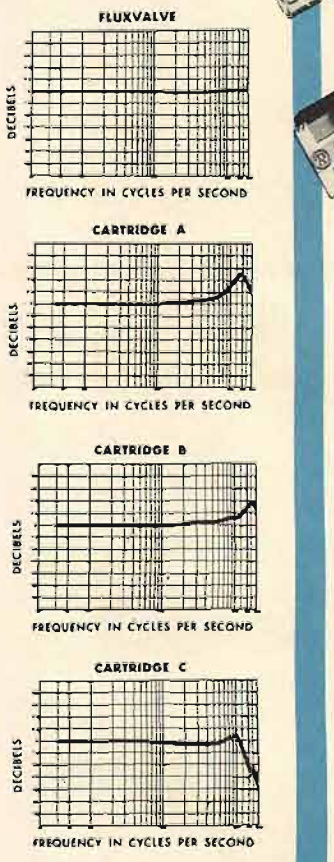
PICKERING has had long experience in the cartridge field, supplying the finest quality products for recording studios, broadcast stations, wired music services, and high fidelity home music systems. As a result of this extensive experience, PICKERING has developed the **FLUXVALVE** . . . the *one* cartridge which incorporates *all* of the **Important Quality Features*** *so* necessary for high fidelity reproduction from records.

Before you choose a cartridge . . .

LISTEN AND COMPARE . . . demand 100% IQF*!

Feature	FLUXVALVE	Cartridge A	Cartridge B	Cartridge C
Frequency Response: Flat 20-20,000 cps ± 2 db (see curves on right)	YES 20 Points	NO 0 Points	NO 0 Points	NO 0 Points
Low Tracking Force, 2-4 grams	YES 20 Points	NO 0 Points	YES Points	NO 0 Points
High Output, No Transformer Required	YES 10 Points	NO 0 Points	NO 0 Points	YES 10 Points
Replaceable Styli	YES 10 Points	NO 0 Points	NO 0 Points	YES 10 Points
½ Mil Stylus	YES 15 Points	NO 0 Points	NO 0 Points	NO 0 Points
One Cartridge For LP's and 78's	YES 5 Points	NO 0 Points	NO 0 Points	YES 5 Points
Anti-Hum Design	YES 10 Points	YES 10 Points	YES 10 Points	YES 10 Points
Hermetically Sealed	YES 10 Points	NO 0 Points	NO 0 Points	NO 0 Points
TOTAL POINT VALUE	100%	10%	30%	35%

FREQUENCY RESPONSE CURVES



Peaks and/or resonances in the stylus assembly at any recorded frequency will distort; and, damage the record groove. Therefore, any deviation from flat response over the recorded frequency band results in eventual breakdown of the groove wall. Deviations of from 3-6 db distort the record material as much as 60-100%.

* **IMPORTANT QUALITY FEATURES** —so necessary for high fidelity reproductio from records.

THE FLUXVALVE . . . chosen time and again as the *top cartridge* solely on the basis of *listening quality* . . . by panels of qualified experts . . . tests which have proven that it is *actually* less costly to own a **FLUXVALVE**

The **FLUXVALVE** preserves the quality and prolongs the life of your record since there is complete absence of resonances throughout the audio frequency range.

It may interest you to know that the **FLUXVALVE**, because of its ability to make *precise* and *reproducible* record measurements, is used for calibrating recording channels and record masters.

Make the IQF* test today . . . listen to your favorite record reproduced with a FLUXVALVE . . . the gentle pickup.

Series 194D UNIPOISE Pickup Arm with FLUXVALVE Cartridge

Model 194D with 1 mil diamond "T-Guard" stylus	$59.85
Model 194D with 2.7 mil diamond "T-Guard" stylus	59.85
Model 194-5D with ½ mil diamond "T-Guard" stylus	65.85

SERIES 370 SINGLE FLUXVALVE

370-1S	1 mil Sapphire	17.85
370-2S	2.7 mil Sapphire	17.85
370-1D	1 mil Diamond	29.85
370-2D	2.7 mil Diamond	29.85
370-.5D	½ mil Diamond	35.85

SERIES 350 TWIN FLUXVALVE*

350-DD	1 mil Diamond	36.00
350-.5DD	½ mil Diamond	42.00
350-DS	1 mil Diamond 2.7 mil Sapphire	42.00
350-DD	1 mil Diamond 2.7 mil Diamond	54.00
350-D.5D	1 mil Diamond ½ mil Diamond	60.00

SERIES 3500 "T-Guard" STYLI**

S-3510	1 mil Sapphire	6.00
S-3527	2.7 mil Sapphire	6.00
D-3510	1 mil Diamond	18.00
D-3527	2.7 mil Diamond	18.00
D-3505	½ mil Diamond	24.00

*Available in many other combinations of styli. **Other stylus radii available on special order.

"For those who can hear the difference" **FINE QUALITY HIGH FIDELITY PRODUCTS BY**

PICKERING & COMPANY, INC., Oceanside, N. Y.

LETTERS

Continued from page 36

Th'art Wrong?

SIR:

Th'art wrong! In your "Don't Be Amazed" editorial in the July issue you said you would sit and wait for letters telling you where you have erred. Glad to oblige.

To begin with, I am a college student: one of the people you ruled out. *Pourquoi?* Married, it's true, but in school.

Secondly, perhaps you people don't know, but the fact remains that if one knows where to go, one can buy hi-fi equipment at wholesale prices. Further, there are gimmicks one can always use to cut the cost of a set. For instance: converting (as I did) an old radio cabinet to hold gear, and building a speaker cabinet. Also, instead of owning a driver tweeter, with the advice of an audio engineer I happened to know, I bought two (wholesale) 3" speakers, stiffened the cones ⅓ of the way with shellac, hooked them up in parallel, to work as a tweeter in my 3-way system. They don't punch out the high frequencies. Rather, the notes drift out into the atmosphere pristinely. I've never liked the popping quality of drivers.

Following is a list of the components I used, and their prices. I don't consider it minimum hi-fi (neither does anyone who has heard the set).

Gear cabinet	$ 0.00
Speaker cabinet (tweeters, squawker infinitely baffled, woofer bass reflex with sounding board)	15.00
Heath preamp	Plus
Heath W-3M amplifier	69.50
Lenco turntable	32.00
GE cartridge, needle	25.00
12" University Diffusicone	26.00
8" Permoflux	13.00
2 3" tweeters	3.00
3-position scratch, rumble filter (custom made)	5.00
University 3-way crossover	25.00
Miscellaneous	10.00
	$223.50

Lewis Turco
Storrs, Conn.

Question: Would reader Turco consider anything less to be acceptable fi? — ED.

Where your problem is a SPEAKER...

it's wise to select one from the STROMBERG-CARLSON components which are MATCHED to perfection

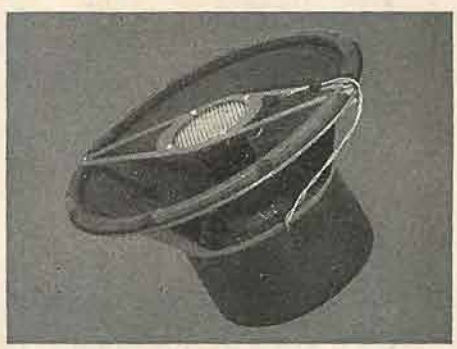
3 POPULAR MODELS

Planning to build your Hi-Fi to an eventual perfection? You'll be smart to standardize on the "Custom Four Hundred"® speaker and component line. We're confident each component from speaker to preamplifier will come out ahead in any comparison of performance and price. *All* are designed in the same laboratory, made under the same quality-control standards, styled in the same modern manner, matched to perform together perfectly!

"There is nothing finer than a Stromberg-Carlson"®

. . . or write for your nearest dealer's name and free literature.

8" RF-460 . . . $20.00 • Frequency response 45 to 14,000 cps. Power-handling capacity, 12 watts program material. Curvilinear shape, molded cone with hard center for improved treble response and wide-angle coverage. Heavy Alnico V magnet provides higher flux density in gap.



12" RF-471 . . . $49.95 • Coaxial mounting of tweeter and woofer. Frequency response 30 to 14,000 cps. Power-handling capacity, 32 watts program material. Better than 100 degrees angle of coverage. Aluminum spider and Carpinchoe leather suspension. 20 ounce Alnico V low-frequency and 2.15 ounce Alnico V high-frequency unit magnets.

15" RF-465 . . . $89.95 • Features the unique "Omega M-Voice Ring" horn-loaded 2½" tweeter and separate 15" low-frequency woofer. Frequency response 30 to 20,000 cps. Power-handling capacity 35 watts program material. Total magnetic flux at voice-coils is 20,000 gauss.

Prices stated slightly higher in the West.

S-C STROMBERG-CARLSON
A DIVISION OF GENERAL DYNAMICS CORPORATION
1719c UNIVERSITY AVENUE • ROCHESTER 3, N. Y.
GD GENERAL DYNAMICS

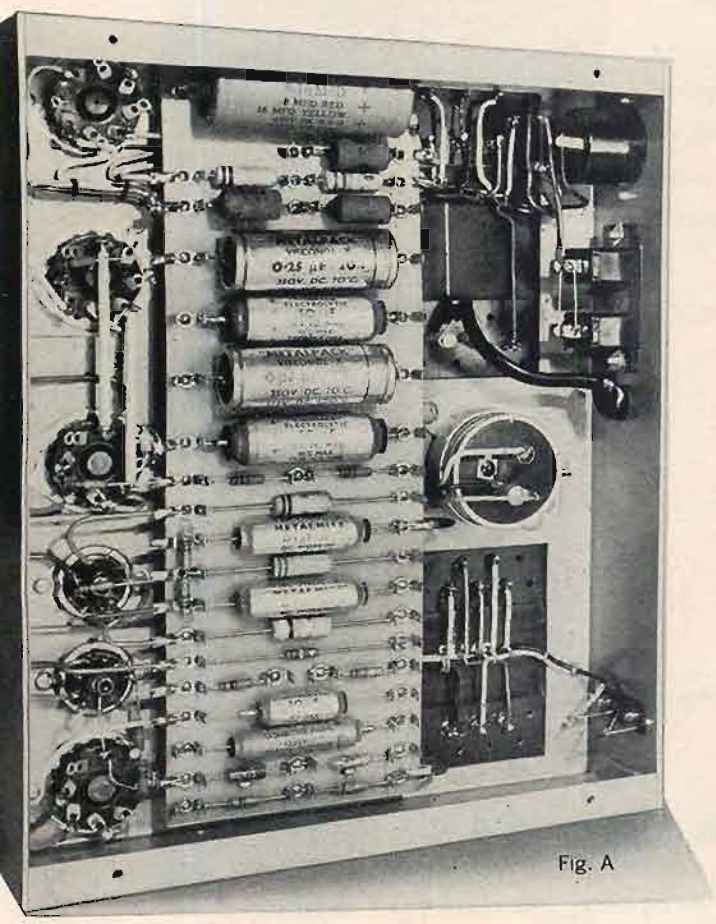


Fig. A

THE 3 NEW LEAK AMPLIFIERS

High power . . . 50, 25, 12 watts . . . all at 1/10 of 1% (0.1%) distortion

The aim in producing these new units was to give the consumer the benefit of broadcast and professional components and workmanship in an amplifier for home use.

Simply stated: these amplifiers incorporate every desirable feature the Trade and consumers have wanted . . . and without compromising the high Leak standard of craftsmanship.

CIRCUITRY

These new amplifiers continue to use a triple loop, negative feedback circuit. The unusually high amount of negative feedback in the Leak circuitry permits us to keep distortion to 1/10 of 1% (0.1%) at full rated output, and to reduce hum, noise and the effects of tube aging or replacement to a minimum. In order to utilize this amount of negative feedback, and to achieve these advantages, a highly stable circuit is necessary. This requires the finest components and great skill in testing and assembly. For example, costly sealed condensers are used exclusively.

POWER RATING

There has been a consistent demand for higher power in amplifiers for home music systems, and recent developments and improvements in output tubes have now made it possible to satisfy these demands without altering the proven Leak circuitry or compromising the Leak "Point One" performance standards. The Leak "TL50 Plus" amplifier employs the newly-developed, high output KT88 type tube; the "TL25 Plus" incorporates the recognized KT66 type, and the "TL12 Plus" the N709 type.

It is important to know what we mean by a 50 watt "plus" Leak amplifier. We rate this amplifier at 50 watts because that is the point at which the harmonic distortion reaches 1/10 of 1% (0.1%) at 1000 cycles. In actual fact, this amplifier can deliver as much as 64 watts, still with negligible distortion. This explains the word "plus" in the model number. In the same way, the "TL25 Plus" delivers 32 watts, the "TL12 Plus" delivers 14 watts . . . therefore, these model designations also contain the word "plus."

CRAFTSMANSHIP

One way to demonstrate the care taken in manufacturing a Leak amplifier is to turn it upside down and compare it with *any* other amplifier. You can show your customer the components used (and incidentally, explain that these components . . . fine as they are . . . are all utilized well below their maximum ratings, which insures great stability and long life). (See figure A). These are the kind of considerations which produce the recognizable difference between Leak sound and that of any other amplifier.

CUSTOMER BENEFITS

You now have, for your customer, three great new Leak amplifiers. You are in a position to assist him in selecting what *he* requires in power and in price . . . with full confidence that you are giving him the finest.

sound dealers and sales personnel...
this advertisement is addressed to you!

It is a complete description of the entirely new LEAK line. Your customers will be asking for information.

3 ENTIRELY NEW LEAK POWER AMPLIFIERS

2 ENTIRELY NEW LEAK PREAMPLIFIERS

THE 2 NEW LEAK PREAMPLIFIERS

Compact, handsome and flexible . . . built specifically and only for the Leak power amplifiers!

The first impression you will get is the handsome, compact look of these preamplifiers. They have been completely restyled in rich gold, brown and white by world-famous designer Richard Lonsdale-Hands.

EXCEPTIONAL VERSATILITY

Careful thought has been given to the varied installations and arrangements to which these preamplifiers must be adaptable. For example, one exclusive feature is the tape recording and playback jacks on the front *and* the rear panels—to facilitate portable as well as permanent tape recording installations.

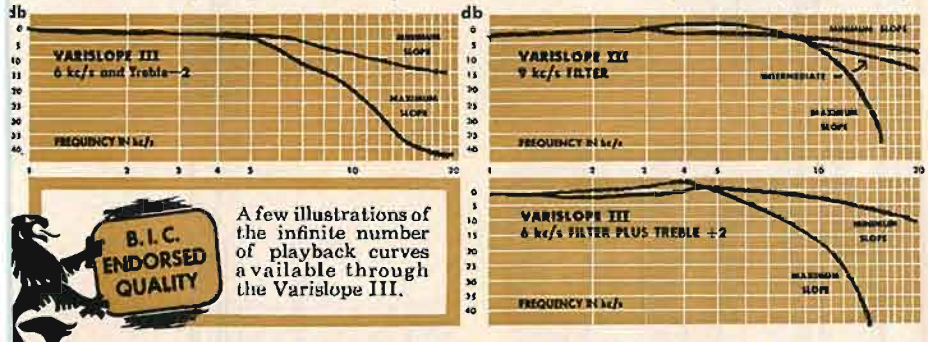
THE NEW "POINT ONE" PREAMPLIFIER

The "Point One" Preamplifier includes more expensive components, and a more complete circuitry than you will find in most preamplifiers. The reason for its low price of $55.00 is that this preamplifier was designed without a power supply, since it takes its power from the amplifier. The "Point One" is a low-noise, low-distortion 2-stage feedback tone control preamplifier. The first stage provides record compensation through frequency selective negative feedback. The second stage embodies feedback tone control circuits, which give continuously variable control of both bass and treble frequencies . . . ± 16 db at 30 c/s and ± 18 db at 20,000 c/s. A 4 kc, 6 kc and 9 kc filter permits comprehensive control of treble frequencies in old or worn records. The four playback characteristics cover all records ever made! The inputs for tuner, tape and phono cartridge each have their own balancing controls! You simply could not give your customer more preamplifier for the money!

THE NEW VARISLOPE III PREAMPLIFIER

This preamp has all the features of the new "Point One" and, in addition, has two magnetic input positions, a rumble filter, and the exclusive Leak Slope Control. This important control makes available an infinite number of equalization positions.

Here's how the Varislope works: When the Filter Control is turned to 9, a filter is switched into circuit, the turnover frequency being 9 kc/s. Other turnover frequencies of 6 kc/s and 4 kc/s are also obtainable. The Slope Control varies the rate of attenuation above the turnover frequency, between 5 db per octave and 35 db per octave. The Treble control is operative at the same time, and you can see that these three give a most versatile control of the high frequency range. In actual practice, records which may sound distorted . . . harsh or shrill . . . can be controlled to remove the distortion, yet keeping all the musical content. This will give your customer the greatest listening pleasure possible for every record in his collection.



B.I.C. ENDORSED QUALITY

A few illustrations of the infinite number of playback curves available through the Varislope III.

HERE ARE THE SIX LEAK GROUPINGS AND THEIR CONSUMER NET PRICES, FOR CONVENIENT REFERENCE:

AMPLIFIER + PREAMPLIFIER = PRICE		
"TL/50 PLUS"	VARISLOPE	$228.00
	POINT ONE	$204.00
"TL/25 PLUS"	VARISLOPE	$188.50
	POINT ONE	$164.50
"TL/12 PLUS"	VARISLOPE	$168.00
	POINT ONE	$144.00

Shipments of these new units have already started. Be sure that you have them on order and on demonstration.
Send for literature for yourself and your customers.

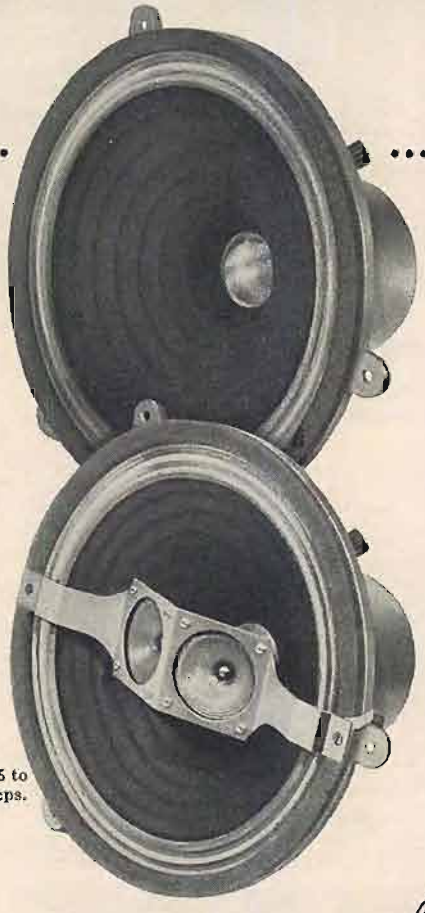
BRITISH INDUSTRIES CORPORATION, Dept. LR-27, PORT WASHINGTON, N. Y.

plenty.....

to this 12" extended range Wigo ($59.50) . . .

you can add cone tweeter array ($20.00) — or buy the complete two-way system initially ($79.50)

Prices slightly higher West of Rockies



25 to 18,000 cps.

....their exclusive "CLIMATE-PROOF-CONSTANT RESPONSE

voice coil and cone suspension" assures you of constantly fine sound quality . . . whether you're in Maine or Florida! Cast aluminum frame and hyperbolic cone design mark the Wigo as a *premium quality* speaker. All this . . . plus the fact that the Wigo way is a wonderful way for your hi-fi system to grow up! It lets you enjoy the best quality *now* . . . and all the quality you'd ever want *in the future!* It's worth listening to a Wigo! Write for catalog.

expand further with other Wigo additions . . . 8" mid-range Wigo 16" super-woofer

wonderful WIGO speakers

United Audio Products (Div. of United Optical Mfg. Corp.), 202 East 19th Street, New York 3, N. Y.

Books in Review

PLANNING my customary fall survey of current and forthcoming audio-book publications, I'm somewhat disconcerted to find myself confronted, for the first time since 1953, by an embarrassing paucity of pertinent materials. At this late midsummer moment of writing I have definite news of only one notable work scheduled for October: the long-anticipated *Techniques of Magnetic Recording* by Joel Tall (Macmillan). Meanwhile, I have actually on hand no more than three appropriate candidates for review, and these are of rather specialized technical value.

At first thought, this apparent ebb in the flood of hi-fi literature seems inexplicable, for certainly the general interest in sound reproduction is surging on to new highs this fall. Yet on reconsideration the contradictory state of affairs well may seem less mysterious. One contributing factor obviously is the near saturation of the first, "easy" market for hi-fi primers and a consequent slackening in the flow of "quickie" publications. A related one is the need for devising new means of presenting both elementary and advanced technical information. And a decisive third factor is simply that pertinent books no longer have to depend on a highly concentrated seasonal sale, but can be released at any time. In short, the present situation probably should be diagnosed as one of those plateaus characteristic of a learning or educational process — the physiologically and psychologically necessary intervals of digestion demanded for the assimilation of past experience and preparation for more meaningful new adventures.

This, then, is an ideal time for resurveying earlier progress as well as for charting new paths — a consideration which also provides justification for my devoting some part of the present column to a *Rückblick*, or retrospective summary of the most significant hi-fi, tape, and related guides, manuals, text, and reference books of the past couple of years. But first, however, the handful of new releases, for all their specialization, should not be without considerable interest even for non-engineer readers.

Sonic Science and Techniques

Most entries in the acoustics category are of course college or postgraduate-study textbooks not likely to attract many lay readers, but the latest of these, Joseph L. Hunter's **Acoustics** (Prentice-Hall, $8.50), warrants special mention as an apt example of the "new look" in this particular field — especially in contrast with the updated in detail but fundamentally old-fashioned approach characteristic of long-popular standard textbooks, such as Culver's *Musical Acoustics*, the fourth edition of which was reviewed here just a year ago.

The first half of Hunter's work, dealing with basic wave and vibration theory, is very hard going for anyone without a secure grounding in physics and mathematics, and the concluding chapters on ultrasonics and underwater sound are of little direct interest to the music lover. But the chapters on loudspeakers, microphones, and architectural acoustics can be of value to any serious reader even if he is unequipped with calculus. The survey of recording techniques is even more useful, while the chapter on "Speech, Hearing, Noise, and Intelligibility" is particularly well calculated to correct most audiophiles' lamentable ignorance of the remarkable advances made in dissipating some of the age-old mysteries shrouding human perception of sonic sensations and aurally communicated information. Hunter's book is no substitute for such monuments of basic research as Beranek's *Acoustics*, Hunt's *Electroacoustics*, and Fletcher's *Speech and Hearing in Communication*, but it is a notably superior college-course text and an encouraging indication that the children of today's hi-fi fans will have a far superior grounding in sonic fundamentals than even their engineering-trained fathers ever enjoyed.

To the technically initiate, a casual "review" of Harry F. Olson's **Acoustical Engineering** (Van Nostrand, $13.50) is quite unnecessary: it is enough merely to note that this is the latest, substantially enlarged, revision of a standard work (formerly titled *Elements of Acoustical Engineering*, originally published in 1940), which in its 1947 second edition has been indispensable to every practicing technician as well as student. But the appearance of its third edition gives me a welcome opportunity both to acknowledge my personal indebtedness to a titan among contemporary authorities and to bring this summation of his lifelong experience to the attention of interested laymen.

Unlike the Hunter work and many other weighty publications in this field, *Acoustical Engineering* is a superbly practical and comprehensive hand and reference work covering in minute detail the electroacoustic engineer's primary equipment components, test and use techniques. And heavily as its pages are peppered with mathematical equations, many of them also can be *read* with immense profit by any serious audiophile even though he lacks professional training. For that matter, the present volume is well worth its cost to the lay reader just for its some 570 illustrations, particularly the vivid, immediately intelligible block diagrams of complex system elements and their relationships. And it is the layman no less than the engineer who can incalculably profit by the chapter on "Speech, Music, and Hearing" and who can be imaginatively stimulated by the chapters (new in this edition) on "Complete Sound Reproducing Systems" and "Means for the Communication of Information" — the last of which outlines the essential patterns not only of familiar media but of numerous others whose potentialities are still to be explored.

Under-Chassis Illuminations

Between the domains of the design engineer and the technically inexperienced layman exists an intermediate area shared by professional technicians who install and repair home sound

Continued on next page

There's a new musical custom in Boston . . .

Music-conscious Bostonians — who are among the most critical audiences alive — all agree that fine music reproduced from records can be *almost* as good as attending live concerts.

So they're establishing a *new* Boston custom . . . by buying their home music systems at The Listening Post.

Why?

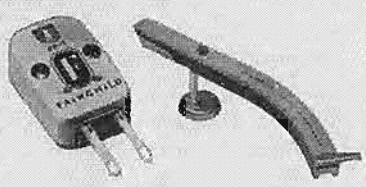
Primarily because The Listening Post's staff comprises engineers with a difference. They're music-loving engineers. The hi-fi systems they suggest are equipment they can conscientiously recommend from an engineering viewpoint. And the elements are selected because these engineers *know* from listening experience that music will come out of them with as much of the "live concert feel" as is possible at the present state of the art.

The components displayed below have been subjected to rigorous scrutiny by Listening Post engineers, and are recommended without qualification. If you'd like more information about these, or other fine instruments recommended by The Listening Post, just clip the coupon below and mail it today.

The Listening Post Enthusiastically Recommends These Components

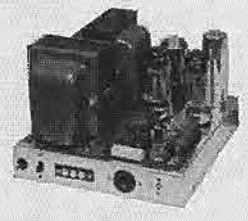
Fairchild XP-3 Cartridge — with Fairchild Arm of your choice. Combine them for the ultimate in record playing performance. 12" arm (280 A) or 16" arm (281 A). No finer equipment made.

Net price		
	XP-3 cartridge	$60.00
	280A	37.50
	281A	39.95



NOW! 60-watt Dynakit Mk III — Latest version of the famous, fabulous Dynakit, with 10 watts more power, plus 4, 8, 16 ohm taps to match all speaker systems. Fabulously low distortion. IMMEDIATE DELIVERY.

Net price		
	Mark III kit	$79.95
	wired	99.95

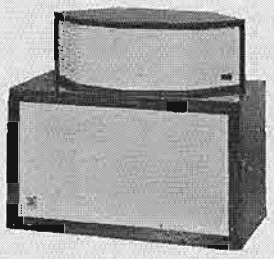


Garrard 301 Turntable — Top Garrard quality at modest price. Adjustable speed for tuning to instruments. Very low rumble and wow.

Net Price		
	Model 301	$89.00
	Base	24.00

JansZen Electrostatic Tweeter and AR-1W Woofer —Acclaimed as the ultimate speaker system. Pure, unadulterated highs; crisp, clean lows. Completely natural reproduction. Available in unfinished or utility models or in choice of finish.

Net Price, both units (mahogany)	$329.00
Unfinished	293.00



All prices F. O. B. Boston, Mass.

THE LISTENING POST, INC.

161 Newbury Street, Boston 16, Mass.

Please ship me

☐ Fairchild XP-3 ☐ 280A ☐ 281A ☐ Dynakit Mk III

☐ Garrard 301 ☐ AR-JansZen (☐ Mahogany ☐ Unfinished)

Enclosed is check for .....

Name .....

Street or P. O. Address .....

City ..... Zone ( ) State .....

BOOKS IN REVIEW

Continued from preceding page

systems and amateur "hobbyists" of varying abilities and ambition. It is precisely this aching gap which is filled at last by Norman H. Crowhurst's **Understanding Hi-Fi Circuits** (Gernsback Library, $5.00; paperbound, $2.90).

Crowhurst's present work, his most ambitious so far, is one of the most ingeniously conceived and organized — and badly needed — in the entire literature. What he does here is to examine all the familiar audio circuitry from the points of view of each circuit's special aptitudes for its particular application and its interrelationships with associated circuits and transducers. Here are informative answers not only to the question of what given circuits (cathode followers, output and input stages, equalizers and tone controls, etc.) actually do, but — far more importantly — *how* the different variations of a given type achieve more-or-less the same results and *why* one particular variation is best suited for a given application.

In short, this is at once a guide to the selection of the "best" audio circuits and a key to the aims of diverse practical audio philosophies. The latter sometimes arouses my qualms, if not ire, when it counters (or fails to endorse) some of my own dogmas — especially where "loudness" and tone controls are concerned, or in the elimination of L-C dividing networks by so-called "bi-amplifier" operation, or in tolerance of pseudo-stereo effects. Nevertheless, I have yet to come across any previous circuit discussions which explained more clearly both their working principles and basic objectives, which threw more illumination on just what happens within an electronic chassis, or which were as rich in sheer reading pleasure as in concise information. Best of all, Crowhurst never loses sight of the ultimate complexity of all sound-reproducing means or the legitimacy of strongly divergent approaches (both practical and philosophic).

Audio Libraries Resurveyed

Such specialized, intermediate and advanced publications as these just discussed are self-evidently not for the technically uninitiated or timid. Many audiophiles will be quite content to

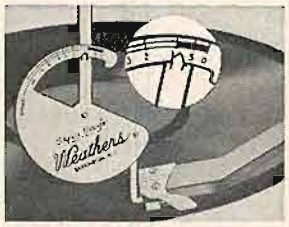
Continued on page 46

the professional touch at your fingertips

WEATHERS FM PICKUP SYSTEM

THE STANDARD FOR COMPARISON IN HIGH FIDELITY PICKUPS

Originally designed for broadcasting and precise sound engineering purposes, WEATHERS FM Pickup has been so advanced in design and construction, that it *can be treated like any ordinary phonograph arm under constant home use.* It is the "perfect beginning" to professional sound reproduction with high fidelity for everyone! Play your records once or a thousand times and with WEATHERS you'll enjoy professionally perfect high fidelity that's distortion-free, carefree!



Perfectly balanced for perfect record tracking

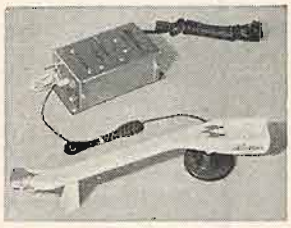
WEATHERS FM Pickup System is the only pickup designed and balanced at a stylus force of ONE-GRAM. For this reason, it perfectly traces all the minute record engravings which produce delicate overtones and represent sound with true fidelity. It causes no flexing of groove sidewalls, thereby improving response to high frequencies without increasing surface noise.

Saves records... preserves Hi-Fi qualities

Improper stylus force can ruin high fidelity qualities of your records at the very first play. WEATHERS, the lightest, professional touch, shows no record wear even after a thousand plays. Your favorite records, your valuable records will last a lifetime—and still sound new! A sapphire stylus on a Weathers pickup will last longer than a diamond stylus on ordinary pickups.

Distortion-free . . . carefree

WEATHERS FM Pickup System is free of all common causes of sound distortion. It does not pick up hum from motors, it tracks perfectly even if your turntable is tilted to a 45° angle, no leveling necessary! Accidentally dropped, WEATHERS pickup floats with feathery ease onto your record. Weathers pickup is shock-mounted...eliminates mechanical vibration and acoustic feedback.



MORE than a pickup, WEATHERS offers more to Hi-Fi

WEATHERS tone arm and pickup is a complete FM system, a virtual miniature FM radio station. Its sole purpose is to pick up and transmit impulses from your record. Your record practically does NO work when played with WEATHERS pickup. The result always is a flat response from 20 to 20,000 cycles.

WRITE FOR WEATHERS FREE BOOKLET ON HI-FI FACTS AND RECORD CARE TODAY!

Weathers

Industries, Div. of Advance Industries, Inc.
64 E. GLOUCESTER PIKE, BARRINGTON, N. J.
Export: Joseph Plasencia, Inc., 401 Broadway, New York 13, N. Y.

you
can
enjoy
the
best
in Hi-Fi

be sure your system includes

MIRACORD XA-100

THE ONLY 2-IN-1 FULLY AUTOMATIC CHANGER AND AUTOMATIC MANUAL PLAYER

MIRACORD XA-100 is the 4 speed record changer that makes Hi-Fi easy for everyone. It does everything *automatically*, at the push of a button . . . starts, stops, repeats, pauses, filters! It intermixes 10" and 12" records! It changes from automatic to manual in a moment. And it has the unique "free-wheeling" tone arm that *can't jam!* No other record-player has *all* these features! So get a MIRACORD XA-100, if you're assembling your own system . . or having your dealer hook-up a system for you! $67.50

. . . and for transcription quality in a 4-speed manual player . . .

MIRAPHON XM—110A

at only $37.50
complete with every feature to satisfy the most critical listener!

ask your dealer for a demonstration

FAR AHEAD› THE FINEST BY FAR

AUDIOGERSH CORP. 514 BROADWAY, NEW YORK 12, N. Y.
WORTH 6-0800 IN CANADA: Atlas Radio Corp., Ltd., Toronto

BOOKS IN REVIEW

Continued from page 44

spare space on their shelves only for such discographies and record evaluations as the Myers & Hill *Record Ratings* (Crown, Aug. 1956*), Kolodin-Miller-Schonberg *Guides to Long-Playing Records* (Knopf, July 1955), Haggin *Listener's Musical Companion* (Rutgers, July 1956), Sackville-West & Shawe-Taylor *Record Guide* and Supplement (Collins, London, July 1956, Mar. 1957), and Hall-Levin *Disc Book* (Long-Player Pubs., Nov. 1955) . . . plus, if institutional modesty permits the citation, the *Building Your Record Library* (McGraw-Hill, May 1956) and 1955 and 1956 *Record Annuals* (Lippincott, Dec. 1955, Feb. 1957) drawn from this journal's own files . . . and crowned, if financial immodesty permits, by the complete series of Clough & Cuming gargantuan *World Encyclopaedia of Recorded Music* and Supplements (Decca, London, via London Records, U.S.A.; 1952, Oct. 1954, Aug. 1957). But even the most exclusively musically oriented listeners surely can find room for at least one work on the instrumentality through which their records come to life — Gelatt's *Fabulous Phonograph: From Tin Foil to High Fidelity* (Lippincott, Sept. 1955); and, if they wish to preserve their cherished disc collections in optimum condition, also for Weiler's *Wear and Care of Records and Styli* booklet (Climax, 1954).

The Facts of Hi-Fi Life for Non-Technicians

Audiophiles with livelier interests in electroacoustical equipment, principles, and techniques are recommended to provide considerably more space for at least one, and perhaps several, of the following audio-library segments: Apart from the booklets included with certain demonstration or explanatory LP albums and some notably informative manufacturer's brochures, the outstanding books on home equipment, its selection, operation, and comprehension, are: Fowler's *High Fidelity: A Practical Guide* (McGraw-Hill, Nov. 1956), Canby's *Home Music Systems* (Harper, 2nd ed., June 1955), James's *Hi-Fi for Pleasure* (Branford, June 1956), and

* Where the parenthetical date specifies a month, it refers to the issue of HIGH FIDELITY in which the book was reviewed; if the year only is given, it is the date of book publication.

the Canby-Burke-Kolodin *Saturday Review Home Book of Recorded Music and Sound Reproduction* (Prentice-Hall, 2nd ed., 1956). Also: *The High Fidelity Reader* (Hanover House, Oct. 1955) of reprinted articles — some general, some semitechnical — from this magazine; and your choice of numerous quasi-magazine paperback surveys (some of which are also available in hard covers) of commercial equipment. I'd recommend first Mayer's *Hi-Fi* (Maco and Random House, Apr. 1956), Hoefler's *Low Cost Hi-Fi* (Fawcett, Apr. 1956), and — for a more straightforward, objective compilation of current system and component models — Herman's *Hi-Fi Equipment Yearbook 1957* (Herman & Stephens, May 1957).

Elementary Electronics and Hi-Fi Circuits

No recent publication has ever quite matched John Mills's *Fugue in Cycles and Bels* (Van Nostrand, 1935, now out of print), but for a general approach to electronics, without much on specific problems of musical reproduction, there is the Rider & Jacobwitz *Basic Vacuum Tubes and Their Uses* (Rider, Feb. 1956). More immediately pertinent are the pioneering *High Fidelity Simplified* by Weiler (Rider, 1952) and the internationally (and deservedly) famous G. A. Briggs series: *Loudspeakers* (1948, 4th ed. 1955), *Sound Reproduction* (1949, 3rd ed. 1953), and *High Fidelity — The Why and How for Amateurs* (Apr. 1957), all of which, originally published by Wharfedale in Great Britain, are now issued in this country by Herman & Stephens.

Introductory Tape-Recorder Books

A clear first choice is the meaty booklet, *How to Make Good Tape Recordings*, by LeBel (Audio Devices, Feb. 1957). Next, Westcott's *Tape Recorders: How They Work* (Sams, June 1956) — primarily for its history of tape recording and analyses of equipment, and Weiler's *Tape Recorders and Tape Recording* (Radio Magazines, June 1956) — primarily for its practical home-recording guidance. Another primer — a "book" only by courtesy — is definitely not to be missed for its demonstrations in actual sound: Bayha's *All About Tape on Tape* (Tape Recording Magazine,

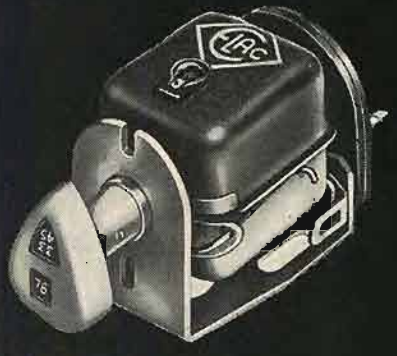
Continued on next page

MIRATWIN

world famous quality cartridge brings out

THE BEST IN ANY HI-FI SYSTEM!

MIRATWIN
mst-1 single
with diamond stylus for LP
or standard diamond stylus
Formerly $34.50 **NOW $26.50**



MIRATWIN
mst-2 turnover
with sapphire stylus
for standard and diamond
stylus for microgroove
Formerly $45.00 **NOW $31.50**

NOW AT NEW LOW PRICES!

If you have a hi-fidelity system, bring out its finest tonal values with MIRATWIN. Because MIRATWIN is as smooth and sensitive a cartridge as man can make . . . faithfully transmits the *complete* recorded sound! Acclaimed by audio engineers and music appreciation enthusiasts alike, MIRATWIN fits *all* standard tone arms, has instant stylus replacement. Enjoy it in your hi-fidelity system for the *best* in recorded music! Recommended tracking force when used in separate tone arms 4 to 8 grams; in record changers 6 to 8 grams. Ask your dealer to give you an A-B Test today.

MIRATWIN CARTRIDGES		REPLACEMENT STYLI	
MST-1D *Single Diamond*	$26.50	DM-2 *Micro-Diamond*	$16.50
MST-1S *Single Sapphire*	10.00	DN-2 *Standard Diamond*	16.50
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This was gratifying, especially so because there had been strong misgivings here about marketing the tweeter without a woofer to match. (Not that we had any choice. It is almost axiomatic among small manufacturers of precisely crafted devices that you must sell one product to pay for the development of the next.) Worthy woofers existed, but they had been carefully designed—good woofers do not just happen—to complement tweeters of operating principle similar to their own: a moving coil driving a cone or diaphragm. Most of them, when teamed with electrostatic tweeters, showed irreconcilable variances of phasing, midrange roll-off, transient attack, impedance, and efficiency.

A few, fortunately, worked rather well, earning our recommendation, and it must be said here, with profound respect, that certain ingenious home sound experimenters managed with multiple woofers and special enclosures, to produce sound with which we could find no fault at all, except that it cost them more hours and/or dollars than most people can afford.

Obviously, we still had an obligation, but we had not been delinquent about it. As soon as the 130 was launched, Mr. Janszen and his staff had gone back to work designing a bass speaker to complement it. Silence was imposed until he could be reasonably sure of success; premature mention would have been unfair both to prospective buyers and to other manufacturers. Early last summer he admitted he had something satisfactory, which is for him a wildly enthusiastic statement. We present this product to you, as the JansZen DYNAMIC woofer. It consists of one cone in a special cabinet. It is unique in some particulars. It had to be, because it was conceived, designed, and empirically crafted to work in seamless sonic unison with the 130 tweeter. It does. Expert listening juries have been (happily) unable to detect its point of crossover. Further, it is small, hearteningly inexpensive, and capable of clean, solid bass down to a measured 30 cycles per second. You will be able to buy it either by itself or in a common enclosure with the 130, come October.

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BOOKS IN REVIEW

Continued from preceding page

7-in. reel, reviewed in HIGH FIDELITY, "Tape Deck," Apr. 1957).

Intermediate and Advanced Technical Studies and Textbooks

Crowhurst's *Understanding Hi-Fi Circuits* (Gernsback Library, Oct. 1957), Villchur's *Handbook of Sound Reproduction* (Radio Magazines, May 1957), Wilson's *Gramophone Handbook* (Methuen, London, Mar. 1957), Fidelman's *Guide to Audio Reproduction* (Rider, 1953), Hickey & Vallines *Elements of Electronics* (McGraw-Hill, Feb. 1956), Cohen's *Hi-Fi Loudspeakers and Enclosures* (Rider, Sept. 1956), the 1956 *Hi-Fi Yearbook* (Henslow, London, Sept. 1956), Marshall's *Maintaining Hi-Fi Equipment* (Gernsback Library, Sept. 1956), and Turner's *Basic Electronic Test Instruments* (Rinehart, Sept. 1956). Also the technical and semi-technical article reprints from *Audio* ("Audio Anthology III," Radio Magazines, Mar. 1957), *Radio & Television News* ("Hi-Fi Annual I," Ziff-Davis, June 1956), and *Popular Electronics* ("1957 Hi-Fi Guide & Yearbook," Ziff-Davis, May 1957).

Larger Reference and Source Books

Langford-Smith's *Radiotron Designer's Handbook* (RCA Victor, 4th ed., 1953), Olson's *Acoustical Engineering* (Van Nostrand, 3rd ed., Oct. 1957), Fletcher's *Speech and Hearing in Communication* (Van Nostrand, 2nd ed., 1953), Read's *Recording and Reproduction of Sound* (Sams, 2nd ed., 1952), Beranek's *Acoustics* (McGraw-Hill, 1954), Hunt's *Electroacoustics* (Harvard & Wiley, 1954), Terman's *Electronics & Radio Engineering* (McGraw-Hill, Mar. 1957), *Elsiever's Dictionary of Cinema, Sound and Music in Six Languages* (via Van Nostrand, Aug. 1957), and the still far from obsolete Helmholtz *On the Sensation of Tone* (1862; Dover reprint 1954).

GRACE NOTES

Electronics for Everyone. Monroe Upton's breezy, "Now, this won't hurt — much," TV science-lecturer's style may be hard for some readers to take, but his popularized story of electronics' fabulous history and achievements is infectiously enthusiastic and packs an

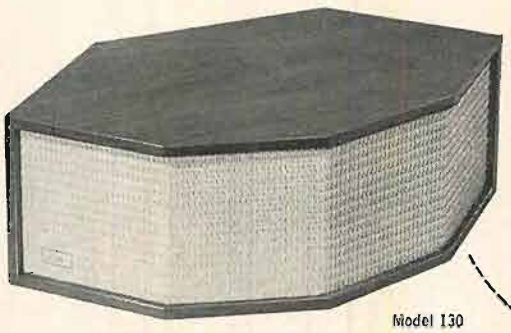
amazing amount of information into some 300 pages — helpfully illustrated by William Carson's informal sketches and diagrams. Originally published in 1954 by Devin-Adair, the present edition is revised and expanded to cover not only Upton's first loves (radio, TV, and radar) but also at least some information on hi-fi sound reproduction, transistors, etc. At its present price a real bargain (New American Library "Signet" paperback, 50¢).

Hi-Fi Handbook. Another in the seemingly endless flow of "practical," semitechnical, popular guides. The name of the author (William F. Boyce) is new, but there is little novel about his material, which follows closely the now sacrosanct pattern of a general introduction to the natures of sound, fidelity, and distortion . . . followed by main-component studies (loudspeakers; enclosures; amplifiers, preamps, controls, and program-source equipment) . . . and concluded by a discussion of systems design, selection, and installation. There is a wealth of useful enough information in these 224 extensively illustrated pages, but no attempt to clarify basic principles (e.g., impedance matching) for the complete electronic novice, and the writing itself is pedestrian at best (Howard W. Sams & Co., $3.00).

"New" New High Fidelity Handbook. The first adjective is enclosed in quotes since the current revision of the big Irving Greene and James R. Radcliffe hi-fi guide differs from the earlier edition (reviewed here Oct. 1955) only in minor details. There are perhaps thirty or more illustration substitutions (mostly equipment photographs) and an expanded "Buyers' Guide" section; but except for typographical corrections, the text seems unchanged — despite the fact that it has become decidedly out-dated on matters such as the use of the RIAA recording characteristics, recorded and stereo tapes, etc. My earlier impression of excessive commercialization in the general approach remains unchanged, too, but obviously the wealth of practical advice on choosing and assembling hi-fi home-system components has been welcomed by many readers and is still likely to appeal to many more (Crown, $4.95).

R.D.D.

JansZen Electrostatic



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Whodunit

LATELY A MAN wrote and asked us: "Who, or what, started all this, anyway?" He meant, of course, high fidelity, and not only as audio technology but as a cultural phenomenon, *in toto*. This may be a question of no obvious practical importance, but it interests us as chroniclers of the high-fidelity era — in part because there can be so many different answers to it.

There is one theory we are bound to hear advanced vigorously and often through 1958, which will be microgroove's tenth year. This is, of course, that the present enthusiasm over reproduced music — and other sound — stemmed directly from the development of the narrow-groove, vinyl disc. The magnetic tape people also may share in this claim, since almost simultaneously with the appearance of LP (or "Lp": Columbia, please take a bow), the tape recorder became the recording engineer's prime tool. And thus we have high fidelity beginning in 1948.

But then what shall we do about Major Hartley? H. A. Hartley, long-time maker of fine British loudspeakers, says he invented the term high fidelity in 1927, and thus he probably ought to be conceded some part in launching the whole thing. Certain other elder statesmen of the audio industry dispute this claim, saying the phrase was current *before* Hartley invented it. Both could be right. "High fidelity" is a lively and potent pairing of words, but there is no reason it could not have occurred independently to two or more people in the exciting early days of electrical sound reproduction.

Anyway, I am not sure such ancient history is very relevant to our inquiry. In the first place, although the experimenting then in better sound reproduction, both professional and amateur, was ardent enough, it remained esoteric in atmosphere. No sizable portion of the public was stirred into acquisitive frenzy by hearing about it. And, in the second place, this indifference may have been justified. What the experimenters — in the 1930s, let's say — were able to achieve in sound reproduction was admirable but patently incomplete. Quite respectable loudspeakers and amplifiers could be bought or made. And, in radio and recording studios, fairly good microphones and recording-heads had been put to work. But there was a gap between the two stages. The signal propagation in AM standard broadcasting was, on the whole, rough. And there were not available to the general (or even the uncommon) home listener phono pickup cartridges which could be described, even mendaciously, as high-fidelity. There was, in short, nothing to feed the amplifiers and speakers. And so the high-fidelity promise, though not undreamed of in 1936, was certainly unfulfilled.

Edwin H. Armstrong invented FM in 1933, but not until after World War II did it become commonly available to broadcasters. Then there was considerable publicity, and tuners began to be built. Public interest stirred. And at this time, fortunately, came the development that filled out the picture (and the picture includes FM, which for some time was to be mainly concerned with the broadcasting of records). In 1946, within weeks of one another, General Electric and the Pickering Company put forth variable reluctance magnetic pickup cartridges. These were indisputably high-fidelity devices; they were not formidably expensive; they were just what the canny home music enthusiast had been waiting for.

It is no misstatement, either, to say that he had been waiting. Microgroove was yet to come, but musical recorded treasure, in very estimable fidelity indeed, had begun to abound. London-Decca had coined the magic acronym "ffrr" and had sent us samples which could not be resisted. Music lovers among the American and British invasion teams had tasted at the master vaults of Telefunken and Deutsche Grammophon, and relayed hints of wonders to come. E.M.I. of England was making free with its stores of high grade lac and its hoarded talent. The American companies even tried some plastic 78s.

There was one more complication, for which, in retrospect, we should be grateful. Ready-made radio phonographs were in short supply, expensive, and, in general, not equipped with FM tuners and magnetic cartridges. In consequence, the impatient music lover went hunting in wholesale parts shops. There he found he could buy not only Pickerings and Pilotuners, but amplifiers, loudspeakers, and turntables as well — and at a saving.

The word really spread. All at once, in New York, Altec-Lansing, a firm earlier concerned almost exclusively with movie sound, found itself bemusedly equipping a room to demonstrate *home* music systems. Bogen and Bell discovered that living rooms had become as important to them as public-address trucks and skating rinks. Allied Radio, Sun Radio, Lafayette Radio started feverishly to add special sections to their mail-order catalogues, titling the subdivisions — with fingers crossed — "high fidelity." A vice-president of Jensen Manufacturing Company contributed a brief article on bass-reflex speaker enclosure theory to the *Radio Yearbook*, and was promptly swamped with letters from all over the nation. Finally, in May 1947, newsstands were adorned with the first issue of the first magazine devoted to the new craft and trade, *Audio Engineering* — now, of course, *Audio*. (*High Fidelity* didn't appear till four years later, so we can't claim credit for starting anything except ourselves.)

So, if Year One of the present high-fidelity enthusiasm had to be picked, we'd pick 1947. As for who sparked it — the enthusiasm, that is — our choice probably would be General Electric and Norman Pickering, who happened to do the right thing at the right time. If you have other candidates, we won't argue. There's honor enough to go around.

J.M.C.

THE OPERATOR

by **PAUL MOOR**

Combine in propulsive proportions a resistless ambition, an enormous talent, an inherent dramatic flair, and a strong isolating pride— and you have the success story of Herbert von Karajan, a man who has become a legend in his own time . . .

HAUERT

WHATEVER REACTIONS may be aroused among listeners at a concert or an operatic performance led by Herbert von Karajan, notably absent from among them will be indifference. This handsome forty-nine-year-old, Austrian-born conductor, who has been called "*Generalmusikdirektor* of the Continent of Europe," seems almost to *force* an emotional response out of people — always strong, but fiercely divided.

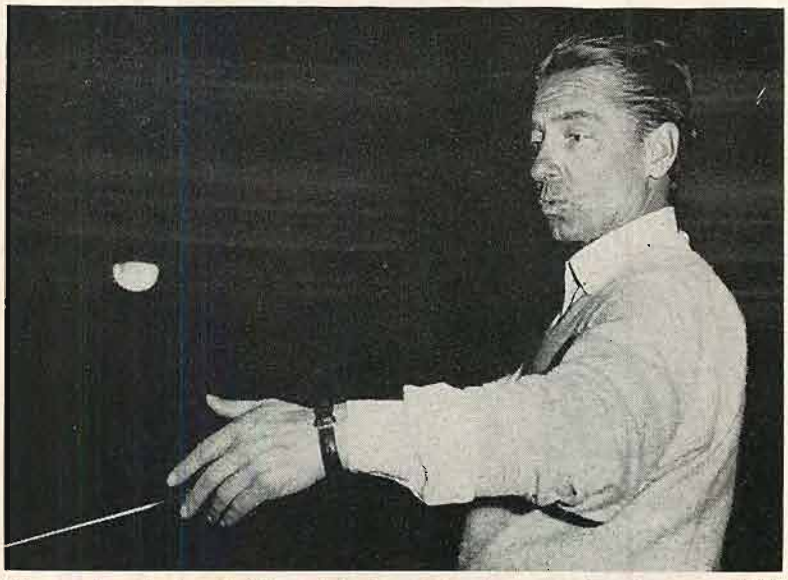
His detractors denounce him for affectation, pointing derisively to the session of something resembling meditation and prayer he goes through just before raising his baton — whereafter he conducts the entire work with his eyes tightly closed. His supporters defend these characteristics as the purely coincidental outward mannerisms of a nature too utterly consecrated to art to care about trivia. Some people — solid musicians among them — are so repelled by Karajan's almost visible aura of arrogance that they do not trust themselves to criticize his performances objectively; they go to hear him in the grim hope that he will be at his best. Usually they are not let down. Others claim unequivocally that Karajan is, as one of New York's leading critics has called him, "Europe's greatest living conductor." This divided attitude towards Karajan can even be embodied in a single person. Asked recently what his honest regard for the man was, a celebrated musician who has played frequently as soloist with him paused a moment to consider and then said soberly, "*Je l'aime et je le déteste.*"

No one on earth apparently could care less about such matters than Herbert von Karajan himself, whose rise to power has from the beginning been as compulsive as that of Budd Schulberg's boy in *What Makes Sammy Run?* People who knew Karajan during his childhood in Salzburg, where he was born, say that from the beginning the only thing that mattered to Herbertchen — mattered more than affection, or popularity, or esteem — was being on top in whatever he did, whether playing the piano or skiing or whatever, and regardless of its cost to him in pain or effort. This

drive was no mere desire to excel: it was a life-and-death necessity to be one up on his associates. But here the parallel with Sammy Glick stops; for while Sammy's rise and his unlamented fall were based on a reputation built by lying, cheating, and flattering, Herbert von Karajan's position today as virtual lord of all European musical creation, while perhaps as lonely as that of Sammy Glick, has been built through years of hard, unrelenting work and represents only the just deserts of one of the most flamboyant and meteoric musical endowments which this century has yet revealed. Furthermore, Karajan shows not the slightest indication of falling; the city of Berlin acknowledged this three years ago when, upon the death of Wilhelm Furtwängler, Karajan was engaged as conductor of the Berlin Philharmonic for the rest of his life.

Although Karajan has become one of the most famous musical figures in the world today, he never has sought notoriety as such and never — to understate almost flagrantly — has courted the press. Indeed, at times he has shown himself — notably during the American *brouhaha* over his onetime Nazi Party membership — almost defiantly maladroit in his relations with the purveyors of public information. The inevitable result has been that a miasma of rumor and speculation has spread about Karajan, in such untrammeled fashion that some of his associates claim these whispers amuse him, that he is fully aware such things are the *sine qua non* for building the Karajan legend. Is it true that Karajan bought himself Tangier cirizenship to avoid paying German income tax? Or that his ardor for Hitler was such that he left Austria in order to come to Germany where he could join the Nazi Party? Or that his "non-Aryan" wife was made an "honorary Aryan" by personal decree of the top Nazis? Or that Wilhelm Furtwängler hated the ground Karajan walked on, and would turn over in his grave if he knew Karajan today had succeeded him not only in Berlin but also in Vienna, Salzburg, and Milan? Although such whispers surge and eddy round Karajan's handsome head in unique profusion, his attitude is that these things have nothing to do with his standing as a musician and that his private life is entirely and absolutely his own affair. However, the result of his consistent refusal to discuss such matters has aided, of course, the manifold growth of such gossip — and of the Karajan legend.

Since legend is at least to some extent inescapable for a man of Karajan's dazzling attainments, the only reasonable thing one can do is try to sort out speculation from fact, and get the facts straight. The primary facts are well known, and are stark and breathtaking in their simple majesty. Karajan is, as mentioned, permanent conductor of the Berlin Philharmonic, one of the noblest orchestras in Europe. This job, to which most mortals would willingly dedicate their lives, is only one of *six* which Karajan holds — and the other five are only slightly less illustrious. In Vienna, Karajan is musical boss of the great old *Gesellschaft fur Musikfreunde* and also of the Vienna State Opera, in some ways the greatest opera house in the world. In Salzburg he is chief of the Salzburg Festival, itself a demanding, year-round job. In Milan, he is head of the German wing of La Scala. And in London, in concerts, recordings, and on tour, he is chief conductor of Walter Legge's Philharmonic Orchestra. For all practical purposes, the stripling of Salzburg has reached the state of



"He remains aloof, a highly polished precision instrument. . . ." HAUERT

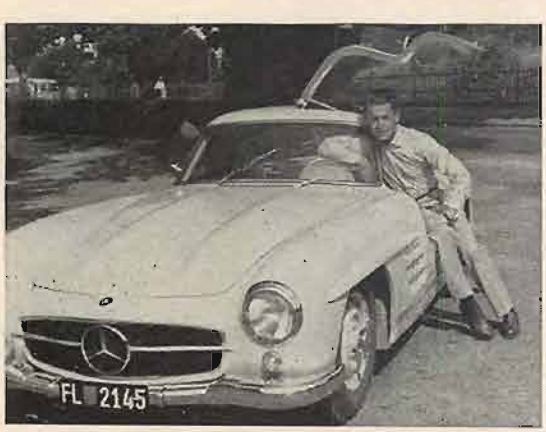
Alexander the Great, of having no new worlds to conquer.

There is another similarity between Alexander of Macedon and his latter-day musical equivalent, that of ethnic origin: it is not generally known that Karajan's forebears, named Karajanopoulos, until about 250 years ago were one of the noble families of Macedonia. Herbert was born in the tradition-haunted town of Salzburg in 1908, the second son of a doctor who was also a good enough clarinetist to play in the Mozarteum orchestra. It was a matter of course that Herbert be given piano lessons, but the ferocity with which he hurled himself into this new venture, and the dizzying progress he made, swiftly brought home to his somewhat shaken parents the awareness that they had whelped a tiger. The piano he vanquished easily; the record shows the customary prodigy's entries — first recital at five, first small tour at fourteen. It was none other than unlikely old Bernhard Paumgartner — today still in Salzburg, the very antithesis of the flamboyant Karajan — who took a hand, advising the enormously gifted young pianist to concentrate on a career in conducting. Karajan

PHOTOS BY HAUERT

In rehearsal, eyes are not closed.

With Walter Legge of E.M.I.



The car is a Mercedes SL 300.

went to Vienna, where he studied with Franz Schalk, at the Opera, and pursued academic courses at the University.

Some people warned Karajan against giving up a pianist's career; getting started as a conductor, they said, took so terribly long. For Karajan it took one year. His first break came in Salzburg, with the traditional sudden illness of the scheduled conductor which is a more or less obligatory event at the beginning of a young conductor's career. The work Karajan took over at short notice and conducted was Beethoven's *Fidelio;* he was nineteen years old. His success was such that the German city of Ulm, knowing a good thing when they heard about it, not only signed him up forthwith to conduct opera and concerts, but signed him for seven years — a most unusually long stretch for a virtual beginner.

In 1934, after serving his contracted time in Bavaria, Karajan accepted the position of *Generalmusikdirektor* of the city of Aachen, near the Belgian border. Aachen has the reputation of being a post where nepotism and influence play absolutely no part in the choice of a conductor, with the result that the men who got their real start in Aachen make an impressive list: Fritz Busch, Paul van Kempen, Karajan, and, currently, the rising young Wolfgang Sawallisch.

As word spread about the new flash conductor in Aachen, the big time began to beckon. Karajan conducted *Tristan und Isolde* at the Vienna State Opera when he was twenty-eight, in 1936. However, he was never in any hurry to go along with new offers unless the terms were right. When the Berlin Philharmonic offered him one of its Tuesday concerts, Karajan politely refused, and waited until the same orchestra was ready to engage him for its more prestigious regular series. This was not long in coming. In 1938, Karajan made his Berlin debut — at one of the Berlin Philharmonic's regular concerts.

His success was immediate and electrifying, but it directly resulted in his incurring the wrath of Wilhelm Furtwängler, thus giving rise to a one-sided feud which ended only with Furtwängler's death in 1955. There are uncountable aspects and sidelights to the situation. By 1938, the Nazis' control of Germany's artistic life had become all but absolute; after all the country's leading Jewish artists had left, the Nazis' one remaining musical *bête noire* of major stature was Paul Hindemith, whose opera *News of the Day* had earlier moved Hitler to stamp out of the Berlin Stadtische Oper in a blind rage. When the Nazis later banned performance of another Hindemith work, *Mathis der Maler*, Furtwängler so courageously championed Hindemith, even to the extent of an astonishingly obdurate and audacious personal correspondence with Göring himself, that the Party panjandrums relegated Furtwängler to the doghouse. This was the situation when brilliant young Herbert von Karajan, five years a Party member in good standing, came to Berlin and conducted a Philharmonic concert and a Berlin State Opera performance of *Fidelio* which left no doubt as to his superior musical gifts. Karajan from then on received, to Furtwängler's detriment, all the backing the grateful Party could give him. The State Opera and the Staatskapelle, which had been Furtwängler's, were turned over to

him. Furtwängler, who until the collapse of Germany in 1945 so skillfully maneuvered himself that he never had to join the Party and who made it a matter of principle to decline Nazi Propaganda Ministry engagements in the German-occupied countries, regarded the newcomer as a contemptible opportunist and *arriviste* — an opinion certainly not completely uncolored by the great old man's edgy awareness that Karajan was the only conductor in Europe beginning to give him any serious competition. Karajan's admiration for Furtwängler never wavered. He attended every Furtwängler performance he could, and on at least one occasion took steps to effect a meeting in order to clear up what he thought were basically nonexistent differences, but the old man remained adamant. Even after the war there were exacerbations — a tug of war over rehearsal time with the Vienna Philharmonic, the demurrer of a Viennese choir (on box-office grounds) to sing the same Bach *Passion* under both conductors with too short an interval between performances — which resulted with embarrassing regularity in decisions in Karajan's favor. This of course left Furtwängler hopping mad, and his rather less than temperate statements to the press at that time showed he didn't care who knew it. Any rumor about Furtwängler's deathbed change of heart and of his giving Karajan his blessing as his successor is nonsense; the crusty old autocrat hated Karajan till the day he died.

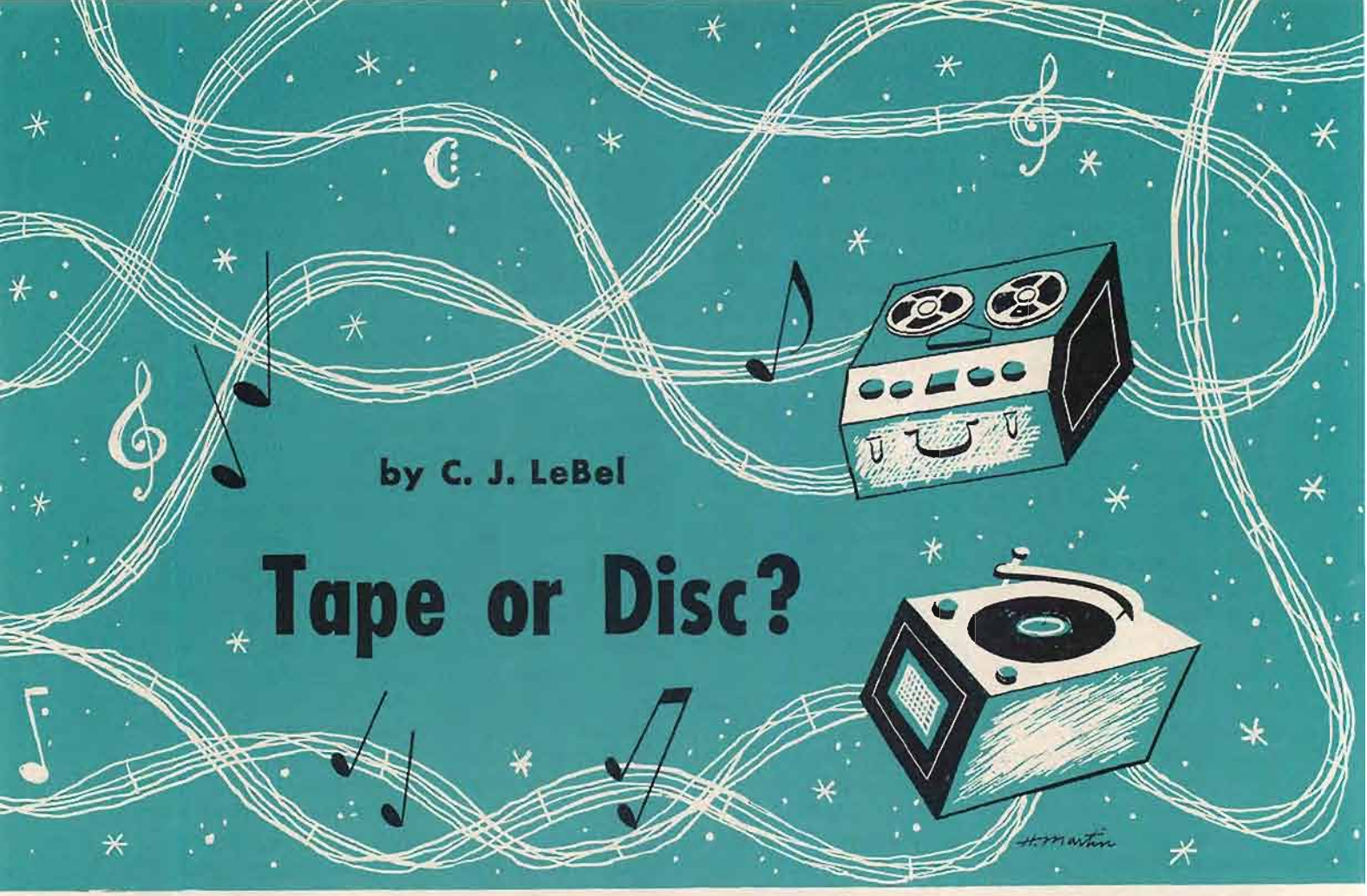
At the end of the war, Karajan's Party-sponsored heyday came to an abrupt halt. The Allied authorities moistened a finger, picked up Karajan (and almost every other prominent German and Austrian conductor) with it, and flicked him into the de-Nazification machine. He and Karl Böhm emerged, nominally cleansed, on the same day, February 18, 1946 — earlier than Furtwängler and Vienna's adored Clemens Krauss, whose fame and prestige ironically caused them more embarrassment and trouble than Karajan's actual Party membership did him. Karajan was scheduled to conduct his comeback concert in Vienna two weeks later, on March 2, but this was abruptly scratched when the American officials decided, on second thought, that he wasn't quite cleansed yet after all. Rumors exist to the effect that Karajan, *Verbot* or no *Verbot*, was highly active that summer at Salzburg, preparing concerts and opera right through the final dress rehearsals and then letting someone else figurehead the performances. At any rate it was not until October 28, 1947, that Karajan was again allowed out in public. The occasion was a Vienna Philharmonic concert, and the program consisted entirely of Bruckner's Eighth Symphony — his wife's favorite work in his repertoire.

From then on Karajan's career has been one uninterrupted series of triumphs. As early as 1946, in Vienna, while he was still on the Allied blacklist, the Friends of Music had elected him their lifetime Concert Director. Once back in circulation, he was swiftly engaged for the important festivals in Salzburg, Lucerne, and Bayreuth. In 1949 he first went to La Scala, not only conducting operas but staging them as well — an undertaking which he has brought off with success almost unique (most conductors have proven inept at stagecraft, some disastrously so). In 1950 Walter Legge made Karajan chief conductor of London's Philharmonia Orchestra, with which he made a tour of Europe in 1952 that included his first Berlin appearance since the war. The next year he and the Philharmonia made another tour, playing festival engagements in Aix-les-Bains, Lucerne, and Edinburgh. Karajan also flew to Japan for his first guest dates there.

As long as Furtwängler lived and headed the Berlin Philharmonic, Karajan rarely made the trip to Berlin. The older conductor had been substantially successful in keeping Karajan away from the Vienna Philharmonic, but whereas Vienna had a second orchestra to offer Karajan — the Vienna Symphony — Berlin was Furtwängler's domain entirely. However, very soon after Furtwängler's death on November 30, 1954, the members of the Berlin Philharmonic, who have the unusual right of choosing their conductor by vote, unanimously decided on December 13 to make Karajan their *pro tempore* Director. He stepped in on relatively short notice, drilled the orchestra like a fury (twenty-one rehearsals in fourteen days), and set off for the orchestra's — and his — first American tour.

When this tour was announced, Associated Press's enterprising Berlin bureau filed the story, having uncoverd, during routine preliminary interviews, not only Karajan's Nazi record but also the fact that the orchestra's manager, Gerhart von Westerman, had joined the Nazi Party in 1933. In the United States, all hell promptly broke loose. Officials of New York's huge Local 802 of the American Federation of Musicians announced that 750 members had signed a demand that the tour be cancelled, and said 4,000 signatures were expected by the time the orchestra arrived. They charged that both Karajan and Westerman, through their Party membership, shared "the responsibility for the death and exile of countless musicians from Hitler's Germany." (The AFM disclaimed that the petition was officially sponsored by the Union itself.) In Berlin, just before taking off from Tempelhof Airport, Westerman said it was "nonsense" to say that either he or Karajan had been "enthusiastic" or "ardent" Nazis. Karajan himself smilingly declined all comment; he said he saw no reason to get into a swivet: "Either we will make music or not make it."

The Rabbinical Council of New Jersey protested. The Executive Board of Local 802 unanimously urged Union Boss James Petrillo to protest. (Petrillo nervously replied, in essence, that what was good enough for the President's and Dulles' O.K. was good enough for his.) More facts rapidly came to light. It was claimed that the Berlin Philharmonic prior to 1945 had had the smallest percentage of Nazis of any leading German orchestra — by the end of the war there were sixteen Party members — and that "only five or six" of them still remained. (To keep things in perspective: the great old Vienna Philharmonic, "the orchestra with the sweetest violin tone in the world" with its long, lovable, *gemütlich* Viennese tradition, consisted at one time, lest we forget, about eighty per cent of Nazi Party members.) Ernst Fischer, the Berlin Philharmonic's assistant manager, stood up for Westerman, who, he claimed, had used his position to shield three partly Jewish members and see to it that they drew their full pay during the *Continued on page 190*



Wherein the Vice-President of Audio Devices, Inc., displays great courage in attacking head-on one of the most controversial topics of our high-fidelity era.

This article is being written with a great deal of trepidation, for the subject of tape vs. discs is truly complex. Past discussion has not been helped by the presence of well-meaning but ill-informed enthusiasts, and by sales-minded thinking which has avoided difficult facts.[1] After twenty years experience in the manufacture of recording materials, the firm of which I am a member still finds *both* disc and tape of major importance. This duality of interest unfortunately compels a certain impartiality, and the long experience has brought all the facts to the surface for recognition. In short, the enforced impartiality will disappoint both sides, and a hasty refuge in Rainy Lake is being readied.

THE APPLICATION many times dictates the recording medium by imposing special conditions which cannot be overlooked. For example, in phonograph recording the customers and the critics demand the utmost mechanical perfection in performance; i.e., *all* the notes have to be played, and correctly. But the availability of tape editing has so corrupted the modern musician that a note-perfect complete performance before the recording microphone is now rarely encountered. In short, we could not give up editing today, even if we wished to.

The moment we specify careful editing, we force the use of tape as the original recording medium, for the editor's work has become far too complex to use discs. Note that this tape is used at 15 or 30 inches per second, one quality step above the 7½ ips used in the home. Note also that any quality defect in the tape original will be carried over into any disc made from the tape; in a sense, the tape characteristics have become irretrievably embedded in the modern disc.

Home, School, and Church Recording. In these applications tape has effectively replaced disc. This replacement is not complete — we still get letters from enthusiastic home disc recordists — but it is at least 99.98% complete. Very few recordists want to carry a 75-lb. disc recorder when a 25-lb. tape machine will do as well. Still fewer are so afflicted by the do-it-yourself mania that they welcome the mechanical dexterity needed in disc recording. In fact, dexterity has become so unfashionable that we had to devise a new tape reel, which could be threaded with two thumbs. Nevertheless the home recordist will continue his home recordings — on tape — with results which he at least considers a priceless record of his children's progress, of world events, and of irreplaceable musical selections. He welcomes the ease of making tape duplicates for his friends. Tape has become common in the civilized home throughout the world. The same factors have made tape invaluable

[1] We expressly exclude from this criticism David Sarser's pioneer article on the subject, in HIGH FIDELITY, March 1955.

in much of the work of the modern school and church.[2]

Stereo. For stereo, we believe that tape is the only practical medium. It is true that there have been British demonstrations of single-groove (combined vertical and lateral) stereo disc recordings, but this is a very old idea, patented here over twenty years ago. Practical development of the idea has always foundered on one basic well-known physical fact: all the second harmonic tracing distortion of the lateral track will appear in the vertical track output. Inevitably, the sound of one of the channels will be impaired in quality.[3] Twin groove stereo discs have never had mass acceptance, so this leaves the field to tape.

General Home Use. For home nonstereo listening, disc will always have a place, since high-quality single-channel reproduction is less expensive on disc than on tape. (Tape cost has diminished a third in six years, though.) Also, a whole evening of background music (3½ hours) can be loaded on a changer; the equivalent in tape would require a fourteen-inch reel (using 7½ ips, dual track) to handle 4,100 feet of tape. This is not the last word, for the disc time could be stretched to 4.7 hours without loss of quality, if disc manufacturers chose to push the variable-pitch technique to its maximum. Tape time can be stretched only by reducing tape speed or adding more tracks, both of which reduce quality.

It is easier to build up the precise program to fit your mood, by assembling a stack of discs, than by finding individual selections in a long tape. The lazy man may not want to thread up tapes, although tape cartridges will cure this if they ever get off the ground. On the other hand, the adept can build up mood tapes by splicing together sections of commercial tapes — the equivalent rerecording in discs is generally impractical in the home.

Broadcasting. Most of the radio broadcaster's own recording has been on tape for years. Nearly all of his transcriptions are still on disc, for cost reasons. Most amusingly, the new generation of broadcasters has recently rediscovered the convenience of disc, so that use of lacquer recording blanks in the broadcast field has remained astonishingly large.

SO, circumstances dictate the medium for the present. We can think of two unlikely improvements which could create a technological revolution, however:

a) A universal shift to ½-mil playback styli, combined with intensive use of variable recording pitch, to put about an hour of recording on each side of a twelve-inch disc.

b) An improved magnetic head with a 1/10-mil effective gap, making possible a 15,000-cycle frequency range at 3¾ ips speed.

Let's examine seven factors which fairly well define sound quality. We will try to ignore a comparison of ideals (such as disc test pressings and 15-ips tape original recordings), and stick closer to what the home user can expect: production pressings and duplicated tape. To narrow the field, the best quality *home* equipment will be assumed, playing a 33⅓-rpm microgroove disc or a 7½-ips tape. The seven factors are frequency range, signal-to-noise ratio (including also the usually ignored echo on disc and print-through on tape), distortion, wow and flutter, signal-to-modulation-noise ratio, durability, and uniformity of quality.

As we explore these various factors a few skeletons will be pulled out of their closets and dusted off. These are not locked closets, and every engineer has known that the skeletons are there. A few sales managers have hoped that the skeletons would crumble into dust, if ignored enough, and a few engineers have worked to remove some bones; but most of the skeletons are still there.

Frequency Range. Both the disc and the tape yield good response from 40 to 15,000 cps when first made. Played on the wrong pickup, the range above 10 kc can be wiped right off a disc, unheard, in one pass. On the best of modern pickups this does not happen. Tape reproduction above 8 or 10 kc depends on the accuracy of azimuth alignment of the reproducing head; this is often not as well controlled as it should be, in lower-cost machines. The tape counterpart to disc high-frequency deterioration is the effect of a magnetized head, which can erase the higher frequencies and add 10 db of hiss, all in one pass of the tape. This is particularly serious with home recorders, in which the chance of magnetizing the head during recording is appreciable. Very few users own a head demagnetizer.

Signal-to-Noise Ratio. Conventionally, signal-to-noise ratio is measured by picking a signal intensity on some standard basis, then removing the recorded signal and measuring the background noise. Unfortunately the standard methods for disc and for tape are on somewhat different bases, even though the NARTB adopted both. Also, rumble and echo on a disc are not taken into account, nor is print-through on tape. By a little sleight of hand, however, we will try to adjust the methods to a reasonably comparative basis, ignoring only what may safely be ignored.

[2]School applications for tape recorders are pretty obvious, but it may surprise many to learn that churches now use tape machines extensively. Recordings of complete services are carried by volunteer workers to the homes of other church members who are unable to attend the services; weddings are recorded and the tapes given to the newlyweds. Both choir and clergy study their recorded performances for self-criticism and training. There is at least one case on record in which a cleric, listening to his latest sermon, fell into a deep and refreshing sleep.

[3]As this goes to press, a program for the forthcoming Audio Engineering Society Convention announces a paper by C. C. Davis on a new single-groove stereo disc. It is claimed that this does not use a vertical-lateral groove, but since information is resolutely withheld it is impossible to say whether one fault has simply been exchanged for another.

In measuring disc signal-to-noise ratio, it is customary to ignore turntable rumble. This is reasonable, because the predominant frequency is so low that the Fletcher-Munson reduction in ear sensitivity at low frequencies usually reduces rumble to inaudibility in a well-adjusted system. Intergroove echo is also ignored, because at 70 db below the signal intensity it is inaudible to any except the most fanatic. In the NARTB method of measurement a signal reference of 7 cm per second groove velocity is employed, which allows at least 10 db margin for peaks. Thus we can use the average disc signal-to-noise ratio of 50 db directly, but in so doing will have to ignore ticks and pops, which annoy out of proportion to their true intensity.

Measurements for tape present two problems: inadequate margin for peaks in the standard method, and the disregard of print-through. Let's take them in order. First, a really good home tape machine at 7½ ips has a nominal signal-to-noise ratio of 55 db, from which we would have to deduct 6 to 8 db to provide more margin for peaks, leaving about 48 db. This ignores print-through, which with standard tape would have a ratio of 50 db three months after recording (the time spent in a warehouse and on a dealer's shelf). With standard tape, print-through is thus so close to conventional noise in intensity that the over-all noise is probably about 46 db. The new Master low-print Audiotape has 8 db less print-through, which would bring the over-all signal-to-noise ratio back to 48 db and would eliminate disturbing background noise that sounds like distortion. The new tape would take over a hundred years to reach a print-through level corresponding to machine noise, according to present measurements. From these figures, disc therefore has only a slight margin over tape, the margin being less with the newest tape.

During this discussion we have tried hard to ignore the Fletcher-Munson curves, for so little has been published on the character of tape playback noise that any reasonable application of the curves is impossible.

Distortion. At the nominal recording level (which is what the technician's volume indicator reads), distortion in disc and in tape is comparable, but this is not true at the intensities encountered during normal listening. At 20 db below the nominal level, distortion on disc is negligible, whereas it is still about 1% harmonic for tape. There should therefore be a *slight* difference in clarity, in favor of disc.

Three effects complicate any comparison. First, slight misalignment of a pickup in mounting will introduce some tracing distortion, particularly at the innermost grooves of the disc. Second, rapid variations of tape speed tend to produce sidebands of tone which sound to the ear just like distortion. Third, print-through in tape sounds somewhat like distortion; it has been found that the new very-low-print-through tape sounds definitely cleaner to the ear even though its distortion (measured by conventional methods) is exactly the same as for standard tape. Therefore, any comparison is complicated by the possible variation in those three side effects.

Wow and Flutter. Contrary to the standard nomenclature, which was prepared in an ivory tower on 79th Street, we will herein use *wow* to refer only to low-frequency variations in reproduction speed (and hence of pitch variation), and will use *flutter* to refer to higher frequency variations. The reason for this distinction is that wow reveals its true character to the ear, and is quite annoying. Flutter sounds much more like distortion and, indeed, the sidebands produced bear a slight resemblance to the sidebands produced by intermodulation distortion.

In disc reproduction, a reduction of wow to 0.2% is readily obtainable, *if* the hole is not miscentered. Flutter is negligible. In tape reproduction, wow and flutter are often present to the extent of about 0.2% each. There is no tape effect comparable in cause to the miscentered disc center hole, but a bit of splicing tape on the capstan will provide an acceptable aural substitute.

Signal-to-Modulation-Noise Ratio. Modulation noise (which is seldom referred to) is noise that fluctuates with the signal. To the ear it sounds like distortion: a lack of clarity in the sound. On disc, modulation noise is negligible except at such high levels that distortion is also unpalatably high. On tape, modulation noise is of the order of 0.1 to 0.2% of the signal intensity. This seems rather small, but we find nothing in the literature to guide us in the conclusion. Much lack of clarity that is blamed on modulation noise is probably print-through.

Durability. We want to be able to reproduce a recording many times, with minimum loss of quality. Durability should be discussed in two categories: on the shelf and in use.

On the shelf, we know that discs have lasted for many years. Under *reasonable* storage conditions, tapes can last for a period that is presently indeterminate but probably long. Print-through level in standard tapes may increase to 48 db below signal after two years, but in the new Master Tape it will still be a good 56 db down. If the tape is played often enough, print-through will not have a chance to grow. Some tape has been made with very poor binder, and after a year or so the coating comes off easily, but this is not characteristic of the best tape. Acetate-base tape can be seriously embrittled by storage at high temperature and low humidity, but a polyester seems immune to this mistreatment.

In use, a disc is susceptible to mechanical damage. A bad pickup can rub off the extreme high frequencies, a defective stylus can introduce permanent scratch, and dust ground into the grooves can seldom be removed. On the other hand, tape is susceptible to both magnetic and mechanical damage. A magnetized head will erase the higher frequencies and permanently raise the hiss level. Tape which has been mechanically damaged by a misadjusted recorder will develop curl or wrinkle immediately; humidity changes of extreme range can do similar harm[1] to a tape in storage. Some makes of tape have developed layer-to-layer sticking in storage, others have tended to squeak after many playings. Both are symptoms of faulty chemical formulation, not of any inherent fault in tape as such.

Quality Control. Phono- *Continued on page 204*

[1]Radocy, Frank, "Tape Storage Problems," *Journal of the Audio Engineering Society*, IV, 1 (January 1957). Copies are available from Audio Devices, Inc.

Where can a famous concert artist go when he decides he needs a sabbatical? Here is Vladimir Horowitz's solution . . .

Manhattan Holiday

by John Pfeiffer

IMMACULATELY dressed, seated on a rather low bench before the ebony architecture of a concert grand piano, Vladimir Horowitz bent over the keyboard one Saturday afternoon in October 1954. Concentration arched his slim frame into the aspect of a mighty wizard, from whose fingers notes sparked and ricocheted through the silent room. Finishing with a glittering cascade, he paused and quietly addressed his strangely unresponsive audience, "I will repeat it." A crisp voice answered briefly: "Right." Once again, the atmosphere was drenched with a torrent of music. But the Picasso dancer in pink tights didn't stir on his purple cushion; the benign gaze of the Rouault maiden didn't shift one degree; and the prim Modigliani lady stared unwaveringly from the opposite wall.

Yet one auditor responded, although without words or applause: tucked among the Venetian furniture, one RCA microphone was absorbing and translating this wealth of sound into a form which would bring Horowitz into the living rooms of the world. He was recording in his own living room — the first overt musical activity of his extended sabbatical leave, a period of rest, reflection, and reappraisal which has produced not one public performance but more recordings than any period of the same length in his life. Since February 25, 1953, his only audiences have been the precious works of art that adorn his living room, or tiers of empty seats in concert halls employed as recording studios.

At his last public appearance before his temporary retirement, Horowitz commemorated the twenty-fifth anniversary of his American debut with a Carnegie Hall recital. Two weeks later, he was in Minneapolis for his next scheduled recital, but there were signs of exhaustion, and knowing they were not the symptoms of temporary fatigue, he calmly cancelled the season. Since then, he has remained quietly at his New York City home except for a brief escape from the summer heat each year. His absence has been attended with the full gamut of rumors, most of which have filtered back to him. As much as they must have pleased their authors, they have entertained him more. The simple truth is that he is restoring physical and emotional energy and has been honest enough to take the time he feels necessary.

At first, he catered strictly to the rehabilitation of his physical system, seldom touched the piano, avoided fancy foods (he still does), drank nothing stronger than milk (he has graduated to Postum), and, incidentally, changed his brand of cigarettes. Although a daily walk of thirty blocks was part of the routine, he rarely went out socially, and a visit to his late father-in-law (Maestro Toscanini) in Riverdale, less than ten miles away, took on the proportions of a major journey.

Returning from the Catskills after his first summer of rest, he was relaxed and refreshed; and the urge to work was written into the many summonses to his studio. Ideas that had lain dormant for years were rearing up to intrigue his interest. First at hand, however, was a project discussed the previous spring: the release of the recording RCA Victor had made of his Twenty-fifth Anniversary Recital. He focused his enthusiasm on careful listening, suggesting sound revisions to obtain appropriate tone colorations and to restore dynamic contrasts. Taking orderly pains to fill aurally the visual void suffered by

Horowitz and the author at a Carnegie Hall session in April.

every recording artist, he measured every change and carefully considered every inch of tape removed to eliminate an audience noise.

The weeks of preparation for this release gave voice to many of his thoughts but never a hint of future performance. He was engaged otherwise, in organizing a search for material on Muzio Clementi, the pianist contemporary of Mozart and Beethoven who carries the distinction of having been condemned by the former and praised by the latter; and he was trying out his new high-fidelity phonograph with the acoustic recordings of Mattia Battistini and others of the old *bel canto* era. This brought a suggestion from him that the best of Battistini be re-released on microgroove — the selections to be made, the transfer supervised, the descriptive notes written, and the final product passed for release by the piano player Horowitz.

Aside from an interest in making it possible for this generation to know the artistry of Battistini, Horowitz had a point to make: any musician can find the quality of his instrument, the breadth of his tone, and the effectiveness of his phrasing in the human voice artistically projected. "When I was just a child," he points out, "I collected records of *bel canto* and found inspiration for my pianistic ideals." Although the treatment of familiar operatic arias was "shockingly free" during that period, he smiled, "after all, it was the Victorian Age," and that was supposed to explain everything. "But even if we don't agree with such exaggerated freedom," he added seriously, "there is much we can learn. It is better to control an abundance of spontaneous feeling than to camouflage an insufficiency."

Both Horowitz and his wife, the former Wanda Toscanini, were afraid to include the Maestro in their enthusiasm for Battistini, because he was a kind of "policeman in subduing the excessive *piacere* of singers," as Horowitz put it. But Maestro heard of their interest, and with much apprehension they gathered a few select records for his appraisal. To their delighted surprise and profound relief, Maestro listened with the greatest pleasure, raising his hands in admiration and shouting, "*Bello, bello!*"

After many test transfers to microgroove, the Battistini effort began to bog down. Too many compromises were necessary, since many of the best performances proved technically unusable, and some of the point of Horowitz's special objective was stolen away by the antique thinness of the sound. Further, other matters were clamoring for attention. Clementi material was piling up. The appearance of Horowitz's recital on the record market was greeted warmly, and he was beginning to speculate about the public's impression of his absence.

Having gained a valid insight on Clementi through the new literature and scores he had uncovered, he found he agreed with Beethoven rather than Mozart about this neglected composer, and decided it would be serving a worthy purpose to record some of the sonatas. It would also let the American public know that he wasn't in some far-off land performing for other audiences. After the summer of 1954, in Easthampton, Long Island, the Battistini project was put aside, and for the first time in history a major artist devoted an entire long-play recording to Muzio Clementi.

The decision to record in Horowitz's living room was made largely on account of the piano, his own beloved concert grand which had never seen a concert hall. After spending years of concert preparation using this piano, Horowitz wanted to give it a chance to speak for itself. Faced with a construction crew's moving the piano through the second floor window with the risk involved "in removing a gem from its setting," he suggested an alternative. Bring the studio to the piano. With all willingness, RCA Victor recording studios spread out to the second floor of Horowitz's upper Manhattan house, discreetly snuggled on a quiet street just east of Central Park.

There the second floor is devoted to Horowitz's library-studio and, at the back, the main living room. The library became a control room, and the recording equipment was "jig-sawed" in among massive period furniture, an enormous desk, and another concert grand piano. A picture of Franz Liszt on the piano gave the activity a certain chaperoned air, and the room was lighted by the delicate glow from the frames of famous paintings.

Horowitz appeared at four that Saturday afternoon in October, and although the work was purely experimental at this point, it was started with unusual confidence. The type and placement of microphone to give suitable sound values were found rather quickly, and everything seemed tuned to the smooth functioning of creative art at work. Everything, that is, until a most unrefined and irritating rattle sliced through the monitor speaker with every note from the piano. The indignity of this instrusion was appalling. A frantic search of the living room finally uncovered a vibrating pair of glass prisms on an ornate candelabra which had a direct sound path to the microphone. From that point on, the search for Clementi started.

No longer experimentally, the usual recording trials followed: adjust the beam of the microphone sensitivity, alter balance between treble and bass, listen to every note and analyze the performer's comments: "Are these

passages enough forte?," "The basses are mushy," "Will it sound if I use soft pedal here?," "Tell me please which sounds better, this . . ? or this . . ?." Then the precious nod of approval, or "now it starts to be good," or an occasional annoyed wave of a hand pointing out an uneven phrase or a wrong note. Finally emerging, quietly and surely, the performance, and in it the spirit of Clementi and the soul of Horowitz.

With the relief of having the performance wrapped securely on a reel of tape, the never failing Horowitz hospitality, which at this point featured good strong Italian coffee spiked heavily with conversation, animated the review of every detail of the work. But also, during this period of relaxation and many others, Horowitz revealed the complex texture of his leave. In one breath he renounced the active life of a concertizing performer with all its rigorous demands, the relentless drain on physical and emotional stamina; in the next he described his enthusiasm for the study, reflection, and work which would prepare him to continue that life. But the whole life of a creative artist is a sequence of paradoxes: while he is a human organism, he often must exercise superhuman powers to bring his extraordinary gifts to ordinary men. When the toll becomes too great the wise call a halt, repair to the climate of their choice, and give their systems a blissful and restoring shot of pure routine.

When the doubt of getting successful results from recording in his home was removed, Horowitz seemed secure in the certainty that he was doing what he should be doing. He saw much of his childhood friend, Nathan Milstein, and his other old friends, Rudolf Serkin, Ania Dorfmann, Gregor Piatigorsky, and Artur Rubinstein. Visitors and former pupils dropped in frequently; he played cards with friends, watched television (wrestling matches fascinate him!), gave lessons now and then, and entered into the spirit of home life with his wife and daughter. The best colleague any professional could have, he listened for hours to the new recordings of his friends with the scrupulous attention he gives to his own, and he worked with them on new concert or recording repertoire. He performed every act of good will he could with sincere and spontaneous respect for fellow-practitioners and for friendship itself.

With the Clementi as the first material originally performed for records since the spring of 1952, Horowitz carried the work through with the relentless zeal of his character and the concentration of an agile mind undistracted by other commitments. He inspected every feature of the release, including cover and annotations, and approved it only after a procession of reference recordings and test pressings that threw the combined forces of the New York recording department and the Indianapolis pressing plant into production trauma. It was all in the merciless insistence on exacting the same degree of perfection in technical quality that he automatically expected of himself in performance quality.

The uniformly favorable response to this record from both press and public encouraged him to decide on a quick sequel. Many ideas were dismissed which ordinarily would have led to exciting projects, but suddenly one idea that satisfied all the extraordinary demands of the situation sparkled as a diamond among pearls. It was music that formed part of his heritage, music that makes use of the full spectrum of aesthetic and technical resources of pianist and piano, and mainly, universally beautiful and appealing music. He would choose a sonata and sixteen preludes by Alexander Scriabin, and in view of the success of the Clementi, he attached the perilous condition of recording these also in the "94th Street Studios."

It was a perilous condition only from the engineering aspects, the music differing enormously from the relatively restricted dynamic and tonal demands of Clementi. No certainty is ever attached to a studio before widely diverse types of music are recorded and the results evaluated. Here was a situation commensurate with planning the recording of an opera in a studio which had been validated only for a string quartet.

With the essence of the idea crystallized, he now had to choose sixteen from among the eighty-five preludes Scriabin wrote. He called one night in high excitement, "I'm going crazy to decide. Nobody knows how difficult it makes to pick just a few pieces. There are so many. You must listen." A few days later, he ran through the first fifty or so, playing only enough to establish an opinion. Once they approached the atonal quality marked by the later opus numbers, he proceeded with caution. He halted abruptly when confronted with three staves, each with a different time signature, supposedly played by two hands. Throughout his search, Horowitz was at a loss to explain why more of this music was not included in the standard repertoire. This gave him another reason for his eagerness to set down on records the powerful Sonata No. 3 and a kind of cross section of the preludes.

ON a cold day in January 1955, the first attempt at recording was made, with all hands as apprehensive as if we were trying to record a full symphony in a telephone booth. To offset the effect of the room's relative smallness, the microphone was placed very close to the piano. Thus, in the language of the art, the effect of standing waves would be minimized and the reverberation in the room would have little or no weight in the sound obtained. There is a risk involved in this technique, however, for unless the proper microphone is placed in the ideal position, the piano will sound excessively percussive, and imperfections or mechanical noises in the instrument will be blatant. Furthermore it imposes the necessity for extreme precision on the part of the performer. Everything in the room was again left intact, the inanimate objects being treated to an opportunity many people would have coveted. But now the "audience" was subjected to the full brunt of intense concert hall dynamics — crashing chords, "machine gun" passages, stabbing octaves, all concentrated within a space a fraction of that in which masses of people are pinned to their seats by the same qualities. The "storm of unleashed elements," the phrase in which the composer described the final movement of the sonata, demands every violent pianistic device, and it would not have been in the least surprising to find the room in complete shambles and the microphone *Continued on page 194*

Reviewing has one advantage over suicide. In suicide you take it out of yourself: in reviewing you take it out of other people.

BERNARD SHAW

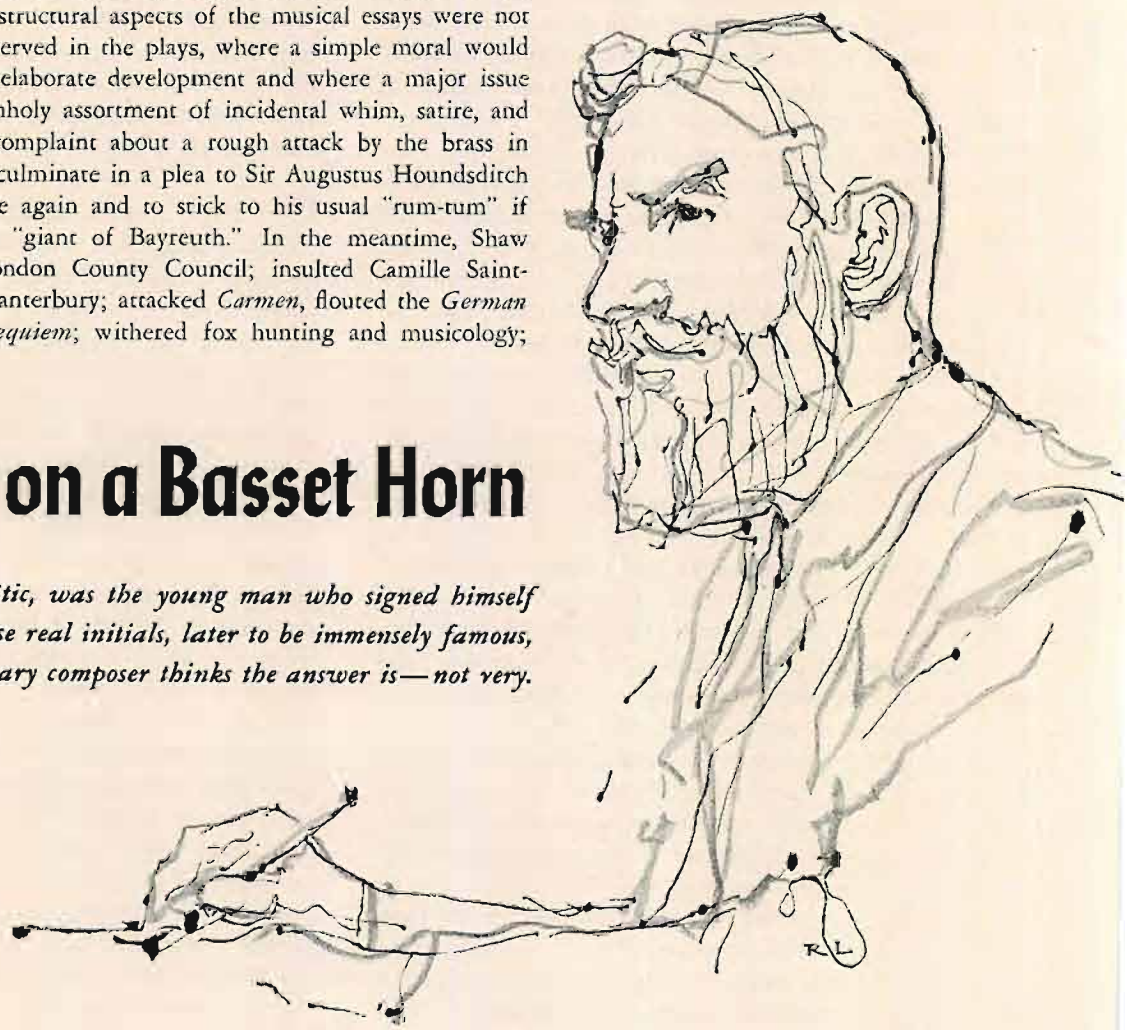
Sour Notes on a Basset Horn

Just how good, as music critic, was the young man who signed himself Corno di Bassetto, and whose real initials, later to be immensely famous, were G. B. S.? A contemporary composer thinks the answer is—not very.

by Jacques de Menasce

IN THE PREFACE to a collection of some of Bernard Shaw's writings on music, W. H. Auden is quoted as having expressed the opinion that Shaw "was probably the best music critic who ever lived." A statement of this kind coming from Mr. Auden should be taken seriously; although it is gracefully couched in terms of surmise, it is strong enough in formulation to assume the character of a pronunciamento. Mr. Auden is a man whom one admires as a poet and respects as a person, and who in addition has contributed generously to music—notably by providing Igor Stravinsky with an imaginative libretto for *The Rake's Progress*. I felt that his views on music criticism could not be ignored and that I ought to re-examine Shaw's musical writings in the light of this unequivocal enthusiasm. I thought that some important aspect might have eluded me at the time of my first encounter with these brilliant and vastly entertaining essays, that some essentials might have escaped my attention, that euphoria might have blinded me to the presence of unsuspected values that had revealed themselves to Mr. Auden.

Before settling down to reappraisal, I tried to reconstruct my early reactions to Corno di Bassetto. My generation had taken to Shaw instinctively. He had brought happy relief from weary pragmatism, and his readiness to chastise the pundits wherever they stood was encouraging and refreshing. His music criticism had been brought to my attention in Vienna in the Thirties by Siegfried Trebitsch, the German translator of Shaw's dramatic works. It was interesting to find that certain structural aspects of the musical essays were not dissimilar to those one had observed in the plays, where a simple moral would lend itself to unsuspected and elaborate development and where a major issue was often surrounded by an unholy assortment of incidental whim, satire, and outright buffoonery. Thus, a complaint about a rough attack by the brass in Wagner's *Kaisermarsch* would culminate in a plea to Sir Augustus Houndsditch not to attempt this masterpiece again and to stick to his usual "rum-tum" if he could do no better by the "giant of Bayreuth." In the meantime, Shaw would have threatened the London County Council; insulted Camille Saint-Saëns and the Archbishop of Canterbury; attacked *Carmen*, flouted the *German* (and every other kind of) *Requiem*; withered fox hunting and musicology;



exhorted the children of Israel to compose fewer oratorios and to contribute more to the Municipal Band Fund; assured everyone in sight that the only musical merit of the French was their ability to sing in their own language without a Cockney accent; and employed whatever space then remained to him to denounce Edvard Grieg as a "musical grasshopper."

This digressive approach could be amusing, but it did not always lead to the best kind of music criticism, although many of Shaw's ideas were sound enough considering the retarded and provincial conditions prevailing in a country that had languished under foreign musical domination since the days of Purcell and that, a couple of centuries later, was still awaiting an Elgar. After all, one had to remember that in 1892 there still lived in London one Samuel Butler, who thought of himself as the spiritual son of Handel and who, in 1883, had sent a minuet he had composed in the Handelian style to a friend with the following comment: "There is no one whom I have surprised more than myself, for I have lived with myself for forty-seven years without suspecting that I had it in me to compose music, and yet it seems I can compose as well as many another."

It was also quite apparent that Shaw's efforts to arouse his countrymen to a higher consciousness of musical values were not entirely selfless. One could not help thinking of Lord Henry Wotton's remark to the man who had painted the picture of Dorian Gray: "There is only one thing in the world worse than being talked about, and that is not being talked about." In any case, here is what Shaw admitted himself: "I yield to no man in the ingenuity and persistence with which I seize every opportunity of puffing myself and my affairs," and he did not hesitate to confide that "any sort of notoriety will serve my turn."

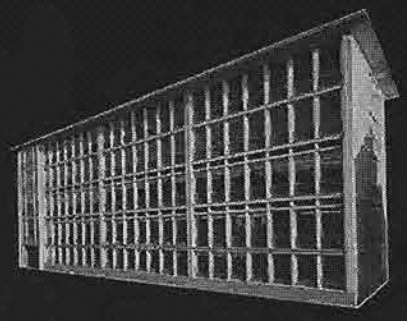
The evaluation of Shaw's music criticism in a narrower sense presented no difficulties, once one had decided to attribute certain contradictions and barbarisms to the peculiarities of Shaw's temperament and to the somewhat extravagant and argumentative approach to music of the English generally. It was clear that Shaw had taken a stand for Wagner and that most of his opinions about the music of his time were derived from this viewpoint. This did not mean that he would not unbend and that his imagination would not respond to phenomena that others as dogmatic would have been unable to reconcile with the rigor of their beliefs. His understanding of Mozart was remarkable and of a sort by no means common in his day. (Henry T. Finck, for example, the critic of the New York *Evening Post* from 1888 to 1924, had described the G major Piano Concerto as a "childish and empty thing" and had called the Mozart piano concertos in general "as dull and trivial as music can be.") My over-all impression, however, was that Shaw had excelled mainly in presenting a pungent panorama of English musical life in the Nineties; as music criticism in a stricter sense, his had struck me as superficial and amateurish by standards accepted among professional musicians, though it was enlivened by the warmth and sensitivity of a great creative artist.

This thought takes me back to Mr. Auden, whom I thank for having revived my curiosity in Shaw's musical essays, which I had not re-examined thoroughly. Having done so, I must confess that I am very much at a loss to understand the exorbitance of Mr. Auden's claim. In the first place I can think of no single person of any description and of any time whom I would care to identify as "probably the best music critic who ever lived," unless I were to apply this designation to Joseph Haydn for his majestic judgment on Mozart. If this were not acceptable, and if I were to pursue the hypothesis of the existence, past or present, of any other candidate, I would turn to Schumann and Berlioz, to Liszt, Wagner, and Debussy, to Schoenberg and Stravinsky, all of whom have criticized music admirably and in every conceivable capacity. I would certainly not overlook, among innumerable other writers and musicians, such men as Heine, Stendhal, and Nietzsche, Fauré, Dukas, Milhaud, Sauguet, and Romain Rolland, Aaron Copland and Virgil Thomson, Eduard Hanslick, Josef Marx, Paul Becker, Alfred Einstein, and Willi Schuh. I can find no good reasons to believe that Shaw was superior as a music critic to any of these eminent and highly proficient men. I can not even bring myself to state with any degree of conviction that he was their equal. I have no way of telling what standards Mr. Auden applies to music criticism. Still, I cannot quite believe that he could have been unduly impressed by Shaw's assurance that "literature is six times as difficult an art technically as composition" (no reasons given), or that *Carmen* is "abysmally inferior" to *Der Freischütz* (no explanations), or that Beethoven did not know how to orchestrate, or the numerous other ex-cathedra pronouncements that turn up right and left in the four solid volumes of his musical essays.

The subjects of major musical consequence that Bernard Shaw discussed in his time were then more or less *res judicats*. The battle for Wagner had practically been won, even in England, and what Shaw actually was pleading for was more and better Wagner. Brahms was equally famous in his own way and well established everywhere, except in France. Shaw makes it quite clear in the course of his reviews that he was far from being the Brahms-hater he is reputed to have been. This he proves by a display of genuine sympathy for the chamber music and a passable understanding of some of the major large-scale works. Once this has been said, it should be clear that there remained little that could burden Shaw with any undue critical problems and little that could ruffle a man who had assimilated *Tristan* and *Parsifal*. Verdi's *Falstaff* was the one exception and here Shaw rose to the occasion with a good piece.

The only other flash of novelty from a sphere that was other than Teutonic or Italian, Shaw did not recognize at all. This was the First Violin Sonata by Fauré and it gave rise to a most unfortunate review. Here it is, in part: "Ysaÿe . . . also brought forward a sonata by Gabriel Fauré, the Maître de Chapelle of the Madeleine; but this, however it might have sounded before Mozart, made no effect after." That kind of review always reminds me of Max Graf's malicious recommendation to a young critic: "If you do not know what to say about a new composer, just say that he is no

Continued on page 197



The Durable Diskery of Podbielskistrasse

by OTTO MAYER-SERRA

A half century and two world wars after its founding, Deutsche Grammophon Gesellschaft still is proving that music made patiently brings profits promptly.

FOR MORE than fifty-five years the world's oldest gramophone record manufacturer has been operating a factory at Podbielskistrasse 76, Hanover, Germany. Although ownership has changed several times, the location of the plant has remained the same; and during the whole of this period the company, Deutsche Grammophon Gesellschaft, has continued to regard itself not only as part of a major financial and industrial enterprise but as an organization devoted to the perpetuation of high cultural and artistic standards.

DGG is perhaps most directly known to American music listeners through its Archiv-Produktion — a vast project divided into twelve "areas of research," ranging from Gregorian chant to the Viennese classics and, in the words of its director, Dr. Fred Hamel, intended to present the legacy of Western music, "not as historical examples of dead glories, but as real works of art, with their full vital and emotional impact." However, the firm also is responsible for millions of other discs pressed and distributed (in the United States by Decca) on a variety of labels throughout the Western world.

The origins of DGG date back to the last century, when Joseph Berliner decided to exploit the lateral-cut disc invented by his brother Emile. Joseph had been operating a telephone factory in his native town of Hanover since 1881. During several trips to the United States, he became intrigued with Emile's epoch-making "gramophone," patented in 1887, and its commercial possibilities. In the meantime, Emile had formed the United States Gramophone Co. in Washington, D. C. Four years later, on December 6, 1898, Joseph founded Deutsche Grammophon Gesellschaft m. b. H. in Hanover.

Deutsche Grammophon went into production as a subsidiary of Joseph's telephone company, more or less on an experimental basis and acting first principally as a supplier for the Gramophone Company, London. It imported some hydraulic presses from the United States, and had other equipment made to order in Hanover. The town's prospering rubber industry provided the material for the early discs, though it was not too long before the company switched to shellac. From the beginning the records bore the legend "E. Berliner's Gramophone," along with the "recording angel" trade-mark, familiar to the American public since 1953 through Angel Records.

Within two years the great success of his new plant led Joseph Berliner to seek additional financing for the further development of the business. German financiers were sceptical, so he turned toward England. In 1900, Deutsche Grammophon, A. G., was organized in Berlin with a capital of one million marks; production continued at the original Hanover factory. The owners of the new firm were Joseph Berliner's old Deutsche Grammophon G. m. b. H., the Orpheus Musikwerke of Leipzig, and the Gramophone Co., Ltd., of London, founded early in 1898 for exploitation of Emile Berliner's patent rights throughout Europe. This German-English association lasted for many years. Up to 1908, when the His Master's Voice plant at Hayes, Middlesex, went into operation, England still absorbed about forty per cent of the Hanover plant's production. Hanover's other big customer was Russia, where branches were opened in 1901 and 1902 at St. Petersburg and Riga.

The original crew of fourteen workers had grown to thirty by 1902 when the Hanover plant moved from the small department at the telephone factory to the new quarters on Podbielskistrasse. The men operated thirty

hand presses, turning out seven-inch discs at first, and later ten- and twelve-inchers. Titles were etched by hand on the original matrix until about 1900, when printed labels on glossy paper came into use. The famous dog Nipper also appeared on these labels. By 1907, some two hundred presses were in operation. That year production reached its highest pre-World War I peak (over six million). It dropped to three million in 1913, faded out during the war, but by 1920 was up again to a million records a year. The catalogues listed more than two-thousand different titles.

The development of semiautomatic and automatic presses, and of electrical recording, gave new impetus to the record business. In the boom year of 1929, DGG turned out more than nine million discs and total German production went up to thirty million (compared to a hundred million in the United States.) The Depression years that followed affected record production, however, along with everything else; and in 1934, low point of the world economic crisis, the entire German industry produced only five million records.

Meanwhile, the company had undergone many changes. Joseph Berliner remained on the board, but the English interests, the Gramophone Co. Ltd., assumed complete leadership. During World War I, the British government seized German property, and as a reprisal the German government sold all British properties in Germany at public auction. The Polyphon-Werke of Leipzig bought control of Deutsche Grammophon, A. G. Polyphon had been producing records under its own label since 1906, in addition to making the Orchestrion, a very popular coin-operated slot machine, as well as hornless talking machines, and even a popular make of automobile trade-marked "DIXI." Polyphon-Werke immediately began exploitation of its newly acquired property, manufacturing records under the label "Grammophon — Die Stimme seines Herrn" (His Master's Voice).

The use of an enormous stock of matrices on loan from Hayes, recordings made either by the British company or its American ally (the Victor Talking Machine Co.), provoked much controversy between Hanover and Hayes as soon as communications were restored after the 1918 armistice. A bitter fight arose too over DGG's exploitation of the HMV label and the dog trade-mark. This dispute was carried to the International Court at The Hague, where, in 1927, an agreement was reached under the following terms: the German company would limit its distribution of records with the English trade-mark and the dog "Nipper" to the German market; for the export trade it agreed to employ another label, "Polydor," still used today for DGG's popular line. (In 1945–46, HMV reacquired German rights for its dog trade-mark and can now use it on records of Electrola, its subsidiary in Cologne. However, the word "Grammophon," forming part of DGG's firm name, still has trade-mark protection in Germany.)

Big expansion followed the First World War. Branches were established in Vienna, Copenhagen, Stockholm, and Paris, organized under the aegis of Polydor-Holding, A.G., based in Basle. Up went the rocket, down came the stick; the Depression brought bankruptcy for Polyphon. Deutsche Grammophon was completely reorganized once more, this time as a subsidiary of the Telefunken telecommunications company. This great combine, established in 1903, was controlled in equal partnership by Germany's two leading electrical firms, AEG and Siemens und Halske. In 1941 there was another reshuffling. Telefunken passed into sole ownership of AEG, DGG went to Siemens, which now, with 170,000 workers and employees, is Germany's largest industrial combine.

DGG's revival after World War II has been almost miraculous. When Germany surrendered in 1945, Berlin was in ruins. Only a heap of rubble remained of the DGG offices and studios, and the company's files were a pile of ashes. Although the Hanover plant also had been hard hit, fortunately most of the matrices were saved, as well as a few presses, the steam plant, and the shellac compound mills, though not the galvanoplastic plant. Furthermore, communications between Hanover and Berlin, since the latter was surrounded by Communist Germany, were almost cut off. The food shortage was critical. The light and power plant worked only sporadically. It was next to impossible to locate a nail, a bag of carbon, or load of cement. However, the DGG people's spirit and the German's traditional hunger for music could not be held down. An office was improvised in the wreckage of one of Siemens' Berlin buildings. One by one, a few small presses were pieced together and put in working condition. By 1947, emergency production was begun for both West and East Berlin, the only time in the company's history when records were produced outside the Hanover plant. In spite of a raw material shortage so severe every buyer had to turn in two old records to get a new one, 35,000 discs a month were produced. In the dead of the night, slipping past vigilant Russian sentries, employees smuggled in matrices from the Hanover plant, concealing them in knapsacks and market baskets.

In the interval, the Hanover factory was completely

A quality control room: "Perfection is sought untiringly."

rebuilt. The most modern German equipment was installed, along with Danish Orthophon recording amplifiers and American Scully cutters, which are used practically everywhere in Continental Europe. Provisional offices were set up in Hanover. (Early this year they were moved to Hamburg, where a brand new building houses the main offices of DGG, including management, export, artistic direction, and publicity.) But this was only a beginning. Many other problems had to be solved to put the company on a working basis once more.

Probably the biggest of these was the rebuilding of DGG's shattered roster of conductors, instrumentalists, and singers. A glance at the DGG catalogue reveals only a few of the great names among German musicians. Furtwängler is represented by only four records (one of them, containing his own Second Symphony, has not been released in the United States). The greater part of his output is found on "His Master's Voice." Years ago Wilhelm Kempff recorded Beethoven's concertos and sonatas for DGG, but has since devoted most of his recording time to London Records.* Other examples could be cited. This situation dates back to the early postwar period, when many of the leading German and Austrian musicians, among them Schuricht, Von Karajan, Krauss, Krips, Gieseking, Backhaus, Elisabeth Schwarzkopf, and Hilde Gueden, signed up with the two leading English companies, attracted by both their financial offers and their distribution facilities. (In some cases, these inducements were supplemented with food packages, then more important than money.) German companies couldn't compete.

Another lag, or shortage, complicated this one. In 1952 when Professor Elsa Schiller was appointed artists and repertoire director, she found that not even all of Beethoven's symphonies were in the catalogue. A basic repertoire still had to be formed, making use of new artists or those few of an older generation still available. The veteran conductor Eugen Jochum became one of the big names in the new catalogue. Another is fast-rising, fast-working Ferenc Fricsay, a temperamental young Hungarian who has had a brief, tempestuous stay in Houston, Texas, has served as chief conductor of the RIAS Symphony in Berlin, and is now in charge of Munich's State Opera. The late Fritz Lehmann and Stuttgart's Ferdinand Leitner also helped fill out the conductorial roster. Very recently Lorin Maazel, a young American, who is winning sensational success all over Europe, has started recording for DGG with the Berlin Philharmonic. Igor Markevitch drifts between this company and EMI. Other front-rank artists who have made numerous DGG recordings are sopranos Irmgard Seefried, Maria Stader, and Rita Streich, the baritone Dietrich Fischer-Dieskau, the Finnish basso Kim Borg, and the Hungarian pianist Andor Foldes. In its search for new artists, DGG also has turned East. Its recent three-symphony Tchaikovsky album, made with the Leningrad Philharmonic, is the beginning of a large project of recordings with Russian, Polish, Czech, and East German artists and ensembles. In addition, DGG has enlarged its performers' roster with two releases of New York's Symphony of the Air and a recording of Milhaud's *Les Choéphores*, performed by the Lamoureux Orchestra of Paris, all conducted by Markevitch.

DGG's opera catalogue is still weak. Only a few works of the standard German repertoire are available in complete form, among them *Lohengrin*, *The Magic Flute*, and *Hansel und Gretel*. To these are added a dozen Italian operas, taken from the Cetra catalogue. Inasmuch as the German public are used to hearing operas in the language of their own country, selections of many Italian, French, and Russian operas are brought out on single records in German. In general, these highlights, as well as those of German comic operas and operettas, find great public favor.

Still there is a long way to go. Although there are three DGG versions of Tchaikovsky's *Pathétique*, many important works of Brahms, Bruckner, and Richard Strauss still are missing from the catalogue, and Mahler is not represented at all, though a recording made in Dresden of his Fourth Symphony is on the way. International modern music, with Stravinsky and Bartók taking the lead, is being cautiously introduced. Last year, the first work of a Viennese dodecaphonist was recorded: Schoenberg's *Book of the Hanging Gardens* (not yet available on American Decca).

Furthermore, a broad international approach is overshadowed by the necessities of the local market, as well as a strong sense of responsibility to the national musical culture. The worldwide success of Carl Orff's *Carmina burana*, under Jochum, came as a real surprise to the company. This recording, which presented the orchestra and chorus of Radio Munich, with soloists of the State Opera, was regarded as a daring venture. It cost several times more than a normal symphonic production.

Last year, casting aside commercial considerations, DGG launched a novelty, the first collection of a series called *Musica Nova*. This is to present a panoramic view of all trends in German music today. The launching was greatly helped by the Foreign Ministry in Bonn, which acquired about three hundred albums for distribution at its diplomatic offices throughout *Continued on page 201*

*Kempff now is recording some non-Beethoven repertoire for DGG.

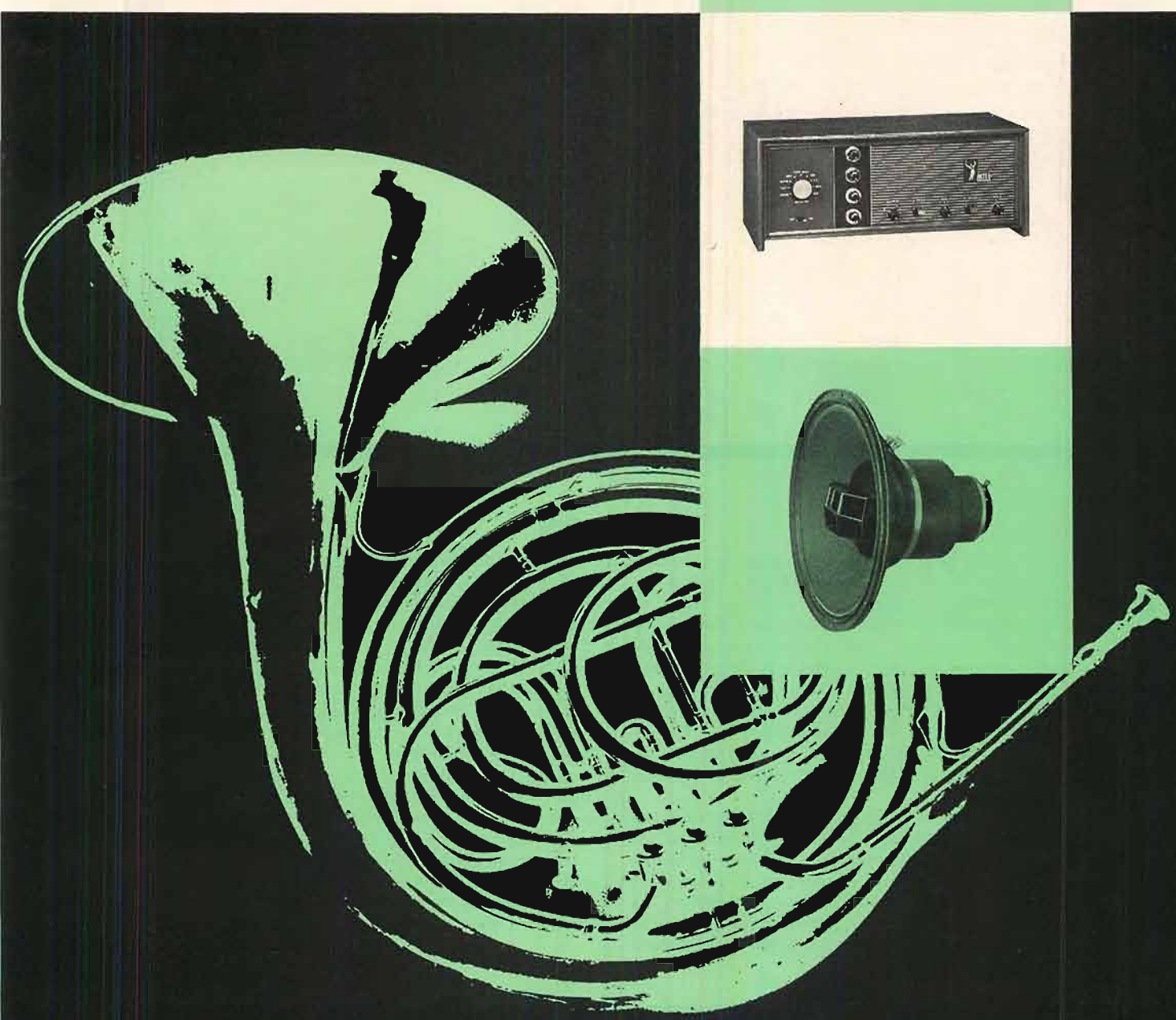
Transfer from tape to disc. All DGG equipment is brand new.

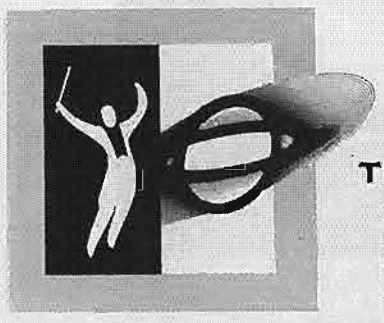
ALTEC
LANSING CORPORATION

performance

guaranteed

high fidelity





The high fidelity products manufactured by Altec Lansing Corporation represent the finest standards of engineering, production, testing and quality control: standards that result in an outstanding series of products which are in every instance the best which can be produced for the faithful reproduction of sound. It is this exceptional degree of engineering skill and manufacturing integrity which makes it possible for every Altec high fidelity product to carry this exclusive performance guarantee: "All specifications are minimum engineering requirements and all products are guaranteed by Altec Lansing Corporation to meet or exceed their published specifications."

In the selection of a high fidelity system one should carefully consider not only the price and specifications of the individual components but also the validity of the specification and its realistic relation to price. All high fidelity manufacturers pay approximately the same price for their raw materials and labor. It is safe to state that the difference in costs between manufacturers producing identical items would be negligible. Yet this simple fact proves inconsistent with advertised prices and specifications. This discrepancy occurs through lax or exaggerated specifications which inflate the products' abilities or through the use of inferior materials and incomplete test procedures which seriously reduce the products' quality and reliability.

The performance guaranteed specifications in this catalog are your assurance that Altec high fidelity products consist of the finest materials processed and tested under stringent quality conditions.

After you have read this catalog, we earnestly suggest that you visit your Altec dealer and examine closely the products which bear our name. In every phase you will see and hear the quality that is synonymous with the name Altec; the visible and audible reasons which have made Altec Lansing Corporation the world's largest manufacturer of professional and high fidelity sound equipment.

TUNERS

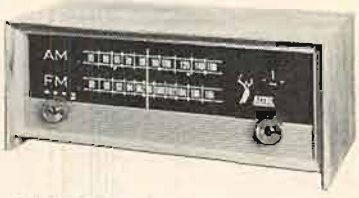
The top quality tuners on the market today are, from the standpoint of circuit design, nearly identical. Altec tuners, though noticeably superior in performance, display no marked difference in circuit design. There are no completely new developments which are used by any single manufacturer. In fact there is a general agreement regarding the circuits which will provide the highest quality. In spite of this circuit similarity, however, the performance of the better tuners on the market varies greatly. The differences in their performance cannot be resolved from their circuit schematics and is not directly related to basic circuit theories.

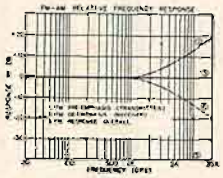
In an FM tuner inductances of one microhenry and capacitances in the order of one micro-microfarad can seriously affect circuit performance. Thus a piece of wire no longer than half an inch can be a major factor in the chassis layout and the final performance of the tuner. The execution of the electronic circuits into physical being on a chassis is the determining factor in the final quality of the design. Unfortunately the chassis layout which will realize the full potential of the circuit design is rarely the most inexpensive way to produce a tuner. Altec tuners use the finest circuits and materials engineered to a chassis layout which permits the maximum possible quality; a quality which closely approaches the theoretical maximum for radio frequency reception.

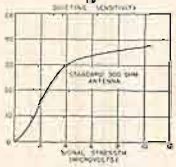
Tuner specifications can be very misleading. In the FM section sensitivity is a major factor in the selection of an adequate unit. Sensitivity is properly stated when it is measured for 30 db of quieting with the tuner connected to a conventional 300 ohm antenna. To use a smaller quieting value such as 20 db or to connect the tuner to an un-common antenna of lower impedance will result in a more spectacular but misleading sensitivity figure. When you compare tuner sensitivities be sure that they are all measured under the proper conditions. Otherwise a true analysis is impossible.

12-10A

306A
AM-FM
BROADCAST TUNER







The most outstanding feature of the 306A AM-FM Tuner is its exceptional sensitivity. One of the nation's leading testing laboratories reported that, to their knowledge, it is the most sensitive tuner ever manufactured. Mechanically the 306A features an exceptionally large six gang tuning condenser which is fully shielded and mounted directly to the chassis for perfect grounding, a dry rectifier for long stable life, complete isolation between transformers and power mains and a chassis layout which reduces coupling between circuits to a minimum that easily meets F.C.C. radiation requirements. The FM section features a Foster-Seeley (Armstrong) detector, a "cascode" low noise RF stage, a triode low noise mixer stage, AFC and two limiter stages. The AM section features three IF transformers with optimized coupling for flat pass band and maximum noise rejection. This use of specially designed and over-coupled IF transformers provides maximum band width with extremely sharp skirt attenuation for maximum fidelity. These features, careful chassis layout and intensive testing and alignment account for the superior performance of this tuner. Examine the 306A closely. Compare its performance critically. You will see why it is considered the world's finest tuner.

306A AM-FM BROADCAST TUNER

controls: Tuning, on-off, AM, FM, FM-AFC
frequency modulation antenna: Standard 300 ohm
maximum sensitivity: 1.1 microvolt
quieting sensitivity: 2.5 microvolts for 20 db*, 4.0 microvolts for 30 db*
selectivity: 6 db band width 185 kc, 20 db band width 300 kc
frequency range: 87—109 MC
image rejection: 48 db
if rejection: 72 db
frequency response: ±0.5 db, 20-20,000 cps
distortion: Less than 1% at 100% modulation
Less than 0.4% at 1 volt output
amplitude modulation antenna: Built-in Ferrite Rod "Loopstick" plus external antenna connections
maximum sensitivity: 3 microvolts
loop sensitivity: 50 microvolts per meter
selectivity: 6 db band width, 110 kc; 40 db band width, 27 kc
frequency range: 534-1675 kilocycles
image rejection: 66.5 db
if rejection: 58.5 db
distortion: Less than 1.5% at 30% modulation
output: 1 volt cathode follower matched for 440, 344 and 901
power supply: 117 volts, 60 cycles, 65 watts
tubes: 2-6BQ7A; 1 each-6AB4, 6BA6, 6AU6, 6AL5, 6BE6, 12AU7
dimensions (less knobs): 4-11/16" H, 13-13/16" W, 7-11/16" D.
#12542 cabinet: 5-15/16" H, 14-5/8" W, 8-13/16" D.
approximate shipping weight: 15 lbs.
price: Less cabinet, $196.00.
Walnut, blond, or mahogany cabinet $18.00

*Standard 300 ohm antenna

305A
AM TUNER

The 305A has been designed specifically for use in those areas where FM reception is not available or for use with the 306A for stereo broadcast reception. It provides the maximum possible quality from AM broadcasting through the utilization of a special circuit which provides the greatest possible band width. Many AM tuners have both broad and narrow band selection but the broad band position invariably has so little skirt attenuation that it is virtually unusable. The 305A uses Altec developed and produced IF transformers of an unusual design which permits them to be over-coupled to provide extremely sharp skirt attenuation. This sharp attenuation provides the greatest usable band width for maximum fidelity, and strong noise rejection for quiet operation and freedom from station interaction.

305A AM BROADCAST TUNER

controls: Tuning, on-off
broadcast range: 540-1720 kilocycles
output: 1 volt cathode follower matched for 440, 344 and 901
power supply: 117 volts, 60 cycles, 20 watts
tubes: 2-6BA6, 1 each 6BE6, 6AL5, 6AB4
dimensions (less knobs): 4-11/16" H, 13-13/16" W, 7" D
#12542 cabinet: 5-15/16" H, 14-5/8" W, 8-13/16" D
approximate shipping weight: 11 lbs.
price: Less cabinet, $99.00. Walnut, blond, or mahogany cabinet, $18.00

AMPLIFIERS

It has become common in high fidelity advertising to use such words as "professional" and "laboratory standard" in describing amplifiers. In general, these statements are misnomers. Many of the costly facilities required in professional amplifiers are of no value in a home high fidelity system.

Altec Lansing Corporation is the world's largest manufacturer of professional sound equipment. More than 60 percent of the world's motion picture theatres equipped for stereophonic sound use Altec equipment. More than 90 percent of all recording, motion picture and broadcast studios use Altec microphones, tuners, consoles, amplifiers or loudspeakers. In spite of this background, Altec home high fidelity equipment is not "professional." It has been designed specifically for use in the home. Altec amplifiers are however professional in concept. Their basic designs reflect fully the knowledge and experience of engineers and physicists whose daily contact is with requirements far more stringent than those of high fidelity.

As you study the specifications on the Altec high fidelity amplifiers, remember that these are minimum specifications; that they represent the very least performance which can be produced under the most unfavorable circumstances; that they are not the over-specified theoretical but un-obtainable specifications so common in high fidelity amplifiers. When you have an opportunity to study the circuit design and the physical appearance of Altec amplifiers, note the complete freedom from trick circuits, the fact that all of the components used are operated well within their rating and that they are the finest components available, that the chassis design and wiring are clean cut and representative of the best engineering practice.

12-10 B

344A
AMPLIFIER

The 344A "Quartet" amplifier is in every way representative of the latest developments in the electronic arts of engineering and production. Its circuitry provides 20 watts of exceptionally clean power over the entire audible spectrum. Its facilities give access to a large number of input sources and optimum control. Its construction utilizes the latest quality production techniques which reduce cost to a point where the 344A is an outstanding value in high fidelity.

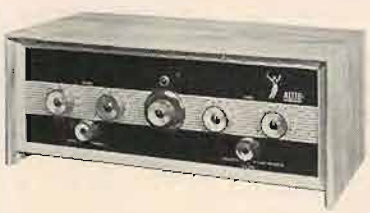
Most notable in the 344A is the use of a "professional type" printed circuit. This printed board differs from the type normally found in residential equipment in that all components are attached to it through riveted eyelets making it possible to change components without destroying the circuit. In conventional printed circuits this is impossible and the failure of a single component can necessitate the replacement of the entire circuit or amplifier.

The 344A has a total of six inputs which are controlled by four major source volume controls, making it possible to pre-set the level of any major program material and change from input to input without the necessity for re-adjustment. An independent power switch is also provided so that the amplifier can be turned on and off without disturbing the settings of any control. A four position loudness compensation control, continuously variable wide range bass and treble controls and three position rumble and scratch filters give masterful flexibility to suit reproduction quality to individual tastes and material. A tape recording output is provided so that material from any input may be selected for recording.

344A AMPLIFIER

frequency range: 20-22,000 cycles
power output: 20 watts
load impedance: 4, 8, and 16 ohms
system gain: 138 db maximum
power requirements: 117 volts, 60 cycles, 85 watts
inputs: 3 low level for magnetic phono pickup, microphone, and tape deck. 3 high level for radio tuner, tape reproducer, and spare
special output: Recorder output jack
equalization: 4 phono compensation curves: European, LP, RIAA, 600. 1 tape deck compensation
tone controls: Bass 17 db boost, 15 db droop. Treble 15 db boost, 20 db droop
volume control: 4 separate volume controls for independent functions with illuminated indicators
loudness control: Provides 4 positions of loudness contour compensation
filters: Lo filter (rumble): Provides 3 positions of bass attenuation
Hi filter (scratch): Provides 3 positions of treble attenuation
tubes: 2-12AX7, 1-6QG7, 2-EL84, 1-EZ81
facilities: 2 outlets, 117 volts, 60 cycles, controlled by amplifier power switch
dimensions (less knobs): 4-5/8" H, 13-3/4" W, 7-1/8" D
#12542 **cabinet:** 5-15/16" H, 14-5/8" W, 8-13/16" D
approximate shipping weight: 18 lbs.
price: Less cabinet, $106.00. Walnut, blond, or mahogany cabinet, $18.00

440C
PREAMPLIFIER



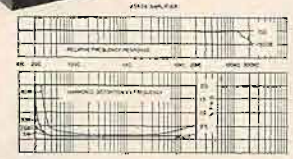
The 440C has been carefully designed to provide all of the facility necessary for the most comprehensive control and recording of high fidelity programming of all types. Conversely no controls have been provided which are unnecessary or detrimental to the proper reproduction of high fidelity music. The 440C provides the proper controls engineered to the highest degree of flexibility and quality.

Five inputs are provided: three high level for ceramic or crystal phono pickups, tape recorders and reproducers, tuners or television sound—and two low level with flat positions for use with microphones and a total of 25 crossover selections for use with variable reluctance magnetic phonograph cartridges. Independent level controls are provided for each of the inputs on the back of the preamplifier in order that each source may be permanently set at an input level which will match it to other sources and obviate the necessity for re-setting the volume control each time the sound source is changed. Either linear volume control or continuously variable loudness contour control is selected by a switch on the front panel. An unusually desirable feature is the special circuitry interconnected with the tape recording output which permits monitoring of either the source material as it is presented to the recorder or monitoring of the recorded material from the tape playback head.

440C CONTROL PREAMPLIFIER

inputs: Three high level; two low level equalized or flat
outputs: Two—one main amplifier, one recorder
gain: 60 db at 1 kc—tone controls flat, low level, equalized (phono). 63.5 db low level, flat (microphone). 26 db high level (tv, tape, radio)
frequency response: 20-22,000 cps
noise level: High level inputs—volume max., better than 95 db below 1.5 volts output. Phono inputs—better than 95db
controls: Seven: Switch for choice of inputs and low frequency crossover. HF equalization switch. Volume—loudness control with power switch. Volume—loudness-tape monitor switch. Bass and treble controls. Five independent level controls on back
power supply: Self-contained. Three AC receptacles controlled by on-off switch. 117 volts, 60 cycles, 15 watts
tube complement: 2-12AY7, 1-12AU7
dimensions (less knobs): 4-5/8" H, 13-3/4" W, 5-3/8" D
#12542 **cabinet:** 5-15/16" H, 14-5/8" W, 8-13/16" D
approximate shipping weight: 11 lbs.
price: Less cabinet $138.00. Walnut, blond, or mahogany cabinet, $18.00

340A
AMPLIFIER



The 340A power amplifier can best be described as a "purist" amplifier for its sole function is to provide the finest possible final stage power amplification. Nowhere in the 340A, in its electrical concept, its physical rendering or its amazing performance, will be found anything that is not directly related to amplification. It has only two controls, master gain and output impedance. Every one of its components is the finest available and selected for a capacity that far exceeds the demands of the circuit. For example the premium power tubes used in the 40 watt amplifier are rated by the manufacturer as having a 100 watt capacity. This generous performance margin is the reason that the 340 amplifier will provide its full rated performance under even the poorest conditions of low or fluctuating line voltage and will continue to deliver full performance for years without any necessity for tube balancing or replacement. Study the specifications and curves closely. They represent the minimum performance of the 340 amplifier stated in the most conservative engineering manner.

340A POWER AMPLIFIER

output power and distortion: 40 watts continuous, 30-20,000 cycles with less than 0.6% distortion*
gain: 66.5 db
input sensitivity: 1.4 volts RMS for (rated) output
input impedance: 200,000 ohms
frequency response: Within 1 db, 5 cps to 100,000 cps
noise level: 85 db below full output
load impedance: 8, 16 ohms
output impedance: Adjustable from —4 to +4.5 ohms on 8 ohm tap. Less than .52 ohm on 16 ohm tap
damping factor: Greater than 35 on 16 ohm tap; +1.8 through infinity to —2.0 on 8 ohm tap
controls: Gain adjustment, R_G adjustment
power supply: 117 volts, 60 cycles, 160 watts
tubes: 1-12AY7, 1-12AU7, 2-6550, 1-5U4GB, 1-OA3/VR75
dimensions: 6-3/4" H, 8-1/4" W, 12-1/2" D
approximate shipping weight: 35 lbs.
price: $159.00
*Normal setting of R_G control

12-10.c

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901C RECORD REPRODUCER

The beautiful 901C reproducer gives you exceptional performance for small systems and, when used with any of the Altec speaker systems, becomes a complete high fidelity component system without any necessity for woodworking or installation construction. The 901 contains an 18 watt amplifier, a four speed Collaro changer and a G.E. variable reluctance magnetic cartridge with separate styli for standard and microgroove records.

The 18 watt amplifier, in addition to having all of the facilities for the perfect reproduction of records, has been designed to serve as the heart of a more elaborate system. It has power facilities to operate a tuner or other external source; a microphone input and two high level inputs for accessory crystal or ceramic record reproducers, tuners, tape machines or television. This flexibility of function places the 901C far above any other cabineted record reproducing system.

901D MELODIST RECORD REPRODUCER

frequency range: 20-22,000 cycles
power output: 18 watts.
load impedance: 4, 8, or 16 ohms
system gain: 132 db maximum
power requirements: 110 volts, 60 cycles, 75 watts
inputs: 1 low level for magnetic phono pickup or microphone, 2 high level for ceramic or crystal phono pickup, tape reproducer, radio tuner, or tv audio
equalization: 4 compensation curves: European, LP, new AES (NARTB, RIAA, RCA, Orthophonic), old RCA
tone control: Treble, 15 db boost or droop at 10,000 cycles. Bass, 13 db boost or droop at 50 cycles
volume control: Provides either standard volume control or compensated loudness control
level controls: Individual level adjustments for each input on rear of chassis
facilities: 2-110 volt, 60 cycle outlets controlled by amplifier power switch
dimensions: 10-1/8" H, 22-1/16" W, 15-7/8" D
finish: Walnut, blond, or mahogany
approximate shipping weight: 55 lbs.
price: $246.00. (16" modern iron legs are available as an accessory for $5.40 a set.)

LOUDSPEAKERS

The ideal electro-acoustic transducer consists of a single element capable of accurately reproducing a frequency range far greater than that of the human ear. At the present state of the acoustic engineering art it is not possible to design any single loudspeaker to cover this range. The closest approach to this ideal are the Altec "Biflex" speakers. These three units use a cone having multiple concentric compliances which permit the lower frequencies to be propagated by the entire cone while at higher pitches the mid-cone compliance un-couples and the smaller central section is able to operate independently. In spite of this outstanding development which reached practicality in the "Biflex" speakers they are still not capable of reproducing the entire frequency spectrum of the human ear. In order to do this it is necessary to use a multiplicity of speakers. When two speakers are used both generate the same tone at their crossover point. Even when the two are placed so that their driving elements are in the same plane and the sound waves are generated concurrently both in time and space, certain crossover interferences exist. In a two-way system it is possible through the harmonious design of the elements and their studied placement to bring these crossover troubles to an inaudible minimum. This smoothness is not possible in multiple crossover three or four-way systems and such speaker systems having more than one crossover invariably have regularly spaced "phasing holes" distributed throughout the audio spectrum. These "holes" in the frequency response are irritating to the listener since they have the effect of emphasizing certain pitches while muffling others. Since a properly designed two-way system is capable of reproducing far more than the entire audible range there is no reason to develop a more complicated system. In the professional fields of sound reproduction there are no multiple crossover speaker systems.

Altec Lansing Corporation manufactures two types of speaker systems capable of reproducing a range greater than that of the human ear. First are the "Duplex" speakers which, in actuality, are two speakers mounted together on a single frame for compactness, point source relation and installation simplicity. Second are the numerous systems using a variety of separate bass speakers, treble horns and drivers and dividing networks. In their individual categories, each of these speakers and systems represents the finest available for full audio range reproduction.

601B DUPLEX

The 601B is the smallest member of the Duplex family yet its design reflects all of the professional features found in the larger units. Like the larger speakers it has a heavy cast frame which provides a rigid suspension for the bass cone so that it is impossible for the voice-coil to become uncentered in the magnetic gap. The 3,000 to 22,000 cycle high frequency section uses an exceptionally compact multicell horn having a 90° by 40° distribution pattern. The bass section with its large voice-coil, deep gap and highly efficient magnetic structure will reproduce tones as low as 40 cycles when mounted in a proper enclosure. The external variable high frequency shelving control of the 3000B dividing network permits perfect balancing of the speaker to the acoustic characteristics of individual rooms.

602B DUPLEX

The 602B is the latest major development in the long line of Altec coaxial speakers. In many ways comparable to the 604D with the exception of power capacity, the 602B features a newly developed 3000 cycle high frequency driver coupled to an outstandingly smooth new exponential sectoral horn. The exponential horn remains the finest distributor of high frequency tones and is the only type acceptable in the professional fields of sound reproduction. Sectoral horns are the latest improvement in exponential design. This outstanding high frequency unit and horn are mounted asymmetrically within the frame of the bass speaker to form a two-way speaker, capable of reproducing a guaranteed range of 30 to 22,000 cycles. Also new is the associated dividing network with its continuously variable high frequency shelving control for balancing the speaker to individual room acoustics. The control is arranged so that it can be mounted through a hole in the enclosure for ready adjustment. The dividing network separates high and low frequencies at 3000 cycles, crossing over at a smooth 12 db per octave curve for minimum crossover interference and maximum protection of the speaker elements. The rugged conservative design of the 602B assures consistently high performance for many years.

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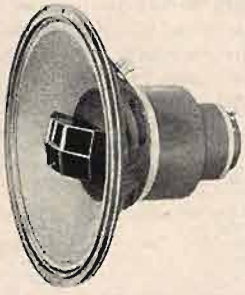
604D DUPLEX



In the twelve years since its original introduction the 604 type coaxial speaker has been considered the finest in the world. It is used extensively as a monitor and quality standard in the largest recording studios and broadcast stations. The reasons for its market superiority are surprisingly simple. The 604 type was originally conceived as a professional standard and its design reflects the pure engineering needed to produce such a unit. Continuing research has resulted in the constant improvement of the design and the new 604D incorporates all of the latest developments in the electro-acoustic art. Notable among its design features are the firm clamping of the bass cone, its permanently viscous compliance damping which prevents standing waves and its annular centering spider; the edge-wound, double insulated ribbon bass voice-coil which moves in an extremely deep magnetic gap in order to assure the same flux density and efficiency throughout its excursion; the 4.4 lb. Alnico V ring magnet for the bass section; the fatigue resistant, tangential compliance high frequency diaphragm with its edge wound aluminum voice-coil, machined annular phasing plug and exponential multicellular horn and the massive dividing network with its smooth 12 db per octave attenuation. These are but a few of the design features which result in high efficiency, great linear power handling capacity and a smooth frequency response throughout the entire range from 30 to 22,000 cycles.

	Code #	Guaranteed Frequency Range	Power	Impedance	Magnet Weight	Voice Coil Diam.	Max. Cone Resonance	Distribution Hor.	Distribution Vert.	Dimensions Diam.	Dimensions Depth	Approx. Shipping Weight	Price
601B	601B	40-22,000 cps	20 watts (30 peak)	8 ohms	1.8 lbs.	3"	35 cycles	90°	40°	12-1/4"	5-5/8" with network	17 lbs.	$114.00
602B	602B	30-22,000 cps	25 watts (30 peak)	8 ohms	2.4 lbs.	3"	42 cycles	90°	40°	15-3/16"	7-1/4" with network	23 lbs.	$135.00
604D	604D	30-22,000 cps	35 watts (50 peak)	16 ohms	5.6 lbs.	3"	40 cycles	90°	40°	15-3/16"	11-1/8" with network	44 lbs.	$177.00

415A 412B 408A BIFLEX

Biflex loudspeakers are the result of the practical application of a new principle in loudspeaker design developed by Altec. The speakers have an efficient frequency range far greater than any other type of single voice-coil speaker and equal to or exceeding the majority of two or three-way units. This truly amazing frequency range which is guaranteed when the speaker is properly baffled, is the result of the Altec developed viscous damped concentric mid-cone compliance.

This unusual compliance serves as a mechanical crossover, providing the single voice-coil with the entire cone area for the propagation of the lower frequencies and reducing the area and mass for the more efficient reproduction of the higher ranges. Below 1,000 cycles per second the inherent stiffness of the Biflex compliance is such that it effectively couples the inner and outer sections of the cone into a single integral unit. The stiffness of the compliance is balanced to the mechanical resistance and inertia of the peripheral cone section so that the mass of this outer section effectively prevents the transmission of sounds above 1,000 cycles beyond the mid-compliance and the cone un-couples at this point permitting the inner section to operate independently for the reproduction of tones above 1,000 cycles. Proper phasing between the two sections is assured by the controlled mechanical resistance provided by the viscous damping applied to the mid-compliance.

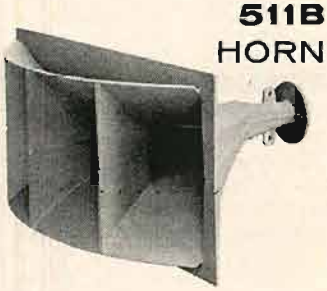
In each of the three Biflex speakers this outstanding cone development is driven by an edge-wound aluminum ribbon voice-coil operating in an extremely deep gap of regular flux density provided by an Alnico V magnetic circuit shaped for maximum efficiency.

Biflex speakers are perhaps the only true high fidelity single voice-coil speakers made, and can be considered to fill the complete speaker necessity for any system or as the bass speaker component for more comprehensive systems intended to cover the entire audio spectrum. Their prices should be carefully noted since they undoubtedly represent the greatest available value in high fidelity loudspeakers. The guaranteed frequency ranges of these speakers are: 415A, 30-14,000 cps; 412B, 40-15,000 cps; 408A, 60-16,000 cps.

	Code	Guaranteed Frequency Range	Power	Impedance	Magnet Weight	Voice Coil Diameter	Max. Cone Resonance	Dimensions Diam.	Dimensions Depth	Approx. Shipping Weight	Price
415A	415A	30-14,000 cps	25 watts	8 ohms	2.4 lbs.	3"	45 cycles	15-3/16"	7"	20 lbs.	$63.00
412B	412B	40-15,000 cps	20 watts	8 ohms	1.8 lbs.	3"	50 cycles	12-1/4"	5-5/8"	14 lbs.	$51.00
408A	408A	60-16,000 cps	15 watts	8 ohms	.65 lb.	1.7"	75 cycles	8-1/4"	3-7/16"	6 lbs.	$29.00

SPEAKER COMPONENTS

Altec manufactures a number of components for use in two-way speaker systems. The larger units are in fact the professional components used in the finest theatrical speaker systems and large commercial music reproduction systems. They represent a degree of quality not found in any other loudspeaker or series of loudspeakers. All of the high frequency horns are of the sectoral, exponential type. Unlike the lens and many diffusion type horns which "spray" the sound in order to achieve distribution and thereby change the honest character of the sound, the sectoral horn provides a mathematically calculated flow path which directs the sound waves into the proper distribution pattern without interfering with their natural propagation in the air. In considering the claims of types other than the exponential and sectoral it should be remembered that only these two are acceptable in high fidelity professional use such as motion picture theatres. In order that these components will be used to their fullest advantage, Altec has prepared a special brochure describing the proper method for the design and construction of loudspeaker enclosures.



511B HORN

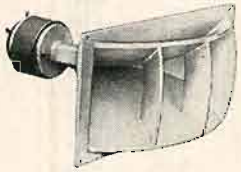
This is the finest high frequency horn available or practical for home use. Its low 500 cycle crossover point brings the uncolored reproduction characteristic of a good horn well into the basic tonal range of most instruments. When used with the 802C high frequency driver the 511B will provide amazingly smooth response throughout the range from 500 to 22,000 cycles, one-half octave beyond the range of the human ear. The 803A bass speaker, either singly or paired, is recommended as the bass component for use with this horn. The 500D dividing network is needed to complete the system.

511B HORN
lf cutoff: 500 cycles
distribution: Hor., 90°; vert., 40°
dimensions: H—10-5/8", W—23-5/16", D—18-1/2"
approximate shipping weight: 18 lbs.
price: $36.00

500D DIVIDING NETWORK

For use with the 802C h.f. driver and 511B horn. Has smooth 12 db per octave slope and detented high frequency shelving control designed for external mounting with 4 steps of 1-1/2 decibels each for precise adjustment to individual room acoustics.

500D DIVIDING NETWORK
impedance: 16 ohms
hf attenuation: 6 db, 1-1/2 db steps
crossover: 500 cycles
dimensions: H—5-1/4", W—8", D—2-5/8"
approximate shipping weight: 12 lbs.
price: $54.00



811B HORN

The 811B is identical in design concept and quality with the 511B but is smaller in size and has a lower limit at 800 cycles. It is recommended for use in those installations which will not accept a horn the size of the 511B. The 811B with the 802C driver can also be used with the 415A Biflex speaker to extend that wide range speaker into a full 30 to 22,000 cycle system. The 800E network completes the system.

811B HORN
lf cutoff: 800 cycles
distribution: Hor., 90°; vert., 40°
dimensions: H—8-5/8", W—18-3/8", D—14"
approximate shipping weight: 11 lbs.
price: $27.00

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800E DIVIDING NETWORK

Has the same characteristics as the 500D described above but with 800 cycle crossover for use with 811B horn and 802D h.f. driver.

800E DIVIDING NETWORK

impedance: 16 ohms
hf attenuation: 6 db, 1-1/2 db steps
crossover: 800 cycles
dimensions: H—3-1/4", W—6", D—2-5/8"
approximate shipping weight: 8 lbs.
price: $42.00

802D HIGH FREQUENCY DRIVER

Designed specifically for use with the 511B and 811B horns for smooth 22,000 cycle high frequency reproduction.

power: 30 watts
range: 500-22,000 cycles
impedance: 16 ohms
magnet weight: 1.3 lbs.
dimensions: H—3-11/16", Diam.—4-1/2"
approximate shipping weight: 8 lbs.
price: $57.00

3000B HIGH FREQUENCY SPEAKER & NETWORK

The high frequency speaker and horn from the amazing 602B Duplex speaker, the 3000B is the ideal unit to provide full 30 to 22,000 cycle performance in conjunction with the 415A Biflex or for 40 to 22,000 cycle range with the 412B or for extending the high frequency range of any system having a good efficient 12" or 15" cone speaker. Its sectoral horn has the same outstanding characteristics as the larger professional Altec horns. Must be used with 3000B network.

3000B HIGH FREQUENCY SPEAKER

power: 20 watts
impedance: 8 ohms
range: 3000-22,000 cycles
distribution: Hor., 90°; vert., 40°
dimensions: 3-3/16" H, 4-7/8" W, 4-5/16" D
approximate shipping weight: 1 lb.
price: $39.00

3000B DIVIDING NETWORK

impedance: 8 ohms
hf attenuation: 10 db continuously variable
crossover: 3000 cycles
dimensions:
height 2-5/16"
width 4-7/8"
depth 2-5/16"
approximate shipping weight: 1 lb.
price: $21.00

803A BASS SPEAKER

The 803A is used as the bass component in many of Altec's larger theatre speaker systems. Since it is intended for use with the 802C high frequency speaker and either the 511B or 811B horn its efficient frequency range is limited to 30-1600 cycles. This 1600 cycle upper range assures a smooth crossover at any frequency up to 800 cycles and has permitted every design consideration to be directed to the speaker's performance in the basic bass range. As a result the 803A has a bass performance far superior to that of any loudspeaker designed to operate over a wider frequency spectrum.

803A SPEAKER

power: 30 watts
impedance: 16 ohms
range: 30-1600 cycles
magnet weight: 2.4 lbs.
voice-coil diameter: 3"
cone resonance: 45 cycles
dimensions: 15-3/16" Diam., 7" Depth
approximate shipping weight: 19 lbs.
price: $60.00

SPEAKER SYSTEMS

Altec speaker systems are the culmination of the electro-acoustic art. The highest level of sound reproduction can only be achieved when selected high and low frequency components are designed to work together with a specific dividing network and then combined with an enclosure developed to take the fullest advantage of the abilities of the speakers. Only in this precise engineering wedding of components can a speaker system be built without compromise and achieve complete acoustic excellence.

The individual components used in each of these systems are described elsewhere in the brochure. The cabinets, all of the phase computed bass reflex type, are of extremely heavy construction, braced and blocked so that no part of the enclosure can vibrate and absorb any speaker energy. Thick Fiberglas panels provide the proper padding and absorption of back waves. The expensive hardwood exteriors have been rendered in the finest of taste and hand finished to a patina found only in the finest furniture. In choosing an Altec engineered speaker system for your home you achieve the same acoustical excellence found in more than 12,000 motion picture theatres which are equipped with Altec speaker systems.

830A LAGUNA SYSTEM

This is without qualification the finest residential speaker system in the world. Its comparatively low price can only be achieved through the use of a small number of outstanding components rather than a multiplicity of speakers of lesser quality. The Laguna has a guaranteed frequency response from 25 to 22,000 cycles without any peaks, false bass, treble rise or other misleading frequency accentuations. Internally this system consists of a matched pair of massive 15" 803A bass speakers, an 802 high frequency driver mounted on the 511B horn and the five hundred cycle 500D dividing network. The faithful realism of this system is startling. Listen to it closely; it is the standard by which all other speakers should be compared.

SPEAKER SYSTEM

Code #	Guaranteed Frequency Range	Power Rating	Impedance	Finish	Dimensions H	W	D	Approx. Shipping Weight	Price
830A	30-22,000 cps	30 watts	16 ohms	Walnut Blond Mahogany	46-1/2"	42-1/2"	26-1/2"	210 lbs.	$585.00

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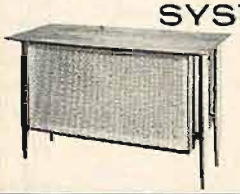
831A CAPISTRANO SYSTEM



Incorporating one 15" 803A bass speaker, an 800E dividing network and an 802 driver with the 811B horn the Capistrano has a guaranteed range from 35 to 22,000 cycles. The graceful, delicate styling of the enclosure is as outstanding visually as the performance is outstanding audibly. The Capistrano is equally appealing to the decorator and the audiophile.

SPEAKER SYSTEM

Code #	Guaranteed Frequency Range	Power Rating	Impedance	Finish	Dimensions H	W	D	Approx. Shipping Weight	Price
831A	35-22,000 cps	30 watts	16 ohms	Walnut Blond Mahogany	30"	47"	23-1/2"	120 lbs.	$381.00

832A CORONA SYSTEM

The Corona is identical with the Capistrano in its speaker elements but has the additional advantage of corner design for greater bass reproduction. Its tasteful design minimizes the large cubage of the cabinet so that it will meld decoratively in any room. Frequency range: 30-22,000 cycles.

SPEAKER SYSTEM

Code #	Guaranteed Frequency Range	Power Rating	Impedance	Finish	Dimensions H	W	D	Approx. Shipping Weight	Price
832A	30-22,000 cps	30 watts	16 ohms	Walnut Blond Mahogany	39"	37-1/2"	24-1/4"	115 lbs.	$381.00

833A VERDE SYSTEM

The compact Verde houses one of the newly developed 602B Duplex loudspeakers in the smallest possible volume which will realize the full quality potential of the speaker. The neat design of the system is a visual pleasure. The "Verde," with its 35 to 22,000 cycle range is the perfect choice for high fidelity systems of moderate size.

SPEAKER SYSTEM

Code #	Guaranteed Frequency Range	Power Rating	Impedance	Finish	Dimensions H	W	D	Approx. Shipping Weight	Price
833A	35-22,000 cps	25 watts	8 ohms	Walnut Blond Mahogany	30"	42"	18"	100 lbs.	$288.00

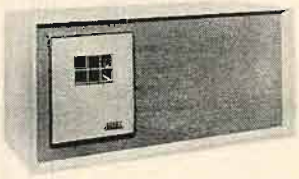
824A ICONIC SYSTEM

The 824 Iconic Speaker System is another Altec achievement—in matchless high fidelity reproduction and size. Designed particularly for smaller installations, the 824 utilizes the Altec developed phase computed reflex enclosure principle to provide truly exciting sound. Using the 412 Biflex 12" speaker, an N-3000 network, and the famous 3000A high frequency speaker, this amazing system is guaranteed to have a range from 50 to 22,000 cycles.

SPEAKER SYSTEM

Code #	Guaranteed Frequency Range	Power Rating	Impedance	Finish	Dimensions H	W	D	Approx. Shipping Weight	Price
824A	50-22,000 cps	20 watts	8 ohms	Walnut Blond Mahogany	28"	19-1/2"	16"	55 lbs.	$192.00

700B MELODIST SYSTEM

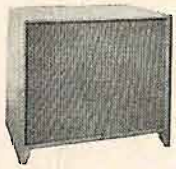


Here is the most compact of Altec's precision engineered speaker systems, designed specifically for use in apartments and as a second speaker system in larger installations. The 700 is also ideal for economical home music systems.

Outstanding performance is obtained from a special 8" speaker coupled with the N-3000B network and 3000A high frequency speaker. This phase computed reflex enclosure is guaranteed by Altec to have a range from 70 to 22,000 cycles.

SPEAKER SYSTEM

Code #	Guaranteed Frequency Range	Power Rating	Impedance	Finish	Dimensions H	W	D	Approx. Shipping Weight	Price
700B	70-22,000 cps	20 watts	8 ohms	Blond Mahogany	11-1/4"	23-3/4"	10-1/8"	24 lbs.	$120.00



710A SPEAKER

The beautifully styled little 710 is the most economical Altec speaker system. It matches perfectly to serve as a base for the 901 reproducer to provide Altec high fidelity quality at an amazingly low price. Using a single 8" speaker the 710 has a guaranteed range of 60 to 10,000 cycles.

SPEAKER SYSTEM

Code #	Guaranteed Frequency Range	Power Rating	Impedance	Finish	Dimensions H	W	D	Approx. Shipping Weight	Price
710A	60-10,000 cps	14 watts	8 ohms	Blond Mahogany	21-7/8"	21-13/16"	15-7/8"	33 lbs.	$ 69.00

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12-10R

A-7
"VOICE OF THE THEATRE" SYSTEM

This system is designed for those who wish to apply the perfection of an Altec engineered system to a custom installation. Actually the smallest of Altec's famous theatrical sound systems, the A-7 uses one 15" 803 low frequency speaker, an N-800 network, and an 802 on an 811 horn. The A-7 enclosure in industrial finish uses Altec's exclusive direct radiating exponential horn combined with a modified bass reflex principle to achieve smooth realistic bass. Guaranteed frequency range: 35 to 22,000 cycles.

SPEAKER SYSTEM

Code #	Guaranteed Frequency Range	Power Rating	Impedance	Finish	Dimensions H	Dimensions W	Dimensions D	Approx. Shipping Weight	Price
A-7	35-22,000 cps	25 watts	16 ohms	Gray	54"	30"	24"	180 lbs.	$294.00

LOUDSPEAKER ENCLOSURES

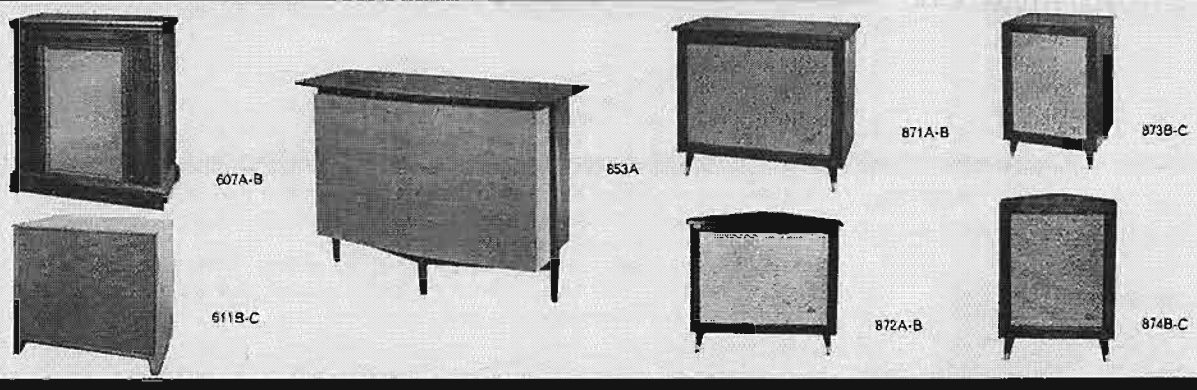
The selection of the proper enclosure for your speaker is of major importance to the ultimate performance of your high fidelity system. The wrong cabinet, or a poorly engineered cabinet, may cause false resonances, distortion, or destroy tones. It may even create "holes" in the vital mid-frequency response. A properly engineered enclosure actually enhances the performance of a quality speaker—gives you the lifelike brilliance you are seeking in your home music system.

In the last few years many different types of enclosures have become available. Few of these represent progressive steps in the art of enclosure design. In effect, the result has tended only to confuse the home music enthusiast. Many of the various forms of folded horn type enclosures have achieved considerable popularity because of their excellent bass response. However, this good bass response is usually accomplished at the expense of lifelike reproduction in the middle range frequencies.

For many years Altec has made detailed and exhaustive measurements in its famous acoustical laboratory on all types of enclosures. The inescapable conclusion reached by Altec's research engineers is that no type can equal a carefully designed enclosure using the bass reflex principle for smoothness in frequency response and overall listening fidelity.

All Altec loudspeaker enclosures are designed around the proved bass reflex principle, thereby enjoying a complete freedom from phasing difficulties of other types. Each enclosure has been meticulously engineered to achieve full advantage of the potentials of your Altec loudspeaker.

The suffix letters in the cabinet code numbers indicate the speaker sizes for which the cabinet may be ordered. They are available only for those sizes indicated: A for 15", B for 12" and C for 8".



SPEAKER CABINETS

Code #	Height	Width	Depth	Finish	Approximate Shipping Weight	Price
607A-B	35"	31"	17"	Mahogany	90 lbs.	$177
611B-C	21-7/8"	21-13/16"	15-7/8"	Blond, mahogany	30 lbs.	$ 48
853A	30"	42"	18"	Walnut, blond, mahogany	80 lbs.	$150
871A-B	30-1/2"	33"	15-7/8"	Walnut, blond, mahogany	55 lbs.	$105
872A-B	30-1/2"	33"	19"	Walnut, blond, mahogany	55 lbs.	$111
873B-C	30"	19-1/2"	16"	Walnut, blond, mahogany	40 lbs.	$ 75
874B-C	30"	19-1/2"	13-7/8"	Walnut, blond, mahogany	38 lbs.	$ 81

ALTEC LANSING CORPORATION

ALTEC LANSING CORPORATION
1515 S. Manchester Ave., Anaheim, Calif.
161 Sixth Ave., New York, N.Y.

ALTEC DEALER LOCATIONS

12-10K

ALABAMA

Auburn
Herbert Music

Birmingham
Ack Radio Supply Company
Custom Hi-Fidelity Co.
English Village Radio & Television Co.
James W. Clary Company
Tanner Communications Co.

Grove Hill
Century Television Hi-Fidelity

Mobile
Hoover Hi-Fi & Record Shop
Nelson Radio & Supply Co., Inc.

Montgomery
Mercantile Paper Company

Opelika
Southern Electronics Corp.

ARIZONA

Phoenix
Audio Specialists
Elco Company
High Fidelity Sound Systems
Westwood Builders Supply

Prescott
Franklyn E. Brown Co.

Tucson
Art Electronic Supply Co.
Roh's

ARKANSAS

Ft. Smith
Wise Radio Supply

CALIFORNIA

Albany
Sieler Design Products

Arcadia
Mitchell's El Rancho TV

Bakersfield
Bakersfield Audio & Alarm Devices
Specialized Sound Service
Urner's

Berkeley
Berkeley Custom Electronics
Thos. Tenney, Music on Records

Big Bear Lake
Walker Electric Company

Buena Park
Ford Electronics

Burbank
Audio Mart

Chico
Gene Tapie-High Fidelity & Radio Mart

Claremont
C n' B Hi-Fi

Coronado
Coronado Auto Parts

Costa Mesa
Dan's TV Service

Culver City
Bar-Shel TV Supply
Electronic Trading Post
Hi-Fi Matic
White Enterprises

Eagle Rock
Pacific Union Supply Company

Fresno
The Tingey Company

Fullerton
Turntable Hi-Fi, Inc.

Gardena
Video Supplies

Glendale
The Bartholomews, Inc.
General Electronics
Medico-Electric Labs.
Pedrini Music Co.

Hayward
Alcalde's Radio Center

Hollister
John J. Kurtich

Hollywood
A-1 Audio Engineers
Audio Video Service
Hollywood Electronics
Pacific Radio Exchange, Inc.
Tectron Hi Fi
W. E. Prior

Huntington Park
King's Hi Fidelity Sound Co.

Inglewood
A. T. Anderson Co.
Newark Electronic Company
T & W Electronic Consultants

Laguna
Laguna Music

La Jolla
Audio Workshop
La Jolla Sporting Goods

Lancaster
Ling's Music Box

Lodi
Guptill's Hi Fi

Long Beach
Custom Sound
Frank Brothers
Metrooolitan Industries

Los Altos
Fidelity Sound Service

Los Angeles
Acatron Electronics
A. F. Milliron Company
Arco Electronics
Atlas Electronic Co.
Bert Launspach
Beverly Hi-Fi
Beverly TV & Radio Company
B. F. Shearer Company
Bushnell Electronics
California Sound Products, Inc.
Church Sales, Inc.
Coast Export Company
Coast Record Mfg. Co., Inc.
Corrigan Engineering Corporation
Crenshaw Hi-Fi Center
Dean Simmons Company
Electronic Sales
Fairfax Radio Electric Co.
Federated Purchaser, Inc.
Figarts Radio Supply Co.
Hannon Engineering, Inc.
Henry Radio
J. M. Boyd Company
Kierulff Sound Corporation
Magnetic Recorders Co.
Midway Electronic Supply Co.
Pembrex Theatre Supply Corp.
Penny-Owsley Company
Radio Products Sales, Inc.
Radio Recorders Equipment Co.
Radio Specialties
Ralke Company, Inc.
Silvert's Inc.
Sound Foyer
Spectrum Electronics
Talk-O Communication Co.
Tel Ray Service
Universal Radio Supply
Weingarten Electronics Laboratories
Wholesale Radio & Auto Accessory Co.

Malibu
Telcoa

Menlo Park
High Fidelity Unlimited

Monterey
Meagher Electronics Co.

Newport Beach
Custom Audio

North Hollywood
Chesney & Talmadge, Inc.
Concertmaster Sound

Oakland
Love Music Co.
Olin S. Grove Co.
Stairway to Sound

Ojai
Adams Radio Company

Ontario
Rudi L. Pack

Pacific Palisades
Hurst Adams Company
So. Cal. Sound Engr.

Palm Springs
The Music Shop

Palo Alto
Aurodyne, Inc.

Pasadena
Audio Associates
Dow Radio, Inc.
Hi-Fidelity House

Pomona
Anderson-Maggs Electronics

Redondo Beach
Bay Electronics

Richmond
Linhart Radio and Television Service
Thomson Electronics

Riverside
Hi. Fi. Music Room
Hi Fi Shop
Rhythm House

Rosemead
Audiophile

Sacramento
Hi Fi Sound Shoppe
Record Supply Co.

San Bernardino
Hollywood Hi Fi Shop

San Diego
Breier Sound Center
Communications Company
Shanks and Wright
Silvergate Radio Supply Company
Wright's House of Hi-Fi

San Francisco
A. B. Laudermilk Co.
B. F. Shearer Company
California Music House
Eber Electronic Supply, Inc.
Fidelity Music, Inc.
Hal Cox Company
Harry McCune Sound Service
Hi-Fi Shop
House of Karlson
Kopf Sound Supply
Pyramid Sound
San Francisco Radio & Supply Co.
Sound Recorders, Inc.
Television Radio Supply Co.
The Listening Post

San Jose
Allied Radio & Elec. Co.
Pacific Installation Co.
Paramount Sound

San Luis Obispo
Allen's Sight & Sound

San Pedro
Bowers Music

Santa Ana
Lowensteins
Orange County Music, Inc.

Santa Barbara
Peterson Studios, Inc.
The Gramaphone Shop

Santa Monica
D'Errico Fidelity Radio

Sherman Oaks
Barco Electronics

Solvang
Decor House

Stockton
Ace Electronics
Custom Hi-Fidelity
Dunlap Radio & Television Supply Co.
Quality Sound Service

Tarzana
Gilbert J. Gilbert Company

Thousand Oaks
Goshay Company

Van Nuys
The House of Sight and Sound

Ventura
Dealers Wholesale Supply
Electronic Communication Company

West Los Angeles
Santa Monica Sound

Whittier
Commercial Sound Engineers
Hi-Fi Haven

COLORADO

Denver
Denver Electronic Supply Co.
Electronic Network
Gunnerson Sound
Lou Morgan Music
The Chas. E. Wells Music Co.
The Electric Accessories Co.

Pueblo
L. B. Walker Radio

CONNECTICUT

Bridgeport
Bowman Record Shops
Kaufman Electronics

Danbury
Mured, Inc.

Hartford
Tel-Rad, Inc.
The Moses Radio-Electronics Co.
The Record Shop

Middletown
Watt & Decibel

Milford
Michaels

New Canaan
Gorton's Inc.

New Haven
Broadway TV Service
Cutler, Inc.
Cutler's Record Shop Inc.
David Dean Smith, Jr.
Radio Shack Corp.
Vincent Radio Co.

New London
American Television & Radio Co.

Waterbury
Bond Radio Supply, Inc.

West Hartford
Arthur E. Chase High Fidelity Salon
Audio Workshop, Inc.

Westport
Reed's Camera Shop

DELAWARE

Wilmington
George W. Bumpas
Le Compte Company
Wilmington Electrical Spec. Co., Inc.

FLORIDA

Clearwater
Reynolds Radio & Television, Inc.
Southeastern Electronics, Inc.

Coral Gables
Bernie Armstrong High Fidelity

Fort Lauderdale
Certified Radio & TV
High Fidelity Sound Systems
Music Center Incorporated

Jacksonville
Brown's Camera Store
Ehringers
Fidelity Sound
Hoyt High Fidelity Center

Lakeland
Lakeland Home Freezer Center

Melbourne
Wynack Associates

Miami
Central Music Co.
F. Hastings Stephens Labs., Inc.
Flagler Radio Co., Inc.
High Fidelity Associates
Hill Sound Systems

Miami Beach
Miami Beach Radio Co.
American Antennae Co., Inc.

Orlando
Baggett Electronics
Bill Baer Radio and Television
Electronic Distributors, Inc.

Palm Beach
Salon of Music

Panama City
Thompson Appliance Co.

Pensacola
Grice Radio & Electronic Supplies
R. H. Irwin Radio Service

Sarasota
Hutchinson TV & Appliance

St. Petersburg
Allcorn Electric Co.

Tallahassee
Tom Dunn Sound & Communications

Tampa
Arthur Smith Music Co.
Burdett Sound & Recording Co.

Winter Park
Laird Electronics

GEORGIA

Albany
Hi-Fi House

Atlanta
Baker Fidelity Corporation
Bame's, Inc.
Eckhardt-Ness Electric Co.
Kemph Radio Company
Oliver Electronics
Southeastern Radio Parts Co.

Augusta
The Sound Center

Brookhaven
Norman's TV Sales & Service

Columbus
Radio Sales and Service Co.

Dalton
Cochran's Radio & TV Supply

Valdosta
Mathis & Youmans Co., Inc.

Waycross
Waycross Radio & TV

IDAHO

Boise
Boise Music, Inc.
Cliff's House of Hi-Fi and Music

Idaho Falls
P K's Electronics

Payette
John Baldridge Electric

Pocatello
Tele-Tek

ILLINOIS

Addison
On The Spot Recording Co.

Aurora
Johnson Radio & Sound

Carbondale
Lemasters Music Company

Chicago
Allied Radio Corp.
Arpio Sales
Artists Recording
Audio Arts Associates
Audio-Craft
Boom Electric Corporation
Clayton Radio Parts
Crilly Radio & Sound
DeHaan Hi Fi
Eastern Art Products
Electronic Expeditors
Fried's
Midwest Sound Systems, Inc.
Musicraft Inc.
Olson Radio
Precision Hearing Aids
Radiolectric Sales-Service
Recording Services Co.
Shalkor Sound Equipment Company
Sound By Tiny
Star Electronic Distributors, Inc.
Super Electric Construction Co.
Television Equipment Co.
Triangle Sound Systems
Tri-Par Sound Systems, Inc.

Decatur
Macon Music Co.

Deerfield
Fragassi Radio & TV

East St. Louis
Joseph Rountree Hi-Fi Studios

Freeport
Custom Electronics

Glencoe
Skokie Electric

Highland Park
Grant & Grant Inc.

Kenilworth
Arnold Schaffner, Inc.

Lake Forest
Grant & Grant Inc.

Moline
Lofgren Distributing Co.

Mt. Vernon
Ace Recording Co.

Northbrook
Northshore Audio

Oak Park
Tri-Par Sound Systems, Inc.

Peoria
Klaus Radio & Electric Co.
United Radio Service

Quincy
Gates Radio Company

Riverdale
Audio Distributors

Rockford
Rockford Hi-Fi

Rock Island
Tri City Radio Supply, Inc.

Skokie
Panoramic Builders

Springfield
Beatty Electronics
The Music Shop

Villa Park
Super Recordings, Inc.

Waukegan
Lake Television Lab.

Wheaton
Modern Home Utilities

INDIANA

Anderson
Jones Hi-Fi Sound Supply

Crown Point
Veach Electric Company

Fort Wayne
Brown Electronics

Hammond
Community Radio & TV

Indianapolis
Audio Services, Inc.
Communications Equipment Co. Inc.
Graham Electronics
Utility Service Company

North Manchester
Applied Electronics

IOWA

Davenport
Parrmann's Record Shop
Tri City Radio Supply, Inc.

Des Moines
LeCroy's Sound Company
Thomas Electric Company

Dubuque
Boe Distributing Company

Fort Dodge
Ken-els Radio Supply Co.

Iowa City
Woodburn Sound Service

Knoxville
Crews & Jones Rexall Drug

Waterloo
Farnsworth Radio & TV Company

ALTEC DEALER LOCATIONS

12-10L

KANSAS

Coldwater
Hi Fi Components

Lawrence
Fred E. Sutton & Co.

Leavenworth
Chilson Radio Company

Prairie Village
Toon Shop

Topeka
Carroll Radio & Sound Co.
Plaza Television

Wichita
Electronics
McClelland Sound Equipment Co.
Sound Barrier Recording Company
Stark Brokerage Co.

KENTUCKY

Lexington
Radio Engineering & Maintenance Corporation

Louisville
Fred B. Watjen
Golden Ear, Inc.
Lewis Sound
Magi-Chord Hi Fi Co.
Universal Radio Supplies

LOUISIANA

Baton Rouge
Ogden Park Record Shop, Inc.

Lake Charles
Sylvan's Sound Service

New Orleans
Custom Electronics, Inc.
Electronic Parts Corp.
P. H. Werlein Ltd.
Sound Supply Company
Southern Radio Supply

Shreveport
J & S Music Co.
Keolemay Sales Co. Inc.

Thibodaux
Block Furniture Store of Thibodaux, Inc.

MAINE

Augusta
Corner Music & Book Shop

Bangor
Andrews Music House
Richard W. Gustin

MARYLAND

Baltimore
Baltimore Sound Engineering
Customcraft Sound Studios of Park Radio & TV Co.
Stanley Klein's TV Service
The Kunkel Piano Co.

Cumberland
Enterprise Amusement Co. Inc.
Sykes Music Store

Silver Spring
Alperstein's Electric Village Hi-Fi Center

Towson
Audio Crafters, Ltd.

MASSACHUSETTS

Boston
A. Marks Company
Broadcast Services, Inc.
C. W. Homeyer Co. Inc.
DeMambro Radio Supply Co. Inc.
Electro Sound Corp.
Lake Service Corporation
Radio Shack Corporation
Radio Wire & Television Co.
Standard Wholesale Supply Corp.
The Listening Post Inc.
Yankee Electronics

Brookline
Lowe Associates Inc.

Cambridge
Bolt, Beranek & Newman, Inc.
Electrical Supply Corp.
Grason-Stadler Company
Hi Fi Laboratory Electronic Supply

Charlestown
L. V. Nihan

Fall River
Radio Centre

Framingham
Hi-Fi Studio

Holyoke
Tel-O-Wire Sound Co., Inc.

Lowell
Michaels TV and RADIO

Marblehead
Damon Tucker's

Methuen
A & L Sound Co.

Middleton
Customcraft

Pittsfield
Sammy Vincent, Inc.

Sheffield
Walter M. Jones Apparatus Co., Inc.

Southbridge
Bastien's

Springfield
Regent Sales, Inc.
The Audio Shop

West Medford
General Radio & Appliance Co.

West Newton
Le Loumas Television & Appliance Center

Wellesley
Music Box Inc.

Winchester
Winchester Appliance Co.

Worcester
Atom Radio Co.
Radio Electronic Sales Co.
Radio Maintenance Supply Co.

MICHIGAN

Ann Arbor
Ann Arbor Music Center, Inc.
Ann Arbor Radio & TV
Wedemeyer Electric Supply Co.

Berkley
Stylus Studios

Detroit
Detroit Audio Company
H. A. Roseberry & Son
Mumford Music
Reiss Public Address Systems
Town and Country Sound Systems

Escanaba
Felton Radio & TV Supply Co.

Flint
Jensen, Inc.
Radio Tube Merchandising Co.

Grand Rapids
Audio Arts Company
Louis C. Bergenroth Electronic Service
R. L. Karns Electronics

Grosse Pointe Woods
L. L. Dacken Electronic Laboratory

Kalamazoo
Kuiper & Warfield Electronic Service Co.

Lansing
Pino's Music Shop
Tape Recording Industries

Muskegon
West Michigan Sound Co.

Owosso
Hunns Drive In Appliance

Petoskey
Sound Equipment Sales

Pontiac
Customade Products Co.

Saginaw
Radio Center

MINNESOTA

Albert Lea
B & H Sound Equipment Co.

Minneapolis
Background Music, Inc.
Binaural Sound Co.
Electronic Industries, Inc.
Empire Photosound Incorporated
Flash Radio & Television Sales Co.
Minnesota Electronics Co.
Northwest Sound Service Inc.
Paul A. Schmitt Music Co.

Moorhead
Akins Electric

Rochester
Bach Music Co.

St. Paul
Gulck's Appliance & Record Company

MISSISSIPPI

Jackson
Brown Music Co.

MISSOURI

Clayton
High Fidelity Showroom, Inc.

Columbia
Lassiter Reminder Company

Independence
Don Cook's Electronic Equipment Co.

Jefferson City
Hackmann Sound Service

Kansas City
Audio Communications, Inc.
Foremost Record Center
G & R Sound Service
Hi-Fi House
Northrup High Fidelity Sound
Sound Service Company

Kirkwood
Frontenac Electronics

Poplar Bluff
Don Lidenton

Springfield
Linder Radio Co.

St. Louis
Bigalte Electric Company
J. C. Gordon Company
Jones & Davis Co.
King Radio Company
Newberry Radio Co.
R. A. Olive Radio Co.
Van Sickle Radio Co.
Walter Ashe Radio Co.

Webster Groves
W.B.P.A. Sound Systems

MONTANA

Billings
Electronic Supply Company

Glasgow
Bowles Jewelry

Great Falls
Ken Kaiser Music Co.
Northwest Hammond Studios

Helena
Holter's-Scientific Specialties Dept.

NEBRASKA

Omaha
American Sound Co.
House of Hi-Fi
National Sound Equipment Co.
O'Donnell Sound Service
Radio Equipment Company

NEVADA

Las Vegas
Electronic Supply
Rugar Electric Company
The Nevada Book Store

Reno
Hi-Fi Shop
Lusetti's Home Appl.

NEW HAMPSHIRE

Concord
Evan's Radio

Dover
American Radio Corporation

Manchester
Radio Service Laboratory

NEW JERSEY

Atlantic City
Boardwalk Film Enterprises

Bergenfield
C. D. Kreps

Bridgeton
Joe's Radio Shop

Camden
General Radio Supply Co.
Selbee Communications

Clifton
Lam Sound Recording Co.

Cranford
Marcell Audio

East Orange
International Sound Engineering Co.

Eatontown
High Fidelity Sound Center

Englewood
Music Manor

Fair Lawn
Production Recording & Sound

Glen Rock
Glen Rock Electrical Appliances

Greenwich
Greenwich Specialty Co.

Hackensack
Fototeria

Haddonfield
Audio Products Inc.

Hasbrouck Heights
Earle Davis

Irvington
Audio Engineering Service

Jersey City
Martin Seel Radio & T.V.
Ochs Service

Leonia
TV Clinic Inc.

Lodi
Lodi Radio

Madison
Davis Sound

Montclair
Perdue Radio Co.

Morristown
M. & M. Electronics & Television Co., Inc.

Mountainside
Federated Purchaser, Inc.

Newark
Centralized Audio Corp.
Daidone All Electric
Hudson Radio & Television
Radio Wire Television, Inc.

New Brunswick
"The Jabberwock"

Nutley
Beck's Radio & Television

Paramus
Music Age

Paterson
Community Radio & Sound Co., Ltd.

Princeton
Princeton Listening Post
Princeton Music Center

Roselle
Audio Craftsmen

Teaneck
John S. Casey Co.
Linsey Electronics

Trenton
Brooks Sound Service

Union
Union Camera Exchange

NEW MEXICO

Albuquerque
Hi-Fi Equipment, Inc.
Sound Engineering & Equipment Co.

Clovis
Norman Petty Studios

Las Cruces
Music Box

Los Alamos
Valley Engineering Co.

Roswell
Supreme Radio Supply

Santa Fe
Sanders & Associates

NEW YORK

Albany
Hi-Fidelity Center, Inc.
Olisonde Inc.

Amityville
Amity Radio

Astoria
Camera Hobby Shop

Bayside
S & L Appliance Co.

Bethpage
S & R Electronics

Binghamton
Audio Service Co., Inc.

Brentwood
Henkel Radio and Television Service

Bronx
Temple Sound Equipment Co., Inc.

Bronxville
Ferris Co., Inc.

Brooklyn
Allservice Co.
Ampart Service, Inc.
Audio Engineering
Benray Electronics Corp.
Brooklyn Hi-Fi Center
Electronic Equipment Co.
Fidelity Sound Company
Linn Television Service, Inc.
Potter's
Roslyn Trading Corp.
Starling Electronics
State Camera Exchange
Trollo Engineering Service

Buffalo
Buffalo Audio Center
Fisher Sound Systems
F. M. Sound Equipment Corporation
Transtudio Corporation
Walter Jones Audio

Corona
A. I. Furniture & Record Shop
Balsam Radio & TV

DeWitt
Cerone's

East Hampton
Books & Music Incorporated

East Meadow
Sound Service Engineers

East Rockaway
The Concert Hall Music Center, Inc.

Elmira
Dale Taylor

Elmont
Darest Home Appliance

Floral Park
Merolla Music

Flushing
G & G Television Corp.
Hi Fi Depot
P.A.G. Television
The Armor Maintenance Corp.

Forest Hills
Beam Electronics

Freeport
Fidelity Tone & Sound Shop

Garden City
Garden City Music Center

Glens Falls
Niagara Electric Equipment Co.

Great Neck
Gordon Radio & TV

Hempstead
Archie Bleyer's Record Center
Island Audio & Hi-Fi Center
Newmark & Lewis
Stage Sound

Huntington
Audio Consultants Inc.

Inwood
Vocalaire Gold Sound, Inc.

Ithaca
Stallman of Ithaca, Inc.

Jackson Heights
Krantz Radio Corp.
Radio Craig
Video Radio Co.

Jamaica
Audio Exchange
Peerless Radio Distributors Inc.

Kenmore
Sheridan Hi-Fidelity Center

Levittown
Sirkins Camera & Hobby Center

Long Beach
Melody Mart

Long Island City
Ampeg Bassamp Co.
Electronic Development Laboratory
Long Island Home Appliance Corp.
Parett's

Lynbrook
Arnee Camera Exchange

Manhasset
Kelt Bogedam
Manhasset Music Center
Newmark & Lewis

Massapequa Park
Platter Corner

Mt. Vernon
Circle Radio Co. of Mt. Vernon
Cross Country Audio Exchange
Davis Radio Distributor Co., Inc.
McKee Electric Company

New York
Airex Radio Corp.
Altel-Inter-Communication & Sound Systems Co.
American Communications Corp.
Arrow Electronics, Inc.
Audio Unlimited Inc.
Audio & Video Recording Corp.
Benchimol & Company
Bennett Radio Distributors, Inc.
Bryce Appliance & Record Corp.
Camera Equipment Co.
Center Electronic Co.
Centre Camera Exchange
Chilora, Inc.
Colony Luggage and Appliance Co.
Consolidated Radio Sales Corp.
Crown National Corp.
Custom Television Co.
David Sarser
Erb Elec. Supply Co.
Federated Purchaser Inc.
Fischer Distributing Co. Inc.
Goody Audio Center
Grand Central Radio, Inc.
Harrison Radio Corporation
Harvey Radio Co., Inc.
Heins & Bolet
Hudson Radio & Television
Ideal Radio Co.
Isotone Acoustic Spiralways, Inc.
Julius Welkers & Co.
Leonard Radio, Inc.
Magic-Vue Television Corp.
Magna Tech Electronics
Masque Sound & Recording Corp.
Midway Radio & Television
Milo Radio and Electronics Corp.
Paramount Radio
Park East Radio Company
Peerless Camera Stores, Inc.
Photocraft Stores
Rabson's, Inc.
Radio Service Laboratory
Radio Wire Television, Inc.
Smith-Meeker Engineering Co.
Sonocraft Co., Inc.
S.O.S. Cinema Supply Corp.
Sound Associates Inc.
Sound Consultants, Inc.
Stewart's Radio & Television Corp.
Success Trading Co.
Sun Radio & Electronics Co., Inc.
Terminal Radio Corporation
Thalia Hi-Fi Audio Co.
Thor Radio Co.
United Elco Electric Co., Inc.
Uptown Camera Exchange
Vendome Trading Corp.
Victor Appliance Co.

Oceanside
Ravel TV Company

Pearl River
C & W Radio & Appliance

Potsdam
Rodger Radio Company

ALTEC DEALER LOCATIONS

12-10M

NEW YORK (cont.)

Pulaski
Pulaski Music Store

Queens Village
Village Camera

Ridgewood
Jet Television Maintenance Inc.

Rochester
Jerry Fink Company

Rockville Centre
Henmar Electronics

Roslyn
Segan Electronics, Inc.

Rye
Kibling Electronics, Inc.

Southampton
House of Music

Troy
Trojan Electronic Supply Co., Inc.

Watertown
Severance Photo Inc.

White Plains
General Sound & Electric Company
High Fidelity Center

Woodhaven
Tru-Video, Inc.

Woodmere
J & S Television Radio
Long Island Radio & Television Co.

Yonkers
Normandie Music
Westlab Electronics

NORTH CAROLINA

Charlotte
Audio Visual Co.
Brodt Music Company
Southeastern Sight & Sound Corp.

Durham
Cobb's Television & Sound, Inc.

Greensboro
Southeastern Sight & Sound Corp.

Hendersonville
Bradley Enterprises

Raleigh
Southeastern Radio Supply Co., Inc.
Southeastern Sight & Sound Corp.

Rocky Mount
W. C. Reid & Co., Inc.

Shelby
Robt. Van Sleen

Wilmington
Lee Electronics

Winston-Salem
Long Engineering Co., Inc.
Separk Music Company

OHIO

Akron
B & F Enterprises
Brown Communications Company
Central Appliance and Tire
Olson Radio Warehouse Inc.

Canton
Walkeradio

Cincinnati
Chamber's Electronics Supply Co.
Customcrafters Audio Inc.
Singer Radio & TV
Smith-Schaefer, Inc.
Steinbergs Inc.

Cleveland
Audio Craft Co.
National Manufacturing Co.
Olson Radio
Perry Briggs Company
Progress Radio Supply Co.
Radio & Electronics

Columbus
Anderson High Fidelity Center
Anthony Music Co.
Electronic Supply Corporation

Dayton
Dayton Sound Associates
Klopf's Piano & Organ Co.

Elyria
Allied Service

Lakewood
Music Unlimited

Lorain
Heisner Radio Inc.

Mansfield
Audio Consultants
Walsh Sound Equipment

Maple Heights
RST Labs

Marietta
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Rockbar is the American sales agent for Collaro and other fine companies.

by ROLAND GELATT

music makers

G. RICORDI & CO., the long-established music publishing house in Milan, has invaded the record business — and in doing so has caused much excitement, and a little consternation, within the industry. New record companies are launched fairly regularly these days, but seldom do they possess the artistic prestige and financial affluence to which Ricordi can lay claim. An indication of what that prestige and affluence may accomplish is to be seen in Ricordi's most recent venture: a complete recording of Cherubini's *Medea*, conducted by Tullio Serafin with Maria Callas in the title role, the sessions for which were due to be completed at the end of September.

Ricordi entered the record field by way of the movies. After the war, the company had moved into the soundtrack business, supplying producers of made-in-Italy motion pictures with original scores, copyists, and performing musicians. At first, these soundtrack recordings were made only on film; later it was decided to record simultaneously on film and magnetic tape, in hopes that the latter would yield raw material for some commercial LP discs. These hopes did not materialize. Ricordi's early tapes were not good enough technically to compete in the world market. In the meantime, while Ricordi engineers were catching up with audio progress, the company determined to raise its sights and join the booming international LP industry as a full-fledged producer.

Originally the intention was to record only orchestral music published by the company — in particular, little-known modern works by Italian composers. Such a program, it was reasoned, would fill the gap in the LP catalogue and provide a showcase for Ricordi music. As publishers and copyright owners, Ricordi could even afford to take a small loss on the records themselves, inasmuch as fees for radio performing rights would serve to balance the books.

The "showcase" program is already well under way. Orchestral works by Casella, Falla, Malipiero, Menotti, Pizzetti, Respighi, Rieti, Villa-Lobos, Zandonai, and others have been or will be recorded. The first LPs are to be released in Italy on Ricordi's own label this fall: a coupling of Falla's *Homenajes* with a Villa-Lobos ballet, *The Surprise Box*; Respighi's three suites of *Antiche danze ed arie*; and a miscellany of music with Venetian connotations. These recordings will be brought out in the United States by RCA Victor.

It was probably inevitable that Ricordi, the publishers of Verdi and Puccini, would eventually succumb to the temptation of recording complete operas. And the company has. Its operatic teeth were cut on Raffaello de Banfield's *Lord Byron's Love Letter*, recorded (in English) by much the same cast that performed the première at Chicago's Lyric Opera two seasons ago. The above-mentioned *Medea* starring Maria Callas was Ricordi's second operatic undertaking. Many more are contemplated. Although no final arrangements for American rights to the Ricordi'd operas have been concluded, the odds favor Mercury. Mercury has a special lien on *Medea*, since Ricordi engaged the entire Mercury recording staff to put it on tape.

The participation of Callas in *Medea* is explained by an escape clause in the soprano's contract with EMI, permitting her to record for another company an opera which EMI has no intention of recording itself. Casting future operas may be more difficult, because of the exclusive contracts binding so many of today's top singers, but such difficulties do not dismay the executives of this old Italian firm. "Ricordi will celebrate its 150th birthday next year," Dr. Franco Colombo, director of the New York branch office, observes. "We can afford to wait."

GOSSIP: RKO Unique, one of the newer pop labels, is said to be negotiating the rights to Supraphon's classical catalogue, rich in Czech operas and orchestral recordings by the Czech Philharmonic. . . . HMV recorded this summer Verdi's *Simon Boccanegra* and Puccini's *Suor Angelica*, both in Italy, both with Victoria de los Angeles. . . . RCA Victor is scheduling the Milanov-Bjoerling-Warren *Tosca* for release in November. . . . Another *Tosca* (and a *Bohème* too) is coming from Epic, starring Antonietta Stella. . . . Sir Thomas Beecham is on an eighteen-month leave of absence from England. However, he is happily not on a leave of absence from the recording studio. In Paris this fall he is due to make the complete set of Haydn's *London* symphonies with the Royal Philharmonic, for EMI-Angel. . . . Scherchen fans will welcome the news that the conductor has completed a long series of stereophonic recordings, made in Vienna for Westminster-Sonotape. . . . A new classical label, Washington Records, makes its debut this month. First releases will include some off-the-beaten-track Beethoven played by Artur Balsam and sundry works by Vivaldi, Durante, and Telemann played by the Orchestra da Camera Italiana under the direction of Newell Jenkins. . . . The much-praised and little-recorded American soprano Eileen Farrell has just finished a week of sessions in EMI's London studios. Two recital LPs, one of opera arias, the other of songs and ballads, can be expected. . . . Sir Adrian Boult, who is recording the nine Beethoven symphonies for Vanguard, asked that these familiar works be taped straight off, without preliminary rehearsals. His reason: the fear that rehearsing might stale the musicians. The results (three symphonies were recorded this summer): said to be extraordinary. . . . . Yury Boukoff, Bulgarian pianist, who makes his American debut on October 17 with the Cincinnati Symphony, will record for Westminster while in New York. . . . The next EMI-Angel operas planned for Maria Callas: Donizetti's *Anna Bolena* and Verdi's *Macbeth*.

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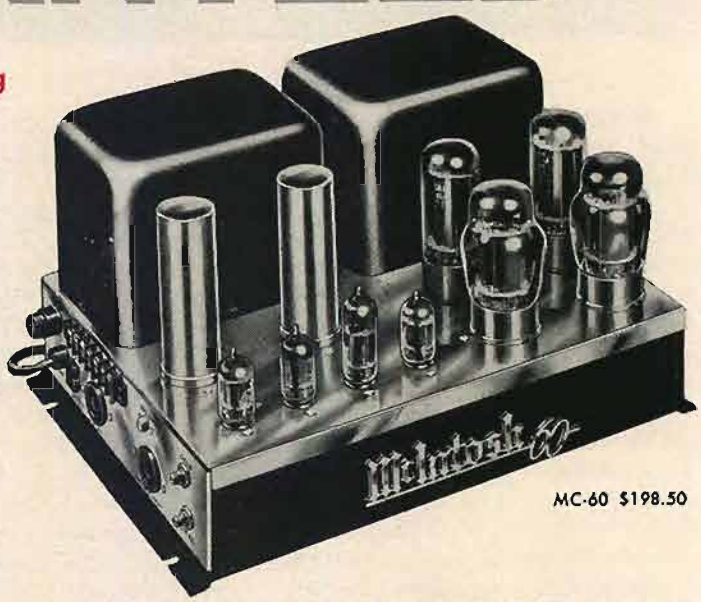

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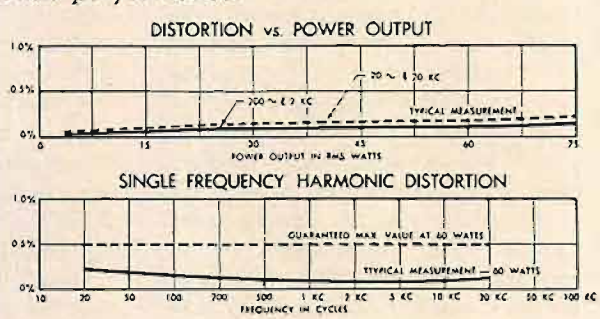

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HF 10-57

EUROPEAN SUMMER FESTIVALS

by Andrew Porter

A "stop-press" report

SALZBURG — Very touristy, but more decent-quality opera performances in a row than any other festival. For discophiles there was interest in hearing how Karajan's star-studded *Falstaff* cast actually took to the stage. This Gobbi-Schwarzkopf-Karajan performance was originally created in bits and pieces in London's Kingsway Hall, for the Angel recording, then staged at La Scala, Milan — too soon after Toscanini's death, said many critics — and now was to be heard at Salzburg, where from 1935–9 the opera had been a regular in the Festival roster, conducted the first three years by Toscanini, and always with Strabile as Sir John.

Some disc reviewers suggested that Gobbi's account of the title role was essentially a gramophone performance, that engineers probably had played a part in bringing it up to Falstaffian dimensions. The Festspielhaus performance gave this the lie, vindicating the discs as being, on the whole, a true representation. Gobbi is not ideally fat of voice, but he offered a wonderfully rounded and full study, grandly self-satisfied, dignified even in absurdity. It was a more Shakespearean rendering than one might have guessed. Schwarzkopf's Alice was a bubbling delight, and beautifully sung. Rolando Panerai, who sounds so wonderful on the records, proved a little smaller-voiced in life, but his brooding looks, dark suffering, and almost Otello-like handling of the Jealousy Monologue added a thrilling new dimension to the second act.

Luigi Alva's merits lie not only in the pretty *tenore di grazia* known from records, but also in mobile, alert features and a really charming stage presence. Yet he sounded a little small in the big house. So did the attractive American soprano Anna Moffo, Nannetta. As Mistress Quickly, Giulietta Simionato was a big improvement on Barbieri. I last heard her singing Giovanna Seymour to Callas' Anna Bolena, and then she seemed to have got into a way of absurd chest-note exaggeration of anything lying below about G. This suits Quickly, and so does Simionato's mischievous, fascinating stage personality. The Maestro's own inscenation, less careful and choreographed than the one Ebert gave us at Glyndebourne this summer, provided a broad, spacious framework for the individually well-studied impersonations. His conducting was amazingly brilliant, but without humour. Serious fault — yet the humour of the cast coupled with quicksilver orchestral playing amounted to a memorable performance.

Some recording news came from Walter Legge. He found assembled in Salzburg almost all the *Capriccio* cast that is currently recording the last Strauss opera in London, and flew in the missing ones so that rehearsals could begin there and then. The cast is Schwarzkopf (Madeleine), Eberhard Wächter (Count), Gedda (Flamand), Fischer-Dieskau (Olivier), Hotter (La Roche), Christa Ludwig (Clairon), Moffo (Italian Soprano). The role of the Italian Tenor is a break for Covent Garden's Dermot Troy, won on the strength of his Hylas in *The Trojans*. Sawallisch conducts.

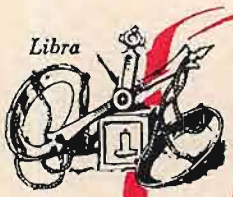
BAYREUTH — Sawallisch conducted *Tristan* in Wolfgang Wagner's new staging, which had small scenic merit, but offered in Birgit Nilsson an Isolde with a voice of darkly burnished timbre, very beautiful when soft, exultant at full force. Her gramophone debut is not far off. She will be a splendid Isolde when and if she grows into the role, resists the temptation to show off her vocal muscles, and learns to round off *all* the phrases in the *Liebestod* as beautifully as she did some. Sawallisch conducted with magnificent control of dramatic timing and loving care for proportioned detail. Only occasionally did the hearer feel that his surrender to the music was less than complete, that his mind alone was dedicated to the score.

EDINBURGH — This festival was built around a four-opera season by the Piccola Scala, so-called. Actually, three big Scala productions are cut down to serve — *Il Turco in Italia, La Sonnambula*, and *L'Elisir d'amore* — with Cimarosa's *Matrimonio segreto*, which originally opened the Piccola Scala schedule in 1955 and has remained the *pièce de résistance*. Proceedings began with *La Sonnambula*, starring "La Divina," Maria Meneghini Callas, not in her most divine voice. The première had uneasy moments, and by the third performance almost every sustained note around F threatened to crack and collapse: "*Ah, non credea*" was a painful experience for everyone in the theatre. Despite which, there was engrossing art in her impersonation. On the stage she seemed the embodiment of Amina as described by Romani, the librettist: "innocent and at the same time passionate, with a cry for joy and a different cry for sorrow, different accents for reproof and for prayer; she should show in every movement, every glance, every sigh, a certain stylization mingled with realism such as we find in some Albani paintings and some of Theocritus's idylls."

After four performances, the diva ("tired") flew back to Milan, and Renata Scotto took over. I missed this (heard it was a great success), but caught Miss Scotto, *vice* an indisposed Rosanna Carteri, in *L'Elisir d'amore*. She fully justified the glowing sentences I wrote about her here last August.

In three superb recitals of Bach cello sonatas, Janos Starker proved that records don't lie, even though they may add to human excellence a superhuman purity of intonation. The Hollywood String Quartet, immensely admired over here for several Capitol performances, seemed almost to show that records *do* lie, when they made a sadly disappointing Edinburgh debut playing late Beethoven — not their métier. Later concerts restored our faith.

The death of Dennis Brain, killed in a motor smash while returning to London from the festival, affords Edinburgh 1957 a tragic postscript. There are not many masters of the French horn, that captious and incomparably stirring instrument. He was one. Apparently we will have only one more Dennis Brain record, a performance of the Hindemith concerto which Angel will issue in January.



October

Opera

PELLEAS ET MELISANDE

Victoria de los Angeles makes her Angel debut singing Mélisande in this shimmering, definitive recording of Debussy's masterpiece. Gerard Souzay *(Golaud)*; Jacques Jansen *(Pelléas)*, Pierre Froumenty *(Arkel)*. André Cluytens, conductor.

3 records **Angel Album 3561 C/L (35478-79-80)**

Note: This recording postponed from September

LA SONNAMBULA (Bellini)

La Scala recording. Callas, title role. Nicola Monti, *Elvino.* Nicola Zaccaria, *Count Rodolfo.* Fiorenza Cossotto, *Teresa.* Eugenia Ratti, *Lisa. Conductor:* Antonino Votto.

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Choral

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Another in the series of magnificent oratorios conducted by Sir Malcolm Sargent with the Huddersfield Choral Society, Liverpool Philharmonic. *Soloists:* Elsie Morison, Marjorie Thomas, Richard Lewis, John Cameron. Booklet with text.

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STRAVINSKY: PERSEPHONE (poem by André Gide)

Recorded in Paris. André Cluytens, conductor.
Nicolai Gedda, *Eumolpe, The Priest.* Claude Nollier (Comédie Française), *Persephone.* Chörale de l'Université de Paris. Illus. booklet with French, English texts. **Angel 35404**

Orchestral

KARAJAN conducts Brahms Symphony No. 2

Philharmonia. **Angel 35218**

Reminder: Karajan-Philharmonia, Brahms First (35001); Brahms Fourth (35298).

BEECHAM conducts Mozart

'Jupiter' Symphony • Divertimento in D, K.131
Royal Philharmonic **Angel 35459**

CARLO MARIA GIULINI conducts Ballet Suites

Stravinsky: Fire Bird • Bizet: Children's Games
Ravel: Mother Goose
Philharmonia **Angel 35462**

THOMAS SCHIPPERS conducts Prokofiev Symphony No. 5

Philharmonia **Angel 35527**

Piano

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Album 3: Rondeau Brillant in B minor; Fantaisie for Violin and Piano in C. **Angel 35366**

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Records in Review

Reviewed by PAUL AFFELDER NATHAN BRODER C. G. BURKE
JOHN M. CONLY RAY ERICSON ALFRED FRANKENSTEIN PHILIP C. GERACI JOAN GRIFFITHS
DAVID JOHNSON ROBERT CHARLES MARSH EDWARD L. RANDAL HAROLD C. SCHONBERG
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CLASSICAL

BACH: *Concertos for Clavier and Strings: No. 1, in D minor, S. 1052; No. 5, in F minor, S. 1056; Toccata and Fugue, in C minor, S. 911*

Jean Casadesus, piano; Orchestre de la Société des Concerts du Conservatoire de Paris, André Vandernoot, cond.
ANGEL 45003. 12-in. $3.98.

Jean Casadesus, a son of the celebrated Robert, is, if this is a fair sample of his work, a pianist to be watched. He has the kind of comprehensive view of a movement that brings out the high spots in proper proportion to one another and to the rest without neglecting the detail in between. There is vitality and imagination in his playing, and he has a clean, crisp technique. The only thing one could cavil at, it seems to me, is the tempo at which he takes the Adagio of the D minor Concerto; it is faster than usual and the result is grace at the expense of profundity. Compared to the available recorded performances on the piano of the other two works, the Toccata here is superior and the F minor concerto as good as any. N.B.

BEETHOVEN: *Die Geschöpfe des Prometheus, Op. 43*

Hague Philharmonic Orchestra, Willem van Otterloo, cond.
EPIC LC 3366. 12-in. $3.98.

Anyone thinking of repeating the traditional slander about Beethoven's writing for the theater ought first to listen to this score as here presented. If he finds it other than a ballet of great beauty with most attractive potentialities for the choreographer, let him be perpetually banished to the limbo of the unperceptive and tin-eared.

From which one may gather that I consider this an unusually attractive recording, presenting a score unfamiliar to many of us in a performance true to Beethoven and to the dance tradition for which he wrote. The sound follows the usual Epic tendency of richness in the lower and middle registers with just a bit too little brilliance on top, but it's thoroughly agreeable.

The harp heard briefly in No. 5 of this work is the only appearance of that instrument in Beethoven's orchestral music. R.C.M.

BRAHMS: *Klavierstücke (6), Op. 118; Capriccio, in B minor, Op. 76, No. 2; Intermezzos: in E flat, Op. 117, No. 1; in E, Op. 116, No. 6; in E minor, Op. 119, No. 2; in C, Op. 119, No. 3; Rhapsody, in B minor, Op. 79, No. 1*

Wilhelm Backhaus, piano.
LONDON LL 1637. 12-in. $3.98.

At last Backhaus turns his attention to the shorter Brahms piano pieces. Those who remember his famous series for Victor in the early and middle 1930s will need no urging to investigate this disc. Backhaus is now past seventy, but obviously he must have access to the fountain sought by Ponce de Leon. His attack, the crispness of his articulation, the unfaltering rhythm, the unfailing vigor — all these belong to a young man.

Gieseking also recorded much of this material, and very beautifully too, but he did not have the peculiar command and authority (not to mention the technical competence) that Backhaus brings to the music. Gieseking, of course, was more of a colorist. Backhaus' massive style does not lend itself to coloristic music, but it is wonderfully suited to Brahms. He plays this composer with a virile directness, and the frequently awkward writing seems to lie perfectly in his hand. And Backhaus can get the lyric quality without parading any sentimentalism. H.C.S.

BRAHMS: *Songs (6)* — See Schumann: *Dichterliebe, Op. 48.*

BRITTEN: *The Prince of the Pagodas*

Orchestra of the Royal Opera House, Covent Garden, Benjamin Britten, cond.
LONDON LL 1690/1. Two 12-in. $7.98.

The Prince of the Pagodas, Britten's first score composed expressly for a ballet, was produced at Covent Garden on January 1 of this year. One gathers from Donald Mitchell's notes that it was as gaudy and childish a presentation as that famous extravaganza of our (or, at least, my) childhood, *Chu Chin Chow*. The score takes its form from the complex involutions of the plot and is undoubtedly more effective in the theater than it is on records. It goes on and on and on and on (the ballet was a full-evening affair) in a tuneful, ingratiating, exotically colored fashion, is instantly pleasing at every point, but leaves one without the faintest desire to hear any of it again. Recording is magnificent, and the performance is presumably the last word. A.F.

BRITTEN: *Young Person's Guide to the Orchestra, Op. 34* — See Prokofiev: *Peter and the Wolf.*

DVORAK: *Concerto for Violin and Orchestra, in A minor, Op. 53*
†Glazunov: *Concerto for Violin and Orchestra, in A minor, Op. 82*

Nathan Milstein, violin; Pittsburgh Symphony Orchestra, William Steinberg, cond.
CAPITOL P 8382. 12-in. $3.98.

No modern version of the Dvořák concerto approaches this. Oistrakh's, taken from Russian-made tapes, was a fine performance but somewhat deficient in sound. The recent Gimpel disc issued by Vox has some good points, but Gimpel as an executant is scarcely in Milstein's class. Neither is Martzy; and when her Decca-DGG recording is directly compared with Milstein's, her approach sounds overdeliberate. The extraordinarily incisive virtuoso here plays the Dvořák with a degree of violinistic control that is absolutely fantastic. Indeed, some might accuse him of slickness, a quality emphasized by the recording, which places the violinist way to the fore. So prominent is the solo part that it blots out important countermelodies in the orchestra, and makes the violin sound overbrilliant. Nevertheless this is the playing of an imperturbable master.

As for the Glazunov, there are surprisingly few LPs of this popular work, the only important ones being those of Oistrakh, with the same coupling as this Capitol disc, and of Rabin, who backs the Glazunov with the Paganini D major Concerto. The new Milstein version has a sharper and more realistic sound than that accorded Oistrakh, and while Rabin's recording is fine and his performance technically spectacular, Milstein's jaunty, impeccable playing and stylistic resource make his version preferable. H.C.S.

ELGAR: *Variations on an Original Theme, Op. 36 ("Enigma")*
†Vaughan Williams: *Fantasia on a theme by Tallis*

Pittsburgh Symphony Orchestra, William Steinberg, cond.
CAPITOL P 8383. 12-in. $3.98.

Several specialists have undertaken the *Enigma* on LP — Barbirolli, Beecham, Sargent, and Toscanini. Steinberg's new version ranks with any. It is a rather careful performance, but it has sensitivity while avoiding sentimentality. The solo playing of the various first-desk men is at all times skillful, the choirs well balanced. The *Enigma* is not an easy set of variations to conduct and Steinberg's firm control is mighty impressive. He also does all that is required in the famous Vaughan Williams fantasia, maintaining the long-phrased lines and achieving a golden sonority without forcing the strings. Brilliant recorded sound. H.C.S.

FRANCK: *Symphony in D minor*

Boston Symphony Orchestra, Charles Munch, cond.
RCA VICTOR LM 2131. 12-in. $3.98.

Munch's earlier recording of this symphony, for London with the Paris Conservatory Orchestra, earned a relatively low rating among the numerous disc versions, mainly because he pushed the tempos so that he almost overlapped phrase ends. He got through the symphony in such short order, in fact, that London was able to squeeze the *Variations symphoniques* onto the second side of the record. There is no such extra bonus on the new disc, yet the conductor is still in a hurry through much of the score. Here, however, he is more careful about phrasing. His is a fresh, wide-awake interpretation, though at some of the exciting climactic points he occasionally relaxes the reins on the brasses and timpani, with a resultant imbalance of choirs. His intentions have been well mirrored in RCA Victor's recording. P.A.

GABRIELI, GIOVANNI: *Symphoniae Sacrae*

New York Brass Ensemble, Samuel Baron, cond.
PERIOD SPL 734. 12-in. $4.98.

These eight instrumental works from a collection of vocal and instrumental pieces by Giovanni Gabrieli published in 1597 are played here by a group of from eight to twelve trumpets and trombones, and they make a splendidly stirring sound. Any one of these *canzoni* (Nos. 1, 2, 5, 7, 8, 10, 13, and 14 of the Benvenuti edition) would make a magnificent opening for a program of recorded music. The performances are very fine, the only weak spot being the relative inaudibility of the bass in the third choir of Nos. 13 and 14. Gabrieli did not indicate any specific instrumentation for these pieces (except to call for a *cornetto* in the top voice of No. 10), but to judge from other pieces in the same collection for which he did specify the instruments, he seems to have had in mind *cornetti* and trombones. Now *cornetti*, as anyone can testify who has heard them in the Archive recording of Monteverdi's *Sonata sopra "Sancta Maria,"* sound quite different from trumpets; the soprano of the family sounds rather like an E flat clarinet. But as long as one doesn't take this recording as a faithful representation of the sounds heard in St. Mark's at Venice 360 years ago, there is no reason why one shouldn't enjoy it thoroughly. N.B.

GLAZUNOV: *Concerto for Violin and Orchestra, in A minor, Op. 82* — See Dvořák: *Concerto for Violin and Orchestra, in A minor, Op. 53.*

GLUCK: *Alceste*

Kirsten Flagstad (s), Alceste; Marion Lowe (s), Ismene; Joan Clark (s), Eumelus; Rosemary Thayer (s), Aspasia; Raoul Jobin (t), Admetus; Alexander Young (t), Evander; Thomas Hemsley (b), High Priest, Apollo, Infernal Deity; James Atkins (b), Herald, Oracle. The Geraint Jones Orchestra and Singers, Geraint Jones, cond.
LONDON XLLA 49. Four 12-in. $19.92.

Gluck's *Alceste* is based on the drastically simplified version by Raniero Calzabigi of Euripides' classic drama. Here Admetus, King of Thessaly, is at the point of death when the Oracle of Apollo lets it be known that the voluntary sacrifice of another life can save that of the king. Alceste, the Queen, prepares to die in her husband's stead, but at the last moment the appearance of Apollo himself, *ex machina*, restores Alceste to her husband and her country.

Geraint Jones has chosen to record the edition Gluck wrote first in Italian for Vienna in 1767, transposing the male soprano part of Admetus down an octave and giving it to a tenor. The choice between this and the composer's later Paris reworking is not easy. The Paris *Alceste* is deeply enriched and matured, but unfortunately, one of its most crucial scenes is the work of François-Joseph Gossec, a woefully inept composer. In any case, even in its earlier form *Alceste* is a powerful and beautiful opera, most so in its choruses, and a good performance of it is always an impressive experience.

This performance is for the most part a good one, though the work is treated in what I would call an oratorio style — a common mistake in modern Gluck interpretation. The misunderstanding here is limited mainly to the recitatives, which are taken very slowly and declaimed without any dramatic emphasis. The tempos for the concerted pieces are good, and the phrasing of the chorus is plastic and strong.

Flagstad's voice is rich, steady, and produced with remarkable ease. Her style I like much less, and I find that the simplicity and warmth that distinguished her Alceste at the Metropolitan in 1952 have become slightly contaminated with the sanctimoniousness of the British oratorio singer. Raoul Jobin's manner is rather rough, to say nothing of the voice itself, but I must say that I found his vigorous approach refreshing after an hour of Flagstad's unrelieved placidity. The finest and most sensitive singing in the whole opera

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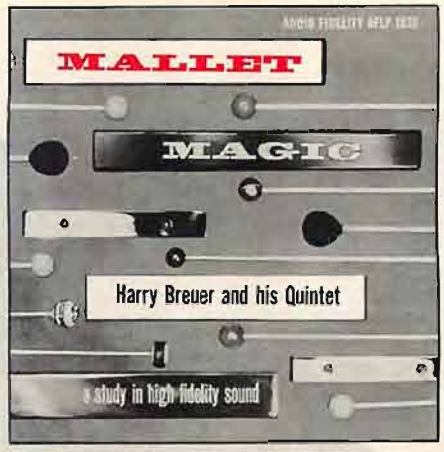

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The Five Beethoven Concertos by Rubinstein and Krips

THE THIRD complete edition of the five canonical Beethoven piano concertos (the other complete albums being those of Schnabel and Kempff) is the first to depart from the interpretative tradition of Central European pianists. The pervading outlook here is romanticism in the grand manner as found in the vintage playing of Artur Rubinstein, who characteristically scoffed at the approach of septuagenarian status by recording all of the five in the space of ten days last December.

Beethoven's interest in the solo instrument with orchestral accompaniment grew out of his public appearances as a virtuoso playing his own music. The fifteen-year span between the earliest of these concertos and the *Emperor* of 1809 takes us from the composer of twenty-three, freshly transplanted from Bonn to Vienna, to the matured genius of thirty-eight with *Fidelio*, the *Rasumovsky* quartets, and six symphonies set like mileposts behind him. Yet he explored the concerto form before writing the earliest of the works he later consented to publish — the B flat concerto we know as No. 2. A concerto from 1784, reconstructed from a set of instrumental parts, has even been issued in three recordings.

It was 1935 before the canonical five were available as seen by one pianist. Etched in wax in what Schnabel called "the torture chamber" of Abbey Road, they remain in RCA Victor LCT 6700, a unique document of the most distinguished Beethoven specialist of the century. In the following decade and a half he made a number of attempts to rerecord these works, but increasing difficulties with technical problems, plus the hazards of engineering and uncongenial accompaniments, never produced results that could overshadow these performances with London orchestras under Malcolm Sargent.

Before the war Schnabel's closest rival on discs was Walter Gieseking, whose performances of Nos. 1, 4, and 5 on Columbia 78s were replaced after 1948 with new longplay versions for the same company. Recent years have brought other editions in longplay format — Wilhelm Kempff for Decca with Paul van Kempen and the Berlin Philharmonic, Rudolf Serkin with Eugene Ormandy and the Philadelphians for Columbia (available only on single discs), and Friedrich Wührer with Walther Davisson and the Pro Musica Orchestra of Stuttgart in Nos. 1-3, 5 for Vox and No. 4 for Remington. Wilhelm Backhaus and Paul Badura-Skoda each offer nearly complete editions, lacking Nos. 1 and 3 respectively.

Rubinstein has recorded two of these three works before: the third in an unflattering transcription of a Toscanini broadcast; the fourth with Sir Thomas Beecham and his RPO, a prematurely extinguished glow in the final days of 78-rpm recording. For many these new discs, especially those of Nos. 1 and 2, will therefore present a familiar artist in a hitherto unfamiliar role.

Sonically these are the best recordings to be had. The monaural discs are exciting enough, the forthcoming tapes ought to be even more so. (Simply playing the monaural recording through my stereo speaker system produced thrilling realism.) A product of the Manhattan Center, here billed as RCA Victor's New York studios, there is a richness in the low frequency registration, a sense of fullness unmarred by booming resonances, that combines with bright and agreeably balanced highs to produce intoxicating sound with clean detail. Certainly the engineers were in top form.

Hardly less can be said for the artists. This is the finest Beethoven I have heard from Rubinstein. That many respond to his interpretation of the composer is well documented by the box-office and record sales, and this time public acceptance ought to be stronger than ever before. There is no doubt that these are highly effective performances, well conceived in terms of the tonal architecture of the scores, sensitive and musicianly in their realization. I have played my copy of the set several times and matched it with other versions of these works; consistently it has held up under such comparison.

Naturally those who find in Schnabel, or Serkin, or Kempff the fulfillment of their idea of Beethoven may dissent from Rubinstein's statements of these scores. Admittedly they are different from those of a German pianist, but the difference does not, I find, carry with it any falsification. Those who know Schnabel's slow tempo for the Largo of No. 3 — called by Tovey "the most highly developed slow movement in all Beethoven's concertos" — will find the faster pace and romantic bloom of Rubinstein's version less effective, but the beauty and content of the music are truthfully conveyed; Beethoven has not been emasculated and perfumed. In the final movement Rubinstein's tempo is slower than Schnabel's and his results, if anything, more pleasurable.

Rubinstein has a greater sense of metrical freedom than pianists of German training, and he does not shape his phrases or shorter groups of notes into the firm plastic units they mold. His emphasis is on movement and freedom for expressive variation, theirs on solidity and force of utterance. This is best seen in the Concerto No. 2, where Rubinstein's playing in the slow movement contains phrases more likely to recall Chopin than the youthful Beethoven influenced by Mozart. Here Schnabel's simple classicism may be preferable, but in the rondo finale Rubinstein's bubbling animation is surely persuasive.

This is about the way it goes. There are few things in these discs to which I emphatically deny assent — one of them is Krips's interpolation of a ritardando into the first twenty-three bars of No. 3 — some I prefer done in other ways, many I forthrightly enjoy. Nos. 4 and 5 are likely to be the most successful as single records and probably must be regarded as the most satisfying over-all performances of the five. The slow movement of the fourth subdues its furies with the most sublime piano tone, the fifth surges with energy and the rich coloring of a true bravura style.

It was Schnabel's own dictum that these works are "so total and universal" that no one statement, however fine, can exhaust them. Rubinstein's edition, therefore, cannot be other than welcome. The product of collaboration with an able conductor and a splendid orchestra, it is the noble effort of a realist's mind and a romanticist's heart.

ROBERT CHARLES MARSH

BEETHOVEN: *Concertos for Piano and Orchestra: No. 1, in C, Op. 15; No. 2, in B flat, Op. 19; No. 3, in C minor, Op. 37; No. 4, in G, Op. 58; No. 5, in E flat, Op. 73 ("Emperor")*

Artur Rubinstein, piano; Symphony of the Air, Josef Krips, cond.
RCA VICTOR LM 6702. Five 12-in. $15.92 (or $3.98 each).

Continued from page 86

is done by Alexander Young in the role of Evander, the friend of King Admetus. Summary: a masterpiece, in part masterfully performed. C.M.S.

GRIEG: *Haugtussa — Song Cycle, Op. 67*
†Sinding: *Songs (4): Leit etter livet og liv det!, Op. 55, No. 5; Sylvelin, Op. 55, No. 1; Der skreg en fugl, Op. 18, No. 5; Den Jomfru gik i ValmuVang, Op. 50, No. 5*

Kirsten Flagstad, soprano; Edwin McArthur, piano.
LONDON LL 1669. 12-in. $3.98.

Haugtussa is Grieg's only real song cycle. Inspired by a book of Arne Garborg, it tells, in the course of eight songs, the story of a little maid who watches over her flocks, has a tryst with her lover and, as in all good song cycles, is ultimately jilted. The first six songs are mostly gay, the last two despairing. The poems are in a Norwegian dialect, and the composer has preserved the folk idiom in his charming musical settings. As far as can be ascertained, Kirsten Flagstad is the only singer ever to commit this cycle to discs. When she first recorded it for RCA Victor some years ago her voice was more youthful; those who still own those old 78-rpm discs may prefer them to this newer one. Yet the singer's voice has not aged too greatly to prevent her from interpreting this lovely music with freshness, conviction, and surprising control.

For those who know Christian Sinding (1856–1941) only for his ubiquitous *Rustle of Spring*, the four appended songs on this disc will come as a revelation. They contain some fine vocal writing and some charming music, entirely fitting as a companion to the Grieg cycle.

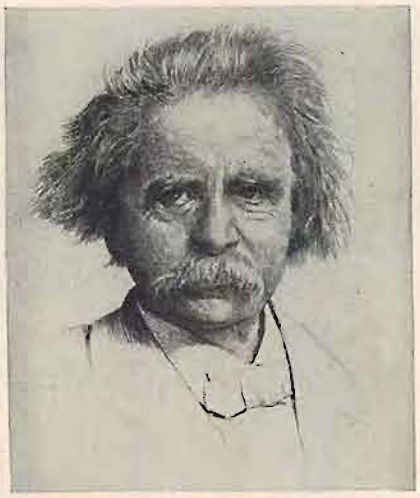
London, which has thoughtfully included all the Norwegian texts with English translations, has also provided resonant and convincing reproduction. P.A.

GRIEG: *Lyric Pieces (32)*

Walter Gieseking, piano.
ANGEL 35450/51. Two 12-in. $4.98 (or $3.48) each.

Among the finest of Grieg's miniatures are his sixty-six *Lyric Pieces*, composed in ten sets or "books." Covering a span of thirty-four years, they encompass a variety of styles. Most of them are in a slow, relatively contemplative mood, yet in each set is to be found one or two works of a livelier nature. Included among them are such perennial favorites as *Butterfly, Erotik, To Spring*, and *Wedding Day at Troldhaugen*, as well as the four pieces Grieg later orchestrated as the *Lyric Suite*.

In one of the last recording sessions before his death, Gieseking recorded thirty-two of the *Lyric Pieces*, with excerpts from all ten books. On the first record are Op. 12, Nos. 2 and 7; Op. 38, Nos. 1 and 3; Op. 43, Nos. 1-6; Op. 47, Nos. 2 and 3, and Op. 54, Nos. 1, 3, 4 and 6, while the second disc contains Op. 57, No. 6; Op. 62, Nos. 3-6; Op. 65, Nos. 1, 2 and 6; Op. 68, Nos. 2, 3 and 5, and Op. 71, Nos. 2, 3, 4 and 7. Models of clarity and tonal enunciation, the slow pieces are played



Grieg by Beecham yields excitement.

also with exceptional thoughtfulness and insight and the faster ones with the feathery lightness that only Gieseking could conjure from the piano. Further, these beautiful performances have been favored with finely molded sound. P.A.

GRIEG: *Peer Gynt: Incidental Music*

Wedding March; Ingrid's Lament; In the Hall of the Mountain King; Morning; Ase's Death; First Arabian Dance; Solveig's Song; Anitra's Dance; Return of Peer Gynt; Solveig's Lullaby.

Ilse Hollweg, soprano; Beecham Choral Society; Royal Philharmonic Orchestra, Sir Thomas Beecham, cond.
ANGEL 35445. 12-in. $4.98 (or $3.48).

We still stand in need (if not dire need) of a complete *Peer Gynt*. Mercury issued, for a time, an Oslo Philharmonic recording which approximated that description, but it has mysteriously disappeared. The present Angel release makes a rather timid compromise between the fifteen unfamiliar numbers of the incidental music and the eight pieces which comprise the suites. Beecham's selections are surprisingly unadventurous, since he chooses to play all eight of the well-known bits (with a difference which I'll detail in a minute) and only two of the mute, inglorious ones — the not totally unperformed *Norwegian Wedding Procession* from Act I (which Grieg allowed Johan Halvorsen to orchestrate) and Solveig's heartbroken little *Lullaby*, which closes the drama.

But the remaining numbers contain their surprises, since the conductor has gone, for some of them, not to the suites but to the original score. *In the Hall of the Mountain King*, for instance, takes on surprisingly new dimensions when the original two-part chorus is returned to it; if it doesn't sound precisely barbaric, it at least passes for something less inconsequent than puckish salon music. The *Arabian Dance* too is heard with a chorus, this time of sopranos and altos, and again to very good effect. *Solveig's Song* is actually a song (as those who remember the wonderful Elizabeth Schumann recording of it will not be surprised to hear), sung very prettily by Ilse Hollweg, who also sings the final *Lullaby*. One would like to have heard the original Norwegian of Ibsen in these vocal and choral sections, or, that proving too rich and strange, English. What one does hear is a pretty dreadful German translation.

Beecham's reading is stunning. Anitra never danced more enticingly nor has Ase died more pathetically. And every aspiring young conductor ought to listen and listen again to the miraculous duet between the bassoons and the low strings at the opening of the *Mountain King* section. The recording is fine, but side two of my copy contains two or three disturbing flaws, despite cellophane, jacket, and waistcoat. D.J.

HAYDN: *Symphony No. 45, in F sharp minor ("Farewell"); Symphony No. 82, in C ("The Bear")*

Southwest German Radio Orchestra, Rolf Reinhardt, cond.
VOX PL 10340. 12-in. $4.98.

Symphony No. 45, in F sharp minor ("Farewell"); Symphony No. 55, in E flat ("Schoolmaster")

Aldeburgh Festival Orchestra, Benjamin Britten, cond.
LONDON LL 1640. 12-in. $3.98.

Reinhardt's *Farewell* is the best currently available, a little too bluntly in the *echt Deutsch* tradition, but forceful and with a firm singing line that loses none of its compelling qualities when it thins out to two violins at the end.

The Britten record, a document from his home-town music festival on the Suffolk coast, was made in performance in 1956. It opens with a superfluous and irritating burst of applause, ends in the same manner, and documents a variety of audience noises, including a croupy whoop that rings out frequently through the slow movement of No. 45. Apparently the players blew out candles as they took their leave — a realistic "effect" that sounds revoltingly cute as it comes off a record. Moreover the performance lacks the vitality of Reinhardt's.

Both of the couplings restore to the catalogue works that have been deleted for a little more than a year. This is the second *Schoolmaster* and the third *Bear* to appear. Both have the marks of improvement over their predecessors and leave room for even better versions which time may eventually provide. R.C.M.

HONEGGER: *Le Roi David*
†Stravinsky: *L'Histoire du soldat: Suite*

Suzanne Danco, soprano; Marie-Lise de Montmollin, mezzo; Pauline Martin, mezzo; Michael Hamel, tenor; Stephane Audel, narrator; Choeur des Jeunes de l'Eglise Nationale Vaudoise; Orchestre de la Suisse Romande, Ernest Ansermet, cond.
LONDON XLL 1651-2. Two 12-in. $9.96.

"C'est le premier matin du monde," sing the choristers in Stravinsky's *Perséphone*, but the sentiment is better suited to the atmosphere of Honegger's *Roi David*. This music is full of violence, movement, color, foreboding, and glory, yet withal it is the most innocent music of modern times. Taken from the incidental music to a play that was written in a feverish hurry, slapped together with a thread of narration

Continued on page 96

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to form an oratorio, it is badly shaped and at times uninspired; but at its heart is a melodious purity that will not be denied, and its final chorus is Honegger's masterpiece.

So far as performance is concerned, all that really counts in *Le Roi David* is the ensemble of chorus and orchestra, with the exception of the narrator, who has to be good and in this release is very good. The chorus is tremendous, thanks to its youth and to Ansermet's splendid direction, and the orchestra leaves nothing to be desired. The recording is first rate, and the production is completed with the full text, in French and English.

The fourth side is filled out with a good performance of the suite from Stravinsky's *Histoire du soldat*. A.F.

LISZT: *Concertos for Piano and Orchestra: No. 1, in E flat; No. 2, in A*

Julius Katchen, piano; London Philharmonic Orchestra, Ataulfo Argenta, cond. LONDON LL 1683. 12-in. $3.98.

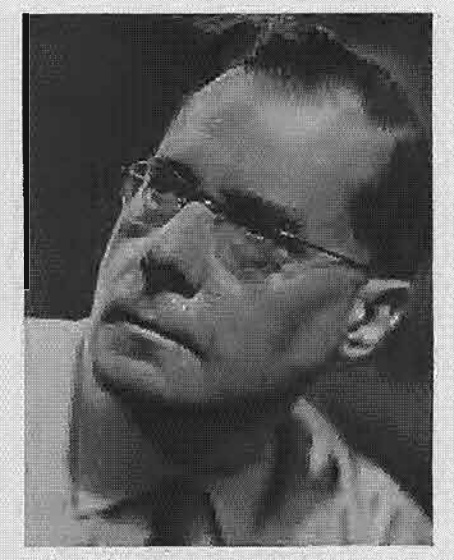
Anybody who craves both Liszt concertos on one disc should be very pleased with Katchen's new effort. No previous pianist attempting this coupling has brought to the task equivalent skill and bravura, nor has any enjoyed comparable recorded sound. Katchen revels in the bravura aspects of both concertos. There may be more to the music, as the great old Petri recording of No. 2 (never transferred to LP) has demonstrated, but there is something very engaging about Katchen's young derring-do, his willingness to push boldly ahead and slam out octaves. Although several times there is a breathless feeling (and at the end of the First Concerto piano and orchestra engage in a mad sprint that is just a little ridiculous), these are really exciting performances representing Katchen at his very best.

Argenta provides expert accompaniment. The old complaint, however, is present: why must engineers, in present-day concerto recordings, bring the solo instrument so much to the fore that it blots out important solo bits in the orchestra? H.C.S.

MENDELSSOHN: *Quartets for Strings: No. 4, in E minor, Op. 44, No. 2; No. 6, in F minor, Op. 80*

Manoliu String Quartet.
EPIC LC 3386. 12-in. $3.98.

Apparently the F minor Quartet is receiving its record première, and it is strange that so powerful a work should have been entirely ignored. I have never heard a concert-hall performance, either. It was composed in 1847, the year of Mendelssohn's death and is, for him, moody and passionate. Once in a while his so-called elfin quality breaks through, but for the most part the writing is serious, with an insistence on a kind of tremolo underpinning that suggests the Schubert of the G major Quartet. The E minor is much better-known, though this quartet too, like most of Mendelssohn's chamber music these days, does not get many hearings. Both works receive strong rather than lyric performances. The Manoliu Quartet does not demonstrate notably suave tone, and its sound more often than not is apt to be edgy. Its ensemble, however, is good, and



Böhm's Figaro *overcomes a clumsy start.*

one can be certain that the music is not misrepresented. H.C.S.

MOZART: *Le Nozze di Figaro*

Sena Jurinac (s), Countess Almaviva; Rita Streich (s), Susanna; Christa Ludwig (s), Cherubino; Rosl Schwaiger (s), Barbarina; Ira Malaniuk (ms), Marcellina; Erich Majkut (t), Don Basilio; Murray Dickie (t), Don Curzio; Paul Schöffler (b), Count Almaviva; Walter Berry (b), Figaro; Oskar Czerwenka (bs), Dr. Bartolo; Karl Dönch (bs), Antonio. Vienna State Opera Choir; Vienna Symphony Orchestra (with Karl Pilss, harpsichord), Karl Böhm, cond. EPIC 4SC 6022. Three 12-in. $14.94.

This *Figaro*, made in April 1956, appears now as a belated contribution to the Mozart Bicentennial. It is still welcome. In spite of its important weaknesses, its strengths make this recording one of the most successful Mozart opera albums.

To dispose first of the deficiencies, the most continuous annoyance is a linguistic one. Most of the singers are German-speaking and their Italian is heavily accented: there is the usual terrible plague of "*kvesto*" and "*kvanto*" and Cherubino's occupation is not "*paggio*" but "*paccio*." Czerwenka and Majkut offend most in this respect, Streich and Ludwig are a little better, Schöffler is surprisingly good, Berry and Jurinac do best of all.

Another defect throughout is a certain lack of theatrical verity. Voices that should come from a distance do not always do so, for instance the Count's "*Ecco qui la miu Susanna*" in the last act, and we are not allowed to hear any of the ringing bells, knocks, and slaps. Many such effects are of vital dramatic necessity (e.g. the chair falling over in the closet in Act II), and their absence makes nonsense of the text.

Furthermore Karl Böhm is a conductor whose pictorial and theatrical feelings are less highly developed than his sense of architecture. He lacks the gift of imagining sonorities and phrasings to illuminate and to frame single set pictures. This is the conductor's problem in accompanying arias, and under Böhm "*La vendetta*" lacks pomp, "*Via resti servita*" fails to be catty, "*Non so più*" is not breathless. Almost until the Second Act Finale, *Figaro* is a gallery of portraits, and because of various small failures of imagination, this relatively undramatic section of the opera does not come off completely. Individual sections drag rather, and much of the wit of the whole is unrealized.

The first really fine moment of the performance is the trio "*Susanna, or via sortite*," which is delivered with exciting strength; after it, Böhm never loses his grip again. Böhm's structural sense is of the highest order and, particularly in the two great finales, he achieves extraordinary results; indeed, many passages he interprets more profoundly and powerfully than any conductor I have heard. The most exciting of these are: the episode with the gardener; the pages beginning "*Voitre dunque saran queste carte*" (here, especially, no one else has so clarified for me not only the drama behind the course the modulations take, but also the way the harmonic changes are brought into relief by the subtly changing wood-wind texture!); the controlled crescendo of the Wedding March; the entire Act IV finale, but most moving of all, the seemingly infinitely expanded measures that guide you from the sublime *Andante* to the brilliant *Allegro assai*.

Schöffler leads the cast with a magnificently mature portrayal of the Count as a figure of sinister erotic power, tempered with real elegance. Jurinac is an excellent Countess, and Streich gives great pleasure as Susanna. Berry makes an engaging Figaro though not yet a finished one. Ludwig sings Cherubino's music well, but not so well as to make one forget, among others, Novotna, Danco, and the now promoted Jurinac. The other members of the cast are very good, particularly Dickie and Dönch. The one exception is Malaniuk who inclines toward a wobble and whose slow tongue causes her to drag her entrance in the second finale, playing momentary havoc with Böhm's organically built up tempo.

The booklet contains a long essay by Paumgartner as well as the amusing libretto translation by the late Edward J. Dent. What it does not contain is a list of the cast (the information can be extracted from various portions of the notes, but not conveniently). Further, I fail to understand why Da Ponte's Italian verse is bunched up into paragraphs as though it were prose. And a sorry procession of misprints concludes with one that would have delighted the author of *Psychopathology of Everyday Life*: the Countess' speech of forgiveness concludes, not with "I can't say you nay," but rather with "I can't say you may."

This set makes the customary omission of Basilio's and Marcellina's arias, whereas the versions on London and RCA Victor are complete. Both other editions take four records as opposed to three here, but Epic's greater economy and compression is achieved at the cost of a turnover during the second finale. On the London records, Kleiber conducts tenderly, indeed so tenderly that in spite of many phrases and paragraphs of unforgettable beauty the performance as a whole lacks sparkle. Furthermore, I find that much of the playing by the Vienna Philharmonic in the London recording sounds rough and tired. On the other hand, the great performances of Siepi

and Danco as Figaro and Cherubino are an important consideration.

Of the complete versions, I tend to prefer the one from Glyndebourne on RCA Victor. Bruscantini and Sciutti give somewhat unfinished performances as Figaro and Susanna, but Calabrese and Jurinac are unusually good as the Almavivas. Vittorio Gui conducts with dramatic awareness and with some very special musical insights, notably in his handling of Mozart's own favorite number, the Act III sextet. However, anyone who can continue to live without the two missing arias, and who can become accustomed to the German Italian and to a slightly slack first act, should find great pleasure in the Epic album. For the benefit of persons who want to enter the moral quicksands of balancing financial problems against artistic, I append the information that Epic costs 98 cents less than Victor, and $4.98 less than London. C.M.S.

MOZART: *Quartets for Flute and Strings: in G, K. 285a; in C, K. 285b; in A, K. 298; in D, K. 285*

Herbert Barwahser, flute; members of the Netherlands String Quartet.
EPIC LC 3368. 12-in. $3.98.

All four of Mozart's flute quartets are brought together here for the first time on records; moreover, this seems to be a first recording of K. 285a. Add to this, enjoyable performances by an excellent flutist forming a smooth ensemble with the string trio, and well-balanced recording, and the result is a disc that should find a ready welcome among lovers of chamber music. Three of these works were written on commission and all four composed at times when Mozart would much rather have done more important things. But he was incapable of shoddy work, and not one of these pieces lacks occasional passages that lift the music from skillful routine into the realm of high art. N.B.

MOZART: *Quintets (6) for String Quartet and Viola* (complete)

Budapest String Quartet; Walter Trampler, viola.
COLUMBIA M3L 239 or ML 5191/3. Three 12-in. $11.98 (or $3.98 each).

Five of these quintets have been available on microgroove for some years, as played by the Budapests with one or two changes in personnel and with Milton Katims as visiting violist. Although they were by and large excellent performances, they were transfers from 78s and, while still acceptable, not up to today's standards in sound. In this new set which adds the early Quintet in B flat, K. 174, to the last five, the approach is basically the same as in the old recordings.

What differences there are, are in the direction of greater lyricism and mellowness. Most of the fast movements are taken a shade less quickly here, to their advantage. The difference in interpretation is most apparent in the G minor Quintet. In the old version there was more tension and drama; in the new one there is quiet tragedy, just as deeply moving. As for the rest, there are the usual hallmarks of this fine ensemble — flexibility and precision, attractive tone and good balance, and sound musicianship, as evidenced, for example, in the subtle differentiation between various weights of accent.

The recording is of course far superior to the old, even though the violins are often subjected to the new type of slight distortion that even the finest engineers apparently cannot always get rid of. N.B.

MOZART: *Serenades: No. 13, in G, K. 525 ("Eine kleine Nachtmusik"); No. 6, in D, K. 239 ("Serenata Notturna"); Divertimento in D, K. 251*

Boyd Neel Orchestra, Ltd., Boyd Neel, cond.
UNICORN UNLP 1042. 12-in. $3.98.

The great Thirteenth Serenade, *Eine kleine Nachtmusik*, has a point of similarity to the Beethoven Fifth Symphony. Everyone who *is* anyone (or very nearly) has recorded it, and no one has done so quite satisfactorily. When the performance has been good, the sound hasn't been, and vice versa.

In many ways, I think, this new version by Dr. Boyd Neel and his "Ltd." orchestra (there now are *three* Boyd Neel Orchestras) is the best there is. The estimable medico is eminently able to feel and convey sane, unstrained enjoyment of music like this. (The relaxation may seem excessive momentarily, now and then; there are some imprecisions in the string playing, but I don't think he cared and I know I don't.) Unicorn doesn't say where the taping took place. I suspect Kingsway Hall. Peter Bartók did the mastering. At any rate, the sound reproduction is effortlessly brilliant and lifelike, an invaluable asset to music which must be heard without irrita-

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Beecham Repeats Thirty-Nine and Forty

BEFORE LP, Sir Thomas had recorded ten Mozart symphonies, more than any other conductor. Largely because of these records and a number of Haydn records he was esteemed as a foremost exponent of eighteenth-century music, and surprise has been expressed that he did not replay for microgroove all those works in which he had been found estimable, the present pair of symphonies, for example. He recorded Nos. 39 and 40 in 1939 or 1940, and Columbia transferred them to rather turgid LPs in 1953, apologizing for the sonics by putting ML 4674 in its "Collector's List" of venerabilia. ML 5194 contains new performances by a new orchestra, and above all displays new sonics.

The performances are not materially different from the earlier ones, but the sound is almost embarrassingly superior, and peer of the best that has been allotted to the symphonies. It is this in spite of an intentional and somewhat unnatural projection of the wood winds, practiced no doubt to make them vivid in an unusually deep field of orchestra. Balancing this unbalance are the unusual and gratifying fullness of the horns and the warm substance of the strings, reproduced without stridency at the top and with a dark luster at the bottom.

It is rather surprising not to find the rich sonic substance allied to a performance of the G minor symphony equally strong in its character. The touches of individuality, like the somewhat overworked dying sighs in the Trio, lean to delicacy rather than to determination; and the external movements forego fierceness in favor of steady resolution.

No. 39 is stout in orchestral organization and regular in tempo. The introduction is the most forceful on records, and the deliberation of the ensuing Allegro holds the instrumental detail in glittering suspension, a feature even more prominent in the Andante where the wood winds are larger than life. The square-cut, muscular Menuetto is admirable, and so is the clean shaping of the Finale, unless one insists that it be breathless and impetuous, as I prefer it and Sir Thomas obviously does not.

As a whole, both are obviously capable

Sir Thomas followed in famous footsteps.

performances, one a little fancy, neither a revelation except by the help of sound very effective in both. Comparing the thick reproduction of the 1953 LP with the new thoroughness of varied, unmistakable timbres in 1957's edition, even the most inveterate defamer of sonics per se must recognize in the difference a difference almost exclusively sonic, in which the weaker obscures and defaces the conductor's intentions and the stronger illuminates them, even to the point of glare. Without this advertisement it is unlikely that listeners would realize how closely the conductor had followed his own footsteps. Played consecutively, one record depresses and the other enlivens, wherein we find a rueful lesson, that in records art is at the mercy of science; and whereas the first may be complete the second never is. So we must go on buying. C. G. BURKE

MOZART: *Symphonies: No. 39, in E flat, K. 543; No. 40, in G minor, K. 550*

Royal Philharmonic Orchestra, Sir Thomas Beecham, cond.
COLUMBIA ML 5194. 12-in. $3.98.

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tion if it is to take effect as the composer intended.

The *Serenata Notturna*, for a string quartet accompanied by a second string section with timpani, has been performed for Vanguard by the Solisti di Zagreb with more finesse than the Neel string players show here, and in reproduced sound comparably beautiful. However, if the Yugoslavs make the BNO sound rough, the BNO in turn makes the Yugoslavs sound overrefined. In a pinch I think I should choose the BNO, if only because their drummer has more fun.

The Divertimento, a piece of pleasure no one else could have written, has been recorded also, a little less broadly, for London by Münchinger and his Stuttgart stalwarts. The BNO has the better sound, but (as Nathan Broder points out to me) Boyd Neel loses some effect by not playing the theme between each pair of variations in the second minuet, as it is marked to be played. In view of the other merits of the disc, I think this can be pardoned. J.M.C.

MOZART: *Symphonies: No. 38, in D, K. 504 ("Prague"); No. 39, in E flat, K. 543*

Philharmonia Orchestra, Otto Klemperer, cond.
ANGEL 35408. 12-in. $4.98 (or $3.48).

Fine performances, beautifully recorded. The strings play with a warm, live tone. The wood winds perform cleanly and in tune; moreover, they are plainly audible when they should be. This is especially important in the Allegro of the *Prague*, for example, where the first theme-group is divided up among various instruments. Klemperer keeps the texture here, as well as everywhere else, perfectly transparent. He shapes the curving melodies of the Andante with loving care, as though Mozart had painted there the portrait of a beautiful woman — say the Countess in *Figaro*. The opening of the Presto may seem a bit hurried at first, but it very soon settles down to a convincing tempo. Similarly impressive is the performance of the E flat Symphony. Klemperer does not minimize the dramatic passages in that work, but he also gives the lyric sections their full value. N.B.

MUSSORGSKY: *Pictures from an exhibition*

Philharmonia Orchestra, Herbert von Karajan, cond.
ANGEL 35430. 12-in. $4.98 (or $3.48).

Sonically this is perhaps the best *Pictures* available. Angel spreads it over two sides, unlike the majority of competing companies, and what one loses in musical bonuses one gains in stunning sound. At times, in fact, the sound is almost too good. There are few of the rough edges, the casual imperfections that one seems to expect in a concert hall, no matter how acoustically perfect, and of which one gets plenty in such versions as those of Kubelik, Ormandy, and Markevitch. For instance, the famous tuba solo in the *Bydlo* section sounds like no tuba that was ever heard among the race of men. It sings like a Platonic idea of a tuba. So do the two unison trumpets impersonating the fast, hypocritical jabber of poor Schmuyle in the sixth picture, and the flutes and oboes impersonating the dancing chickens in the fifth.

But if there is something improbable about the engineering, there is nothing at all improbable about Von Karajan's earthy and splendid reading: the great gate at Kiev stands forth with an all but palpably massive presence, and one can almost make out the nasty things that the women in the Limoges market are saying to one another. My only reservation is that the *Catacombs* portion is taken a little too deliberately; here the very transparency of the recorded sound militates against the hollow gloom of this section. The eight-part brass choir which Ravel calls for ought to be vague and veiled (as it is in Toscanini's perfect evocation of this music); Von Karajan, subjected to Angelic sunlight, can only be stately and slow.

Pictures from an exhibition has certainly not been neglected by the great orchestras and conductors, and there are a number of versions which challenge comparison with the present one — Cantelli's, for instance, which is my own special favorite. But it is unlikely that the collector, once having chosen Von Karajan and the Philharmonia, will ever regret his choice. D.J.

PROKOFIEV: *Peter and the Wolf*
†Britten: *Young Person's Guide to the Orchestra, Op. 34*

Cyril Ritchard, narrator (in the Prokofiev); Philadelphia Orchestra, Eugene Ormandy, cond.
COLUMBIA ML 5183. 12-in. $3.98.

Columbia has obviously gone to a great deal of trouble to secure the best possible recording for these two classic introductions to the instruments of the orchestra, and the results are as close to perfection as modern sound techniques can make them. The interpretations are excellent, too, with a minimum of hokum on the part of the narrator, who is used only in *Peter and the Wolf*; the superfluous narration in the score of the Britten piece has wisely been suppressed. The record of choice for both compositions. A.F.

PUCCINI: *La Bohème*

Maria Meneghini Callas (s), Mimì; Anna Moffo (s), Musetta; Giuseppe di Stefano (t), Rodolfo; Franco Ricciardi (t), Parpignol; Rolando Panerai (b), Marcello; Manuel Spatafora (b), Schaunard; Nicola Zaccaria (bs), Colline; Carlo Badioli (bs), Benoit, Alcindoro; Carlo Forti (bs), Sergeant; Eraldo Coda (bs), Customs Officer. Chorus and Orchestra of Teatro alla Scala (Milan), Norberto Mola, chorus master, Antonino Votto, cond.
ANGEL 3560 B/L. Two 12-in. $10.96 (or $7.96).

The richness of detail with which Callas invests her interpretation of Mimì is astounding, and time after time, while listening to this new recording, I was excited by the demonstration of such dramatic intelligence. Yet for all that, I am not sure that Mimì gains from being treated with the attention and penetration appropriate for a role like the *Rosenkavalier* Marschallin. The small touches, beautifully thought out and handsomely executed as they are, are simply too many for Puccini's slight music to sustain.

Perhaps Callas' characterization might stand better in a performance shaped by a more dynamic conductor, one who is less an accompanist and more a leader. Although the orchestral playing as such is beautiful, Votto seems to have no long-range vision of the opera: I had the impression that not only were the tempos often slow, but that for pages at a time there was no tempo at all. It is up to the "concerting Maestro," as they call the opera conductor in Italy, to co-ordinate all the details into a fully formed whole; instead, Votto becomes overwhelmed by them, and so, in the end, does Puccini.

Di Stefano is a satisfactory Rodolfo, though hardly a poetic one. Panerai, Zaccaria, and the Pennsylvania-born Signorina Moffo sing not only better than any other singers I have heard in these important roles, but almost better than any I can imagine. Except that the chorus remains a little distant, the sound becomes very good upon considerable reduction of treble. And even by the high standards that Angel has set in such matters, the booklet which accompanies the album is exceptionally well produced, particularly in the choice of pictures.

My own preference in *Bohème* recordings remains with Toscanini, not only for the participation of the conductor of the opera's première in 1896, but also because for me Licia Albanese embodies more touchingly than anyone Puccini's frailer heroines. Of the more modern recordings, I recommend RCA Victor's recent album with its imposing team of Beecham, Bjoerling, and De los Angeles. C.M.S.

REVUELTAS: *Homenajes a García Lorca; Tres sonetos; Planos; Toccata sin fuga; Two Little Serious Pieces*

M-G-M Chamber Orchestra, Carlos Surinach, cond.
M-G-M E 3496. 12-in. $3.98.

Silvestre Revueltas, who died seventeen years ago at the age of forty, was the Charles Ives of Mexico. His music was accorded little attention during his lifetime and is only just beginning to attract an audience. It is based very largely on Mexican musical folkways, although it also has a lyrical and visionary streak in which folk tunes and folk rhythms are abandoned.

The three-movement chamber symphony, *Homenajes a García Lorca*, is perhaps the best thing in this collection. It is also the most obviously folkloric, mingling material of Indian and Hispanic-Mexican cast with great brilliance, vivacity, and spirit. The *Tres sonetos* — dark, eloquent, and very large in their musical gesture — represent the visionary Revueltas at his best. The other pieces in the set rely primarily on the shock value of extreme dissonance and piquant scoring. But the *Homenajes* and the *Sonetos* have something important to say.

The recording is very bright, and the performances sound altogether authoritative. A.F.

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FLAMENCO: *Carmen Amaya Dances. Sabicas, guitarist. DL 9925*

THE MASTERS REVISITED: *Ralph Burns orchestrates Pictures At An Exhbition, Andalucia. DL 8555*

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ROUSSEAU: *Le devin du village*

Janine Micheau (s), Colette; Nicolai Gedda (t), Colin; Michel Roux (b), Soothsayer. Orchestre de Chambre Louis de Froment.
ANGEL 35421/L. 12-in. $5.98 (or $3.48).

That Jean-Jacques Rousseau composed music at all is probably news to the record-buying public. It would be a pleasure to report that he composed it well, but he really did not. Untrained as a musician, Rousseau nevertheless took great interest in music all his life, and thanks to his prestige in other fields he was able to exert influence out of all proportion to his ability. He wrote the musical articles for the Diderot Encyclopedia, he compiled a musical dictionary of his own, and in 1752 he composed the comic opera that is recorded here.

Rousseau was deeply involved in the "War of the Buffoons," a musical quarrel arising from the French public's boredom with the operatic tradition of bastard classical tragedy that had been prevalent since Lully. The musical implications of Rousseau's slogan, "Back to nature," ran wholly counter to the school currently represented by Rameau, and in *Le devin du village* Rousseau attempted to create a realization of his own operatic ideals — drama based on an uncomplicated pastoral subject, and music of simple melodic content.

Few occasions in the history of music offer a more enchanting vision for the imagination than the première of *Le devin* at Fontainebleau on October 18, 1752, with the passionate antimonarchist, carelessly dressed and with a badly combed wig, seated across from Louis XV and Madame de Pompadour. The evening was, despite all, a success, and along with Pergolesi's *La serva padrona*, Rousseau's work was instrumental in bringing about a radical change of direction for French opera.

Le devin received frequent performances until 1830, when someone was moved to throw a powdered peruque on stage in protest. How, even granting the prestige of Rousseau's name, it managed to hold the stage for so many years is a puzzle. The music is primitive not merely because the philosopher of "*Retournons à la nature*" is striving for simplicity; it is so because he was an amateur who could not compose very well. Some of the airs have a certain charm, particularly from the point of view of rhythm, but by and large this is pretty feeble stuff.

The story is that of a shepherd and shepherdess whose love for one another has suffered a temporary decline and who are reunited through the good offices of the local soothsayer. The English libretto supplied with the record is a contemporary translation by Dr. Charles Burney, who delightfully rendered "*devin*" as "cunning-man" and who in general did a fine and stylish job. Janine Micheau sings vivaciously, the two gentlemen perform well though rather limply for my taste, and the De Froment Chamber Orchestra is good, as is the unnamed chorus.
C.M.S.

SCHUMANN: *Dichterliebe, Op. 48*
†Brahms: *Songs (6): Sommerabend, Op. 85, No. 1; Mondenschein, Op. 85, No. 2; Es liebt sich so lieblich, Op. 71, No. 1; Meerfahrt, Op. 96, No. 4; Esschauen die Blumen, Op. 96, No. 3; Der Tod, das ist die kühle Nacht, Op. 96, No. 1.*

Dietrich Fischer-Dieskau, baritone; Joerg Demus, piano.
DECCA DL 9930. 12-in. $5.98.

Dietrich Fischer-Dieskau is one of the finest lieder singers before the public today, and his new disc, with Joerg Demus at the piano, is the best modern recording of Schumann's great song cycle. The world of 78-rpm discs saw at least three superb recordings — those by Gerhard Hüsch, Askel Schiøtz, and Charles Panzéra. The Hüsch has long been unavailable. RCA Victor did have an LP that combined the Schiøtz and Panzéra versions; but it has been withdrawn. Several other LPs are available, but none, for one reason or another, is satisfactory. Here the engineering is first-class and the singer a fine artist. His voice is not the most supple of instruments, but so judiciously is it used that his singing remains an absorbing experience. For the most part it is quiet and sensitive, always relevant to the emotional import of music and texts. When he uses a fortissimo, the impact is impressive; and even in his most pianissimo sections he really *sings*. He is not afraid to use considerable rubato or to take a certain amount of liberty with rhythms and tempos — and always with taste and authority. The Brahms songs are sung with no less mastery.

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A pair of worthies aid Schumann in song.

Demus is more than an accompanist. He is surely one of the best Schumann pianists around, and his labor here is one of love. Finally, the microphone is placed exactly right; and the gentle full intimacy of the sound completes the remarkable distinction of the whole recording.
H.C.S.

SHAPERO: *Serenade, for String Orchestra, in D*

Arthur Winograd String Orchestra, Arthur Winograd, cond.
M-G-M E 3557. 12-in. $3.98.

A charming example of the New Conservatism, 1945 model. At times it sounds like Stravinsky's *Apollon Musagète* with the *right* notes. The performance, supervised by Harold Shapero, is quite fine, and the recording will do.
A.F.

SHOSTAKOVICH: *Symphonies: No. 7, in C, Op. 60 ("Leningrad"); No. 1, in F, Op. 10*

Leningrad Philharmonic Orchestra, Eugene Mravinsky, cond. (in No. 7); State Orchestra of the U.S.S.R., Kiril Kondrashin, cond. (in No. 1).
VANGUARD VRS 6030/1. Two 12-in. $7.96.

It seems a long time since the score of Shostakovich's Seventh Symphony was microfilmed in Kuibyshev and flown to New York to be given its American première under Toscanini. Cultural relations between the United States and Russia reached their peak in those wartime days; the Seventh Symphony was played everywhere that season and the next, but in the fifteen intervening years it has been almost totally forgotten in his country.

To hear it again on these records is to bring back some of the tension and excitement of that distant era. The famous E flat major section of the first movement, wherein a marching theme is repeated some sixteen times without modulation to a relentless drumbeat in the background, can still tighten one's throat, and the symphony as a whole has lost little of its tragic, heroic character. Mravinsky's performance is superb, but the recording has a curiously one-dimensional effect. The leading voice at any given movement sounds full enough, but secondary voices are weak.

The same thing is true of the recording of the First Symphony, which fills out the fourth side. Kondrashin's interpretation of this is remarkably capricious, even coquettish, but perhaps that is the way it is supposed to sound.
A.F.

SINDING: *Songs (4)* — See Grieg: *Haugtussa — Song Cycle, Op. 67.*

STRAUSS, RICHARD: *Concertos for Horn and Orchestra: No. 1, in E flat, Op. 11; No. 2, in E flat*

Dennis Brain, horn; Philharmonia Orchestra, Wolfgang Sawallisch, cond.
ANGEL 35496. 12-in. $4.98 (or $3.48).

Sixty years separate these two horn concertos: the first was written by a boy of eighteen, the second by an old man of seventy-eight. Surely there is no other recording in the catalogue to duplicate so remarkable and so touching an autobiographical fact. And no higher compliment can be paid to this music than to say it is a worthy pendant to the horn concertos of Mozart.

The first concerto is filled with high spirits, a recklessly difficult solo part (written for Papa Strauss), and the sure touch of the incipient master. But one would never divine the Strauss to come from this music; it speaks with the voice of the middle romantics, of Schumann in the first movement and Mendelssohn in the rondo.

On the other hand, the 1942 concerto is very like the other two wind concertos of Strauss's old age, the one for oboe and the double concerto for clarinet and bassoon. All three works are suffused with what I can find no better word for than kindliness, the warm generosity of a man who, having lived life and found it good, pauses a moment on its threshold to tell us so. But without sentimentality. A little laughter, something of the mischievous child

Continued on page 106

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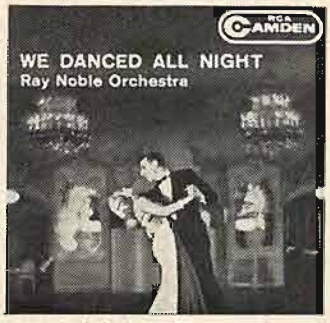

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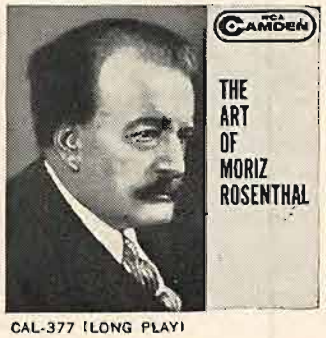

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The Ten-Part Tale of the Lady with No Shadow

BRIEF accounts of Strauss's operas tend to lump everything after *Ariadne*, if not after *Rosenkavalier*, under the general heading of "Old Master Gone to Seed." These later works, judgment has it, are at best pale reflections of former glory, at worst hypertrophic bores. We in outer darkness could up till now only listen, doubt, and hope one day to get to the German and Austrian festivals where, season after season, new productions of the late operas are staged. The recent New York *Arabella* and Angel releases of highlights from that opera and from *Capriccio* have done a good deal to scout the lazy old critical dicta. Now the long-awaited *Frau ohne Schatten* (it was recorded in 1955) makes its appearance and proves once for all that Strauss after fifty was still a glorious master of the most difficult of musical forms.

This is a more ambitious work than *Rosenkavalier*, incorporating the purely human values of that opera with metaphysical and spiritual ones which call for a far more elaborate musical technique. Hofmannsthal saw it as a "kind of continuation of the *Magic Flute*," but it also has striking affinities to *Parsifal*. Mozart and Wagner are, of course, the twin daemons of Strauss's musical personality; he steps clear of them only in the beatific *Four Last Songs*. In *Ariadne* the Mozartean daemon is in the ascendency, but Wagner comes back powerfully in *Die Frau ohne Schatten* (1916). The very theme, that of redemption through love and renunciation, is the *Parsifal* theme: Barak the Dyer partakes strongly of the character of the "pure fool" (with touches of King Mark and Hans Sachs); The Nurse, musically as well as dramatically, is a reincarnation of the unredeemed Kundry. Elements of the *Ring* operas are also discernible: the descent of the Empress and the Nurse to Barak's cottage and the bickering brothers therein are remarkably like the descent of Wotan and Loge into Niebelheim, and the Falcon owes much to the Forest Bird of *Siegfried* (and a little, perhaps, to Schoenberg's *Gurrelieder*). But of the finding of many influences there is no end, and perhaps not much pertinence. The opera is quintessentially Strauss; there is no mistaking a bar of it for anybody else's.

Hofmannsthal took six years to complete the libretto. I should perhaps need six more to reduce it to a brief summary but, letting the symbolism fend for itself, this is something like what happens: The Empress of "the South Eastern Islands" has no shadow because she is not that thing which shadows are made on — a human being; she is the daughter of the Ruler of the Spirits. Her power to retain the form of a woman will end, and, more terrible, her human husband will be changed to stone, if she does not, within a certain period of time, succeed in acquiring a shadow (i.e., the substance as well as the form). And so she descends from her high inhuman plane to earth, hardly of her own volition but led on by her nurse, a creature driven by hatred of all mankind and a fierce loyalty to the fairy-Empress. There the Nurse seduces the bitterly discontented wife of Barak the Dyer into relinquishing her shadow (and consequently her humanity, and thereby her power to bear children). But before this can happen the Empress herself has a revulsion of feeling: Barak's patient suffering, his generosity and love have taught her something of what the human lot means. At the crucial moment (split in this recording, in a deplorable example of bad editing, between the end of side six and the start of side seven) she rejects the shadow and, without knowing it, puts on womanhood. The last act, in which the real gives way totally to the symbolic, presents the transfiguration of the four main characters through love and self-abnegation.

Opera summaries make bloodless corpses out of librettos; and Hofmannsthal's libretto is decidedly alive. Barak's three maimed brothers are pathetic and yet wonderfully funny; his wife, far from being a mere shrew, is the most complex personality in the opera; the Nurse is as frighteningly real as Elektra. Barak himself belongs, with the Marschallin, among Strauss's greatest musical portraits. Heart-rendingly unable to comprehend his wife, or even to recognize the love she bears for him (*"Ich höre und weiss nicht, was eines redet"*), his whole soul yearns for that which might be his for the asking. The Emperor alone remains a character out of fairyland, or rather out of symbol making; one feels that if he were turned to stone after all, the transformation would pass unnoticed.

London's recording of this gigantic work (playing time: about three hours and forty minutes) is more generously weighted with plus than minus values. It is a pleasure to find that there is only one major cut: a brief trio in the third act. The orchestra is good, though one feels a certain slackness in the leadership of Karl Böhm. Even the vocal score is packed with details which do not come through, or which come through at the expense of other details. The wood winds particularly suffer a sad eclipse. Strauss is sometimes at fault here, undoubtedly, but a great conductor — a Thomas Beecham — would bring everything right.

Leonie Rysanek

The singers range from magnificent (Schöffler) to barely adequate (Höngen). Elizabeth Höngen has been singing the role of the Nurse for about twenty years and she understands it thoroughly; besides, she makes a specialty of nasty females (Lady Macbeth, Klytemnestra) and she's an actress of considerable attainments. But, to be brief, what remains of her voice has gone into the sere and tremulous leaf. Like Christel Goltz, she has no exaggerated respect for note values, perhaps feeling that in the great Straussian complex quavers and semiquavers need not be taken too literally so long as one doesn't get left behind by the orchestra. Goltz's role calls for a cruel *tessitura*, from low F to high C. She has all the notes, although, unfortunately, not always when she wants them; her worst shortcomings are, as they have been in the past, shrillness and inexactness of pitch. In her big moments, however, she sings ravishingly (e.g., in the third act aria, *"Barak, mein Mann"*). Hans Hopf brings little besides a naturally beautiful tenor-baritone voice to the dramatically (but not musically) thankless role of the Emperor.

As the latter's wife, Leonie Rysanek could not be better. The quality of her singing resembles that of the Schwarzkopf of two or three years ago: plaintive and pure and alive to every nuance of the text. But it is Paul Schöffler who carries away the laurels. His rendering of Barak is a joy to the spirit as well as to the ear. Even his slightest phrases reflect the glowing humanity with which Strauss imbued the role.

As to the minor roles, they are, in general, capably performed. The handsome album is furnished with a well-meaning libretto which, however, is too cluttered with leitmotiv notations, and squiggly lines. The recorded sound is not of uniform quality, the first few sides being distinctly less resonant than the rest. It gets bigger and more boisterous as it goes on. Only a heroic stylus assembly can meet the challenge of the end of side seven. DAVID JOHNSON

STRAUSS, RICHARD: *Die Frau ohne Schatten, Op. 65*

Leonie Rysanek (s), the Empress; Christel Goltz (s), the Dyer's Wife; Emmy Loose (s), Guardian of the Threshold; Judith Hellwig (s), Voice of a Falcon; Elizabeth Höngen (ms), the Nurse; Hilde Rössel-Majdan (c), Voice from Above; Hans Hopf (t), the Emperor; Karl Terkal (t), Apparition of a Youth; Murray Dickie (t), the Hunchback; Paul Schöffler (b-bs), Barak; Kurt Böhme (b), the Spirit Messenger; Harald Pröglhöf (bs), the One-eyed; Oskar Czerwenka (bs), the One-armed; Alfred Poell (bs), a Watchman. Soloists and chorus of Vienna State Opera; Vienna Philharmonic Orchestra, Karl Böhm, cond.

LONDON XLLA 46. Five 12-in. $24.90.

ESH APPROACH HANDEL

December Leonard nstein asked us over to negie Hall, where, with the of the New York harmonic and the tminster Choir, he was paring a new version of del's "Messiah." We rd it and were mightily ressed with his scholarly interesting approach. has eliminated a lot of the prian plush from the e, made certain discreet and rearranged the nal three sections into two a Christmas and an er portion. This way ssiah" seems a much e coherent work, and each ion becomes a neat tional entity. What he's is a more dramatic, ningful "Messiah." That entirely successful is ent in this joyful, spirited ormance, recorded shortly its Carnegie Hall debut. available at a most ctive price.

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BEETHOVEN: Symphony No. 9 in D Minor ("Choral")—Bruno Walter conducting the New York Philharmonic, with Frances Yeend, Martha Lipton, David Lloyd, Mack Harrell and the Westminster Choir, John Finley Williamson, dir.
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COLUMBIA

BEGIN THE BERGEN

Polly Bergen, brightest comet currently aglow on the entertainment horizon, is again visible to the naked eye (last time: her unforgettable portrayal of Helen Morgan on CBS Television's "Playhouse 90"), this time as star of her own regular network television show. The closing theme for her new show is an eye-misting ballad called "The Party's Over." Not entirely by coincidence this is the title of a brand-new album Miss Bergen has recorded for us . . . a beguiling sequel to her phenomenally popular "Bergen Sings Morgan" (CL 994), which, by the way, becomes an especially meaningful part of your record collection with the soon to be released film on the life and era of Helen Morgan. After hearing the playbacks of the new album we almost decided to change its title to "The Party's Just Beginning." Because that's what happens whenever Polly sings.

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glimmers through the pages of these late concertos. They are essentially chamber works, and in the horn concerto the soloist must share a great deal of the spotlight with interlopers from the orchestra: Strauss writes elaborate solos not only for the first and second flutes, oboes, clarinets, and bassoons (not to mention solo strings) but he actually gives a good deal of bravura to the two rival horns!

Dennis Brain (who, at the too early age of thirty-six, died last month in an automobile accident on his way back to London from the Edinburgh Festival) takes all this without a trace of annoyance. He lets his brethren have their say, never drowning out a word of their chatter. Indeed he plays with a fine, soft reticence which exactly suits this music. Brain's technique was, of course, fabulous, the most extraordinarily difficult passages being tossed off with an appearance of absolute ease. His loss will be deeply felt.

The orchestral accompaniments are superb. Wolfgang Sawallisch is clearly a gentleman to keep one's ear out for. D.J.

STRAVINSKY: *L'Histoire du soldat: Suite* — See Honegger: *Le Roi David.*

STRAVINSKY: *Perséphone*

Vera Zorina, speaker; Richard Robinson, tenor; Westminster Choir; New York Philharmonic Orchestra, Igor Stravinsky, cond.
COLUMBIA ML 5196. 12-in. $3.98.

Except for certain very recent compositions, *Perséphone*, written in 1934, is the only major work of Stravinsky that has remained unrecorded until now. It can best be described as a kind of opera in which the principal role is taken by a speaker and a narrator's part is taken by a singer; the chorus also has an enormously important part to play. The libretto, by André Gide, employs the classic legend but gives it at least one novel philosophic twist: Persephone, having descended to the Greek netherworld where all desire ceases, there learns the need to love and to be loved; and so the old allegory of the seasons takes on a new poetic coloration.

The music is very grave, quiet, and moving. At times it reminds one of Stravinsky's *Orpheus*, especially in its mysterious, softly radiant orchestral fabric. There is little polyphony, no bravura, and no showy neoclassicism; as Paul Valéry puts it in a letter quoted in Columbia's notes, the keynote of this work is its "divine detachment." The music that accompanies Persephone's descent into Hades is one of the most beautiful pages Stravinsky has ever composed, but the entire score is remarkable for its understated grandeur.

The performance is, of course, superb; Stravinsky's presence at the conductor's stand guarantees that, but Zorina reads her part with great sensitivity, and Robinson sings extremely well. The only adverse criticism to be made — and it is picayune — is that the singers of the Westminster Choir sometimes reveal, in their French, that the Westminster Choir School is in New Jersey. The recording is gorgeous and, for once, Columbia gives us the complete text, in French and English. Congratulations. A.F.

TCHAIKOVSKY: *Concerto for Violin and Orchestra, in D, Op. 35*

Jascha Heifetz, violin; Chicago Symphony Orchestra, Fritz Reiner, cond.
RCA VICTOR LM 2129. 12-in. $3.98.

First a word of lament. Wieniawski, Vieuxtemps, and Spohr wrote, among them, some twenty-five violin concertos. Four are in the catalogue. Tchaikovsky wrote one violin concerto and this is perhaps its twenty-fifth LP version.

But all sighs aside, this is a glorious performance. Heifetz has recorded this concerto at least twice before but here may well be his definitive statement. There are little annoyances such as piddling and senseless three and four bar excisions in the finale; and larger annoyances such as a virtual rescoring of the first movement cadenza. Heifetz's tone tends occasionally to be stringy, especially in rapid drops of a fifth or sixth. But what autumnal warmth, what intimate knowledge and love he brings to this music! One has something of the same sense of surrender in hearing him that one has in listening to Landowska play Bach or Lotte Lehmann sing Schubert; one begins to understand a little what Lear means when he says ripeness is all.

Reiner seconds this fine performance with one equally fine, striking the perfect balance between accompaniment and partnership, and his men are completely in accord with the soloist. The sound is up to RCA Victor's best, and the recording may be as highly recommended to the record buyer as Spohr and Vieuxtemps to the record maker. D.J.

TCHAIKOVSKY: *The Nutcracker, Op. 71* (excerpts)

Boston Pops Orchestra, Arthur Fiedler, cond.
RCA VICTOR LM 2052. 12-in. $3.98.

Fiedler records approximately half of the score, so that those for whom the suite is too little and the full score ever-so-much too big will find the perfect compromise here. RCA seems to have taken considerable pains to give this release the qualities of a high-fidelity demonstration record. Every instrument has its say, including the whole range of the percussion battery. The orchestra is letter-perfect. Its members could, of course, play this music in their sleep, but the wonder of it is that they are very wide awake and enjoying themselves immensely. In a sense there are no competing versions, save perhaps the two complete recordings by Dobrindt and Dorati. Dorati is very good, but Fiedler is even better. It all depends upon how much of the music you want to own. D.J.

Heifetz: in Tchaikovsky, ripeness is all.

VAUGHAN WILLIAMS: *Fantasia on a theme by Tallis* — See Elgar: *Variations on an Original Theme, Op. 36 ("Enigma").*

VAUGHAN WILLIAMS: *Symphony No. 8; Partita for Double String Orchestra*

London Philharmonic Orchestra, Sir Adrian Boult, cond.
LONDON LL 1642. 12-in. $3.98.

Some years ago Boult was presented conducting a boxed set of the seven symphonies of Vaughan Williams then in existence. Quite naturally, he now adds the eighth, but Sir John Barbirolli and the Hallé Orchestra recently got ahead of him with an equally fine performance and recording of the same work, and one that has the advantage of being issued (by Mercury) with Vaughan Williams' own notes; these are written in his wonderfully gruff, satiric style and contain many illuminating quotations from the score.

Frank Howes's notes for the London release do, however, provide one interesting observation. Howes draws a parallel between this symphony and Bartók's *Concerto for Orchestra.* Like the Bartók piece, the symphony experiments with its medium in unusual ways. Its first movement is a set of *variazioni senza tema* for the full ensemble. The second is a *scherzo alla marcia* for wind instruments and the third a cavatina for strings. In the finale, Vaughan Williams returns to the full orchestra and adds, as he puts it, "all the spiels and phones he can find." The result is a tremendous toccata for orchestra and tuned percussion, including tuned gongs and vibraphone; it is as if all the bell towers in England were pealing in unanimous jubilation.

Boult's excellent recording is filled out with Vaughan Williams' *Partita for Double String Orchestra,* a good but minor work that has not been recorded before. A.F.

VERDI: *Rigoletto*

Roberta Peters (s), Gilda; Lidia Grandi (s), Countess Ceprano; Santa Chissari (s), a Page; Anna Maria Rota (ms), Maddalena; Silvana Celli (ms), Giovanna; Jussi Bjoerling (t), Duke of Mantua; Tommaso Frascati (t), Borsa; Robert Merrill (b), Rigoletto; Vittorio Tatozzi (b), Count Monterone; Arturo La Porta (b), Marullo; Andrea Mineo (b), Usher; Giorgio Tozzi (bs), Sparafucile; Leonardo Monreale (bs), Count Ceprano. Rome Opera House Chorus and Orchestra, Giuseppe Conca, chorus master, Jonel Perlea, cond.
RCA VICTOR LM 6051. Two 12-in. $7.96.

In a number of ways, this seems a miscarried venture. First of all, Miss Peters is an unsatisfactory Gilda for some rather basic reasons. She is accurate about hitting the notes Verdi writes into her part (except for the low B in "*Caro nome,*" which she avoids), and she is equally precise with the notes she interpolates when she finds Verdi's writing insufficiently brilliant. But she chatters her way through the role

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of Gilda like a mechanical nightingale, and the total impression of the endless string of bright pinpoints of tone is one of depressing vacuity.

During the first half of the opera, Jussi Bjoerling's voice is dry and there is noticeable constriction which even results in unpleasant sharpness of pitch. In the later acts, the singing seems easier. "*Parmi veder le largime*" goes well and "*La donna è mobile*" better still, with its *pp* reprise ravishing. In spite of its flaws, Bjoerling's performance is one to treasure. The nobility of style and the grace of the phrasing are in a class by themselves.

Merrill's Rigoletto is excellent. None of his other recordings has captured the baritone in such beautiful voice and at so high a level of musical art. Tozzi is a good Sparafucile, but his performance becomes outstanding only once, when he upbraids his sister for suggesting he murder one of his own clients. Anna Maria Rota is an exceptionally fine Maddalena. The remainder of the cast is satisfactory, but there is a bad lapse of style on the part of the Monterone, who permits himself to bark part of his denunciation of Rigoletto, a psychological impossibility for this dignified old man.

Perlea is one of the finest opera conductors around (or rather, not around as far as New York is concerned, to our loss), and there are moments in his *Rigoletto* performance that make his stature thoroughly clear. Perlea also understands as few of his colleagues do the force in Verdi's accompanying figures, and his comprehension enables him to underscore with immense power Rigoletto's "*Voi congiuraste*"; for once, this passage really comes into focus as the highly critical dramatic event it is. Unfortunately, the whole performance is marred by dislocations of ensemble, many of them severe and persistent enough to cause substantial discomfort, and there are some interpretative failures which seem to be the result of sheer miscalculation. Two of them are especially distressing: the too-soon-come and too-soon-spent acceleration that causes the "*Vendetta*" to lose so much force, and the confusions of tempo and tissue which muddle the Quartet.

The side breaks in the recording are disastrous. One of them occurs not merely in mid-duet, but actually in mid-phrase! The phrase happens to be rather subtly divided between two voices — perhaps that caused the articulation to escape some eagle eye at RCA. The last break occurs thirty-six measures after the beginning of the last act, and this absurdity is compounded by the absence of a blank band at the end of the previous act, which makes an intermission a practical impossibility. Further symptomatic of a cavalier attitude is RCA's reissue of the same libretto that disgraced its 1950 *Rigoletto* album. The most amusing feature of this botched-up job is that it presents Sparafucile, "*un uom di spada*," as "a man with a spade" instead of "a man with the sword"; but amusement aside, the public ought not to be asked to pay for such incompetent work.

There are forceful musical reasons for preferring either the Angel edition (Callas, Di Stefano, Gobbi, Serafin) or the older Victor version (Berger, Peerce, Warren, Cellini) to this disappointing newcomer among *Rigolettos*. C.M.S.

More Briefly Noted

Beethoven: Quartet No. 7, in F, Op. 59, No. 1. Decca DL 9917.

The Koeckert players do not have very beautiful tone, but their respect for tradition and fine musical taste make this version the peer of any currently in the catalogue.

Boccherini: Symphony in C, Op. 16, No. 3; Concerto for Cello and Orchestra, in C (with Cambini: Sinfonia Concertante for Oboe, Bassoon, and Orchestra, in C). Period SPL 732.

Structurally, the Boccherini symphony is an extremely interesting blend of several styles. The cello concerto is also an attractive work, with an affecting Andante and a dancelike finale. The Cambini is undistinguished but not unpleasant. Skillful playing from Jean Decroos, cello, Laila Storch, oboe, Robert Cole, bassoon, and the Orchestra dell 'Accademia dell Orso, led by Newell Jenkins.

Busoni: Sonata for Violin, No. 2, in E minor, Op. 36a. Westminster XWN 18426.

A gorgeous performance by Max Rostal, accompanied by Noel Mewton-Wood, of one of Busoni's long, early, and very beautiful works.

Casadesus: Quintet for Piano and Strings, in C, Op. 16; Sonata for Violin and Piano, No. 2, in A, Op. 25. M-G-M E 3521.

Gaby Casadesus plays Robert Casadesus's lyric-classic quintet and somewhat Hindemithian sonata. Flawlessly made works in excellent performances. Recorded sound is very clean but a trifle shrill.

Chausson: Symphony in B flat, Op. 20 (with Berlioz: *Benvenuto Cellini*: Overture). London LL 1505.

Nobility in the symphony and tenderness in the overture, emanating from Robert F. Denzler's interpretation. Fine playing by the Paris Conservatory Orchestra (in the Chausson) and the Orchestre de la Suisse Romande (in the Berlioz), and spacious recording.

Dowland: Pieces for Lute. Westminster XWN 18429.

Semper Dowland, semper dolens gives the clue to this music. Though there are spirited, cheerful items, most have a touch of eloquent melancholy. Julian Bream is as skillful lutanist as guitarist, and the music is enchanting.

Haydn: Concerto for Flute and Strings, in D (with Leclair: Concerto for Flute and Strings, in C, Op. 7, No. 3; Pergolesi: Concerto for Flute and Strings, No. 2, in D). Vox PL 10150.

The Haydn concerto (not by Haydn) and the Pergolesi (possibly not by Pergolesi) are humdrum works. The Leclair, nobly blending French and Italian elements, is elegant and songful music. Camillo Wanausek is a fine flutist, playing with the able Pro Musica Chamber Orchestra (Vienna). Warning: what might be mistaken for surface noise is the audible key-mechanism of the flute, the result of extremely close recording.

Mozart: *Die Zauberflöte* (excerpts). Decca DL 9932.

Highlights from Decca's excellent three-disc album (DX 134), in which the outstanding performers are Maria Stader as Pamina, Rita Streich as Queen of the Night, and Dietrich Fischer-Dieskau in an admirable portrayal of Papageno.

Surinach: Symphony No. 2 (with Turina: *Rapsodia sinfonica*). M-G-M E 3510.

Arthur Winograd and the Philharmonia Orchestra of Hamburg play the rather immature Surinach work in a recording which shows insensitive editing. The Turina is better recorded, and well played by the pianist Sondra Bianca.

Verdi: *Aida* (excerpts). London LL 1648.

From London's full-length *Aida* comes a disc of highlights — a boon to those who want to hear Tebaldi's lovely pianissimos and Del Monaco's exciting clarion tones but can do without the whole score. The chorus and orchestra of the Accademia di Santa Cecilia (Rome) under Erede again are present.

Vivaldi: Concertos: for Violin and Orchestra, in G minor, P. 407; for Violin, Cello, and Orchestra, in B flat, P. 388; for Cello and Orchestra, in C minor, P. 434; for Two Violins, Two Cellos, and Orchestra, in G. P. 135. Oiseau-Lyre OL 50124.

P. 434 and P. 135 are new to LP and most welcome. All are played — by Georges Alès and Robert Gendre, violins; Roger Albin and André Remond, cellos; the Ensemble Orchestral de l'Oiseau-Lyre conducted by Louis de Froment — by first-class instrumentalists. The recording, unhappily, is far from first-class.

Wagner: Orchestral Excerpts. RCA Victor LM 2119.

Munch and the Boston Symphony present excerpts from *Tannhäuser*, *Walküre*, and *Götterdämmerung* with (for this music) a light touch, fast tempos, and a generally crisp approach. A different view of Wagner, which the individual listener may — or may not — like.

RECITALS AND MISCELLANY

LUCREZIA BORI: *"The Art of Lucrezia Bori"*

Massenet: *Manon: Obéissons, quand leur voix appelle.* Thomas: *Mignon: Connais-tu le pays?; Me voici dans son boudoir.* Massenet: *Manon: Adieu notre petite table.* Verdi: *La Traviata: Ah, fors' è lui; Sempre libera.* Puccini: *Madama Butterfly: Un bel dì. La Bohème: Valse di Musetta.* Mozart: *Don Giovanni: Batti, batti, o bel Masetto; Vedrai, carino. Le Nozze di Figaro: Deh*

vieni, non tardar. Nin: *Malagueña.* Falla: *Seguidilla.* Strauss-Betti-LaForge: *Tales from the Vienna Woods.*

Lucrezia Bori, soprano.
RCA CAMDEN CAL 343. 12-in. $1.98.

Bori is still vividly remembered by all whose opera-going at the Metropolitan extends back more than twenty years. Indeed, she is so much with us as an active director of the Opera Guild that it is hard to believe she retired in 1936. Her first appearance with the company was made as a guest during the Paris visit of 1910. Her success was emphatic, and two years later she joined the regular roster. Her career was interrupted by a throat operation in 1915, but after her return in 1921 she became one of the mainstays of the house. On the stage Bori was a lovely figure and an actress of power. Her voice was not a large one, but it had great purity and the same kind of grace that characterized her personally.

In listening to this Bori "revival" it is well to consider her recording career. Aside from a few Edisons made in her very early years, her work was all done with Victor. Her first "period" was 1914–15, when seventeen discs were issued. After her return in 1921, she was active in the recording studio for almost a decade, her list being about equally divided between late acoustical and early electrical recordings. After her retirement, she was induced to add an album of arias made with an orchestra conducted by Frank Black, and her final legacy was a series of Spanish songs accompanied by the distinguished pianist George Copeland (1939).

To hear Bori's voice at its best we must go back to the first series, though hardly one of her records lacks her own special kind of distinction. The group assembled here includes only electrics. The *Mignon*, *Butterfly*, and *Traviata* arias and the Strauss waltz all date from the late Twenties; the two songs are from the Copeland collaboration; and the rest from the Frank Black album.

To me the most interesting of the lot is the two-part scene from *Traviata.* Bori was not a brilliant soprano, nor did she have spectacular high notes, yet her Violetta, which I had the good fortune to hear a number of times, was incomparably the finest I have known. The opening recitative and "*Ah, fors è lui*" are models of neat and expressive singing. The "*Sempre libera,*" which she seems not to have approved when it was made (for it was issued years later), shows how coloratura can be made effective without being flashy. Something similar may be said of her treatment of the Strauss waltz.

The recordings made with Black were unsatisfactory when new because they were shrill and badly balanced. For once the LP dubbing is a decided improvement. I miss, however, a feature of the *Manon* "Gavotte." At the end one could hear the singer exclaim, "That was good!" Unfortunately, this has been cut off.

PHILIP L. MILLER

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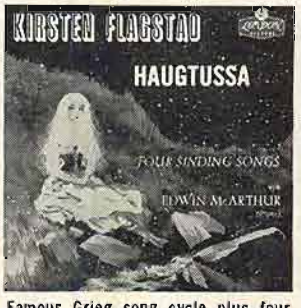

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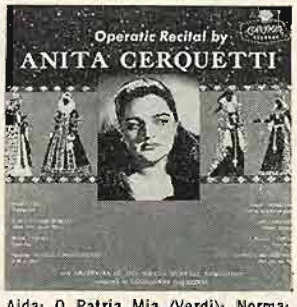

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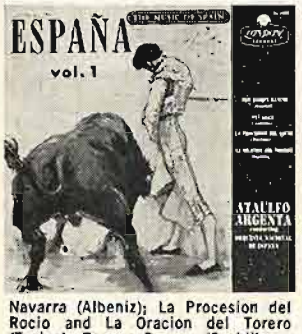

Navarra (Albeniz); La Procesion del Rocio and La Oracion del Torero (Turina); Basque Dances (Guridi). LL-1585

Capriccio Espagnol (Rimsky-Korsakov); España Rhapsody (Chabrier); Andaluza (Granados); Spanish Dances (Moszkowski). LL-1682

Three Cornered Hat (Falla); Sinfonia Sevillana (Turina). LL-1635

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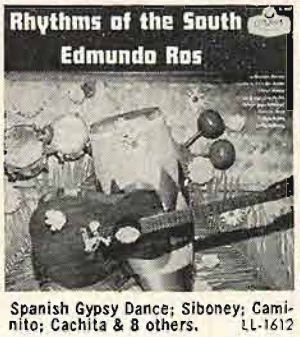

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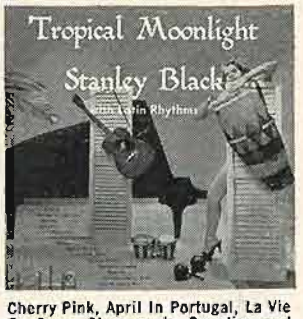

Cherry Pink, April In Portugal, La Vie En Rose, Stranger in Paradise and 10 others. LL-1615

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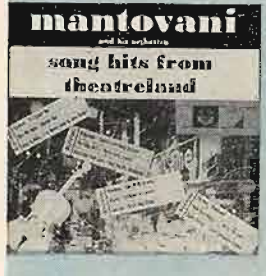

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This is a lecture-demonstration of the character and uses of thirty-three different instruments employed in the standard symphonic literature. Mr. Beckett, who is the speaker as well as the conductor, has had years of experience in directing concerts for young people. There is no nonsense about his approach, no whimsey, no sugar coating, no patronizing. He talks simply and straightforwardly about each instrument and about what it can do. The musical illustrations are not mere scales or improvised tootlings and scrapings or unaccompanied melodies; most of them are passages from familiar works in the standard repertory, played as scored by the composers.

As a rule, these passages are very well chosen. The performers are all crack players, many of them being first-desk men of the New York Philharmonic-Symphony. Indeed, they play so beautifully, and they are recorded so well, that one sometimes finds oneself wishing that Mr. Beckett would not stop them at the end of a passage but just let the glorious sounds roll on. Since, for economic reasons, the choice had to be confined to non-copyright works, Tchaikovsky, Rimsky-Korsakov, and Wagner are heavily drawn upon, but there are examples by other masters, ranging from Bach to early Stravinsky.

The commentary is clear and instructive when it deals with the instruments themselves but pulls some boners when it ventures into their history. Some of these are familiar ("Haydn perfected the orchestra") but others, such as the statement that clavichords were used in instrumental ensembles or that Mozart invented the glockenspiel or that the use of the bass trumpet was confined to Wagner, are new to me. However, any intelligent teacher can easily take care of such matters; and when that is done, the album makes a splendid means of introducing a class of beginners, young or adult, to the wonderful world of the orchestra. And, if he ignores the relatively few historical remarks, any individual should find it an equally fine self-instructor.
N.B.

MISCHA ELMAN: *Recital*

Sammartini: Passacaglia (arr. Nachez). Vitali: *Ciaccona* (arr. Charlier). Handel: Sonata for Violin and Piano, No. 4, in D. Bach: Air for the G String (arr. Wilhelmj).

Mischa Elman, violin; Joseph Seiger, piano.
LONDON LL 1631. 12-in. $3.98.

Mischa Elman's strongest attributes have always been his big, meaty tone and his sense of musical style, expressed in terms of phrasing both careful and subtle. The four classical compositions on this disc serve ideally to show off these qualities. From every standpoint, this is one of the best of his recent efforts before the recording microphone.
P.A.

KATHLEEN FERRIER: *Broadcast Recital from Norway*

Purcell: *Hark the Echoing Air* (from *The Fairy Queen*). Handel: *Like as the Love-Lorn Turtle* (from *Atalanta*); *How Changed the Vision* (from *Admeto*). Wolf: *Verborgenheit; Der Gärtner; Auf ein Altes Bild; Auf einer Wanderung.* Jensen: *Altar*

Kathleen Ferrier, contralto; Phyllis Spurr, piano.
LONDON LL 1670. 12-in. $3.98.

This recital was sung in 1949 in an Oslo studio before an audience of 250 people who share liberally in the recorded version of it (applauding, coughing, and breathing a long "ahhh!" when Miss Ferrier announces, in a speaking voice almost as lovely as her singing one, that she is going to give them an encore in Norwegian).

London has put on the market much Ferrier material that is early, indifferently recorded, and far below the standards of the artist who, with Bruno Walter, gave us the three contralto songs from *Das Lied von der Erde*. But I did not get far into the first song on this recording before all resistance melted. For one thing, the sound is very good for a casual studio-archives tape. The London engineers have not been able to eliminate surface noises, which are especially troublesome in *Auf einer Wanderung*, but the vocal presence is so commanding and the balance between voice and piano so good that I for one soon lost the sense of all extraneous sounds and found myself immersed in the music.

This is Ferrier at her ripest, and it is a remarkably good anthology of her technical and emotional resources, from the fleeting, pure coloratura of *Hark! the Echoing Air* and *Like as the Love-Lorn Turtle* through the gay, sly tenderness of *Der Gärtner* (surely the very best performance that this delicious song is capable of receiving) to the almost erotic passion of *Auf einer Wanderung* and the ascetic calm of *Verborgenheit*. Indeed I found myself thankful for the applause after these last two great Mörike songs: it served to make me realize that I was "standing on Earth, not rapt above the Pole." Even the anticlimax of Jensen's bathetic *Altar* does not serve to spoil these forty minutes rescued so happily from the eternal flux.
D.J.

KIRSTEN FLAGSTAD: *Hugo Wolf and Richard Strauss Recital*

Wolf: *Gesang Weylas; Gebet; Uber Nacht; Der Freund; Heb' auf dein Blondes Haupt; Anakreons Grab; Morgen Stimmung; Zur Ruh.* Strauss: *Befreit; Mit deinem Blauen Augen; Lob des Leiden; Ich Trage meine Minne; Seitdem dein' Aug; Geduld.*

Kirsten Flagstad, soprano; Edwin McArthur, piano.
LONDON LL 1680. 12-in. $3.98.

The quality that Flagstad projects best, it is a truism to say, is a cool and detached nobility. This is almost always admirable in Wagner and Gluck, but only exceptionally is it admirable in lieder singing. The voice is the great Flagstad voice, only a little the worse for wear; some of the higher notes are strained, but even more of them are impeccable, attacked with a proud, strong certainty which leaves one marveling. But it is too big a voice for lieder, and too conservative a one. Lieder is chamber music; it speaks with an intimacy and frankness, even with a neuroticism, which have nothing to do with the large gestures of the operatic stage. Flagstad understands this, one feels; she controls the volume of her voice well and shapes her phrases with fine artistry. But there is no abandon, no light and shade.

When the music cries out for tenderness Flagstad gives nobility, when it pleads for passion she gives nobility, when it speaks with a dark ironic bitterness she gives — nobility.

The selection is a wise one since none of the songs is entirely outside of the soprano's emotional gambit. That is, all of them have a touch of nobility. And when song and singer are in accord, the results could not be better. It is worth having this record just for the glorious *Der Freund*; the *Gebet* and *Anakreons Grab* are only a little less good. And, proving the dangers of critical oversimplification, Flagstad gives a disconcertingly convincing performance of Strauss's *Befreit*, which, according to my calculations, ought to have been the least happy thing in the recital.

Her accompanist is, of course, Edwin McArthur, and a very fine accompanist he is too. He knows his singer well and, unlike the usual lieder pianist, frequently leads rather than follows. In the *Morgen Stimmung* one can hear Flagstad begin to catch the ardor of the music from McArthur's own passionate playing. And one remembers that this great singer has almost always depended upon a great conductor (which, unfortunately, McArthur never was) to achieve her best moments.

D.J.

EUGENE MALININ: *Recital*

Beethoven: Sonata for Piano, No. 21, in C, Op. 53 (*"Waldstein"*). Prokofiev: Sonata for Piano, No. 4, in C minor, Op. 29; *Sarcasm*, No. 3. Scriabin: Two Poems, Op. 32.

Eugene Malinin, piano.
ANGEL 35402. 12-in. $3.98.

Watch Malinin. He is good. He believes in tone and rhythm rather than speed and flash; and if you find yourself playing the Beethoven side of this record more often than the side containing the Russian pieces, that will prove only that fine musicians are the most penetrating critics. The recording is one of the most beautiful ever made.

A.F.

NETHERLANDS CHAMBER CHOIR

Palestrina: *Missa Brevis; Missa ad Fugam.* Bach: Chorales (3). Lotti: *Vere languores nostros; Crucifixus.* Lasso: *Adoramus te, Christe.* Handl: *Ecce quomodo.*

Netherlands Chamber Choir, Felix de Nobel, cond.
EPIC LC 3359. 12-in. $3.98.

The *Missa Brevis* is one of the more affirmative of Palestrina's Masses, and the verve with which it is performed here indicates that Mr. De Nobel considers vitality a quality not inconsistent with the spirit of Palestrina's sacred music. The chorus has an agreeable tone, plenty of flexibility, and good balance. Strangely, its interpretations of the moters on Side 2 are somewhat paler in spirit. Only a portion of the *Missa ad Fugam* is given here: the Credo, Benedictus, and first Agnus are lacking. This is a pity, because the Mass is not otherwise on LP, and the missing sections could easily have replaced the Bach chorales.

N.B.

ROBERT NOEHREN: *Baroque Organ Music*

Schlick: Organ chorale: *Maria zart von edler Art.* Sweelinck: *Six Variations on "Mein junges Leben hat ein End"*; *Fantasia super Ut, Re, Mi, Fa, Sol, La.* De Cabezon: *Diferencias sobre "El Canto del Caballero."* Frescobaldi: *Canzona dopo l'Epistola* and *Ricercare dopo il Credo* from *Fiori Musicali*: *Messa della Madonna.* Scheidt: Organ chorale: *Da Jesus an dem Kreuze stund (Versus I* and *VI).* Pachelbel: Organ chorale: *Vom Himmel hoch* (No. 57 and 58).

Robert Noehren, organ.
CONCORD 4002. 12-in. $4.98.

I suspect this is a reissue of an old Allegro recording withdrawn from the catalogue, but reissue or not, it is a superior disc. Mr. Noehren, head of the organ department at the University of Michigan, is justifiably well known for his spirited, intelligent, stylistically appropriate performances. He is heard on one of the best and earliest examples of modern baroque organs in this country, that built by Hermann Schlicker at the Kenmore Presbyterian Church in Buffalo, New York. Although much of the music is available on other recordings, it remains a discriminating representation of organ music of the period. The sound is clean and intimate, and surface noise has been eliminated. Organ specifications and lengthy notes help to make this a release to be recommended highly.

R.E.

PANORAMA OF MUSIQUE CONCRETE, No. 2

LONDON DTL 93121. 12-in. $3.98.

Like the first *Panorama of Musique Concrète*, which appeared some months ago, this disc is given over almost exclusively to compositions by the two French pioneers of that technique, Pierre Schaeffer and Pierre Henry, but the compositions here represent the style in an earlier stage of development.

The main work of the second *Panorama*, which fills almost all of the second side, is a joint production of Schaeffer and Henry composed in 1950 and called *Symphonie pour un homme seul.* This piece is based on the inflections, intonations, and nuances that make words meaningful, but, except at one point, no words are used. These vocal sounds shade in and out among the sounds of musical instruments, which often resemble them most startlingly; and the whole is given propulsion by dance rhythms. *Musique concrète* is quite unlike this today, but with its obvious dependence upon more traditional concepts of music, this early example has considerable interest, both in itself and as a point of departure for later developments. The movement called *Erotica* is not for your maiden aunt from the country.

Another outstanding piece in this collection is Henry's *Vocalises.* Here a single vowel sound is transformed into the most extraordinary sequence of squeaks, grunts, booms, and rasps you ever heard, but the original vowel sound keeps returning at various pitches and with its original vocal

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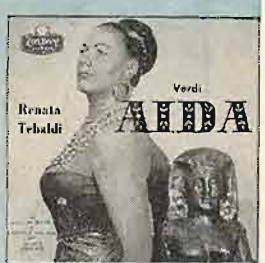

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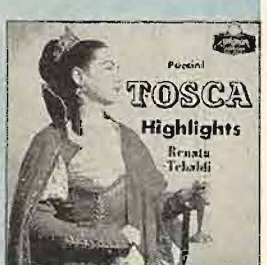

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color to create a wonderfully surrealistic effect. Henry and Schaeffer together provide an ethereal, many-voiced composition based on the bird song which the Italian Radio uses as a call signal. Also included are a film score by Henry and a study in sound and silence by the same composer, as well as an austere and very effective *Study* in percussive sounds by one Michel Philippot. A.F.

More Briefly Noted

American Anthology, Vol. I. Concord 3007.
This is a collection (taken from Allegro-Elite's three-record album, 3148/50) of works by American composers ranging from Francis Hopkinson (1737–91) to Henry Kimball Hadley (1871–1937). For the most part, these have a historic rather than musical interest, but the pieces by Chadwick (*Hobgoblin* from *Symphonic Sketches*) and Parker (Orchestral Interlude from *Mona*) may have real artistic merit. Richard Korn conducts the Concord Philharmonia and Karl Brock and James Pease are the vocalists.

Catherine Crozier: French Organ Music, Vol. III. Kendall LP 2557.
Messiaen's *Messe de la Pentecôte* is a work that demands rehearing for its appreciation. Dupré's dazzling Prelude and Fugue and Roger-Ducasse's lovely Pastorale return the listener to normal musical paths. Miss Crozier's musicianship is discriminating, but the Methuen Memorial Music Hall is overreverberant.

Thurston Dart: Masters of Early English Keyboard Music, Vol. III (John Bull and Matthew Locke) and Vol. IV (Orlando Gibbons and Giles Farnaby). Oiseau-Lyre OL 50130/1. Two 12-in.
Bull has a larger creative sweep than Farnaby, but the latter is often more immediately appealing. Gibbons is highly versatile, and Locke's music shows the triumph of tonality over modality. Thurston Dart, playing a bureau organ (in Vol. III) and a harpsichord (in Vol. IV), performs all these late sixteenth-, early seventeenth-century works as vital and meaningful music.

Lisa Della Casa: Lieder Recital. London LL 1535.
A rather uneven selection of songs from Schubert, Brahms, Wolf, and Richard Strauss. The singer is at her best in works with a decided programmatic element. Karl Hudez's accompaniments are deplorably bland, and the engineers placed the piano too far back.

Alfred Deller: Italian Songs. Vanguard BG 565.
Songs by little-known early seventeenth-century Italian monodists, plus five arias by A. Scarlatti and two harpsichord pieces. Deller sings with his usual clarity and purity; Desmond Dupré plays the lute and gamba, George Malcolm the harpsichord.

Italian Chamber Music. Vanguard BG 566.
Baroque chamber music, vocal and instrumental, of which Stradella's Cantata, *Ombre, voi che celate*, and Torelli's Concerto in D minor are the outstanding pieces. Niels Brinker, tenor, sings understandingly, and the Soloists and Orchestra of the Societas Musica (Copenhagen) are competent.

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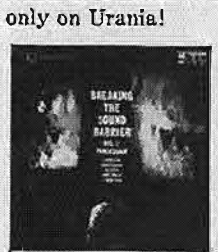

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THE SPOKEN WORD

STEPHEN CRANE: *The Red Badge of Courage*

Edmond O'Brien, reader.
CAEDMON TC 1040. 12-in. $5.95.

The appeal and uses of a recording that presents an author reading his own prose, or a skilled elocutionist reciting a poem intended for the ear, are fairly obvious. Less obvious is the sense of hiring an actor to read an abridged period novel, so I approached *The Red Badge* with diffidence. A hearing allayed most of my doubts. The tale is one that takes well to telling, and it is rather fun to have studio musketry rattling away in the background. At any rate, I attended all the way through (the editing, very skillful, brings the listening time down to about an hour) without effort. O'Brien has such a fine time trumpeting out the noble adjectives — it is a great credit either to him or to Crane, I'm not sure which — that although Whitman came to mind several times, never once did I think of the *New Yorker's* "In-

toxication with Sound of Own Words" Department. J.M.C.

ECCLESIASTES

Selections from the Book of Ecclesiastes, read by James Mason.
CAEDMON TC 1070. 12-in. $5.95.

James Mason reads the Book of Ecclesiastes with a sighing tone of voice that is, according to my memory, not noticeable in his films. The hearer may or may not like it. A member of my family remarked that it sounded unctuous. Whatever else it is, it is remarkably expressive of the whole tone and spirit of Ecclesiastes, a fittingly dramatic rather than liturgical interpretation.

Ecclesiastes is a poetic and philosophical, but not particularly religious, book; and the "preacher," as he is called, is not unlike Schopenhauer nor, for that matter, Guatama Buddha. He is however, less consistent, inasmuch as unlike the latter he retains his belief in God. "All is vanity" seems to be his final conclusion and constant refrain. But as Ecclesiastes is melancholy but not consistently so, Mason's voice brightens up from time to time with a charming lack of rhyme or reason.

Like most embittered writers, the "preacher" does not finish his book without taking a shot at the female sex. "For I find," he says, "more bitter than death the woman, whose heart is snares and nets, and her hands as bands: whoso pleaseth God shall escape from her; but the sinner shall be taken by her." Probably some young woman had turned him down. Also he seems to feel that solemnity is better than laughter, perhaps on somewhat the same basis as some clergymen, not sound in the faith, who outdo their genuinely spiritual colleagues in the pomp of professional sanctimony.

But throughout all there is the characteristic inconsistency. "Sorrow is better than mirth," the preacher declares in one breath, and "To eat, and to drink, and to be merry" he says in the next. He remarks that it is a good idea to keep on the right side of kings, that the righteous and the wicked suffer alike, that he does not believe in immortality. All of this Mason reads eloquently, the shifts in tone perhaps being the inevitable result of the capriciousness inherent in Ecclesiastes' own skepticism. WALTER B. WRIGHT, S.T.B.

T. S. ELIOT: *Four Quartets*

Burnt Norton, East Coker, The Dry Salvages, Little Gidding; read by the author. ANGEL 45012. 12-in. $3.98.

In *The Music of Poetry* (1942) Eliot wrote: "There are possibilities for verse which bear some analogy to the development of a theme by different groups of instruments; there are possibilities of transitions in a poem comparable to the different movements of a symphony or a quartet; there are possibilities of contrapuntal arrangement of subject-matter." The *Four Quartets* put these possibilities into practice. All Mr. Eliot's serious verse demonstrates the freedom derived from deliberate self-subjection to strict discipline of structure and form; here that method is pursued perhaps to its ultimate.

Very roughly, the general theme of the *Quartets* is the relation of time to eternity and the redemption of time "At the still point of the turning world." Each quarter takes its title from a specific place-name which has had some significance in time personal or time historic (the Dry Salvages, for instance, are a group of rocks off the coast of Cape Ann, Massachusetts, which Eliot knew as a boy; Little Gidding the Huntingdonshire village where, in 1625, Nicholas Ferrar established a religious community); and each is primarily concerned with one of the four natural

Molière's Classic Caste Comedy in Smiling Authenticity

AFTER the energetic ruthlessness of a succession of farsighted chancellors had plucked away the reality of power from the majority of the great French *noblesse* of the seventeenth century, Louis XIV domiciled and salaried those of its membership who chose to live at court. In compensation for the seizure of their fiefs, serfs, and villages he gold-plated them with glory, and in many ways their condition was one to envy.

They were certainly envied, and Molière wrote a stunning comedy about one of the enviers. M. Jourdain is a rich burgher bewitched by the luster of courtliness, which he aspires to emulate. This is a very, very common thing still, man's desire to be what he is not, and it exists everywhere, even in places where its realization is the ultimate preposterousness of hope. In lampooning the pretensions of his protagonist Molière shrewdly flattered the court without offending the trading classes, jealous of any escape from their rank and detesting the man who would try it and fail.

Jourdain is drawn with deft obviousness, his naked simplicity closer to burlesque than a modern dramatist would offer it. But there is human sympathy in the portrait, and the ambitious tradesman well understood that the status he hoped for had certain standards that could be attained only by study and practice. The duties of the urban *noblesse* were to be decorative in life and imposing in the death they had to confront with vigor and grace: Jourdain hired experts in speech and song, fence and thought, dance and decorum, to make him adept in gracious living. I think his application deserves some praise. We can be assured that Jourdain could have pronounced Louise de la Baume le Blanc de la Vallière if Molière had dared give him that name to utter.

It requires a highly endowed hand to make a permanent comedy out of characters rigorously stock. Molière has managed to clothe the measured regularity of his lines, neither quite prose nor verse, with a refinement of colloquialism, an instinct for words, that must produce awe in any wordsmith watching them slide out with their dictatorial finality. *Le Bourgeois Gentilhomme*, when read, loses most of its plain funniness, but acquires, with the concentration upon its verbal procession, a universality of character and attribute that distinguishes creation from journal.

Maybe records — particularly these records — are the best way to present this universality. In this production, swift and confident, the dialogue is flashed like a relay of arrows, driving home an impression that nothing else could possibly be said. Admittedly hard to assimilate, the rapidity of impact exhilarates. The stimulus is continuous and even a little fatiguing, but in repayment the speech is limpid and the voices that deliver it are so nicely chosen that there is never any doubt which character holds the stage. *Le Bourgeois Gentilhomme* is a caste comedy with four castes; and shopkeeper, Bohemian, maidservant and marchioness are equally identifiable and natural without ambiguity or overemphasis.

We used to read it in school, without expectation from our teacher, and while it is too good for little ruffians to absorb, it does provide, for the attentive, a potentiality of insight into French nowhere else so pungently available. God forbid that Molière be degenerated into a pedagogue; but I am convinced that tourists besetting the chateaux along the Loire will have wasted less time more amiably, more decently and imposingly, if they have listened hard to the London records of a comedy written long before the chateaux had become museums.

Le Bourgeois Gentilhomme is a *comédie-ballet* for which Lully composed incidental music and a final *divertissement*. This has been included in the recording, which it spices. Providing decoration, the music also establishes an authenticity of era, and it is worth noting that nowhere does it interfere with the movement of the play or obscure the sound of the words except those that were written to be sung. Without exaggerating (which has been done) the keenness of characterization of this music composed before the great characterizers had shown how they did it, it can be said that it is resourceful, entertaining and easy; that it is given on the records with what seems like a smiling authenticity in both its vocal and instrumental aspects; and that it provides welcome points of relaxation in the lightning delivery of the dialogue.

Realistic reproduction is continuous; and to maintain a high merit for the entire production, the printed French text is accompanied by an English translation of remarkably appropriate and adroit tailoring.

C. G. BURKE

MOLIERE-LULLY: *Le Bourgeois Gentilhomme*

Bernard Blier, M. Jourdain; Marthe Mercadier, Mme. Jourdain; France Descaut, Lucile; Annette Poivre, Nicole; Jean-Claude Michel, Cléonte; François Perier, Covielle; Jean Topart, Dorante; Geneviève Page, Dorimène. Soloists, Chorus and Orchestra of the Collegium Musicum, Paris; Jean Chouquet, dir.; Roland Douatte, musical dir.
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elements — air in *Burnt Norton*, earth in *East Coker*, water in *The Dry Salvages*, fire in *Little Gidding* — into which the temporal works of man are dissipated or through which they are destroyed. Each quartet is constructed in five movements, the first being statement and counterstatement, the second movement developing the theme from the point of view of both the personal and the abstract, the third movement exploring the subject in its detailed ramifications, the fourth being a short, very lovely lyric interlude, and the fifth recapitulating the themes and resolving the discords. These are self-contained poems, but the fourth quartet, *Little Gidding*, encompasses the themes and the imagery of the others in a final great reconciliation. The fire of destruction also is the fire of purification; in the end is the beginning. The Dove of Pentecost descends in tongues of fire; "And all shall be well/ All manner of things shall be well/ When the tongues of flame are in-folded/ Into the crowned knot of fire/ And the fire and the rose are one."

To listen to this extraordinarily complex sequence of poems is still to be left ". . . with the intolerable wrestle/ With words and meanings." But it is difficult to imagine anyone who could make them more meaningful than Mr. Eliot does in his somewhat dry, precisely articulated, emotionally underplayed reading; and while the logic of the discourse may escape us, the sensuous beauty of the rhythms and of "The complete consort [of words] dancing together" cannot. J.G.

ROBERT FROST

A selection from the poems of Robert Frost, read by the author.
CAEDMON TC 1060. 12-in. $5.95.

The *doyen* of American poets, who in a published interview last spring announced that he had "never led a literary life" and "never even had a typewriter," here reads some of the poems which have made him four-time Pulitzer-prize winner and the recipient of innumerable honorary degrees. The selections are for the most part the familiar dramatic monologues or dialogues characterized by homeliness of common speech, shrewd observation of concrete detail, and laconic wit. Appropriately, they are read in the accents of everyday speech, the voice that of an old man dispassionate but sturdy, and sententious in the best sense.

It perhaps should be noted that ten of the twenty-three selections on this disc already have appeared on Decca's release (DL 9033), also read by the poet. In my opinion the choice between the two issues depends only on whether one wants, of the best-known poems, *After Apple Picking* and *West-Running Brook* (Caedmon) or *Stopping by Woods on a Snowy Evening* and *Two Tramps in Mudtime* (Decca). J.G.

FOLK MUSIC

by Edward L. Randal

COCKING a generous eye — and ear — toward England's northern neighbor, London has come up with four recordings of assorted Scottish airs in clean, full-bodied sound. Easily the best of the crop is *Highland Bagpipes* (LL 1582), featuring Seumas MacNeill, Joint Principal of the Glasgow College of Piping. MacNeill's solo technique cannot be faulted, as he runs down a list of selections employed to announce the day's activities in Scots regiments; thus we have *Johnnie Cope* for reveille, *Bannocks of Barley Meal* for officers' mess call, and even the stately *Flower O' The Forest* for funeral salute. On the flip side, MacNeill cuts loose with a virtuoso account of traditional melodies. Altogether an intelligent, well-played commentary on a fascinating instrument.

The Voice of Scotland (LL 1602) is Kenneth McKellar, a young tenor with a clear, firm voice that is perhaps a touch too bland to be fully effective in the rough-hewn ballads he has chosen. In any case, his is a genteel, antiseptic recital purged of all burrs. His efforts are not enhanced by an orchestral accompaniment that sounds like something out of Disneyland.

McKellar joins forces with vocalist Calum Kennedy in a partially overlapping collection called *Songs of Scotland* (LL 1577). Kennedy is not in the same vocal league as McKellar, but he manages to escape the orchestra for three guitar-accompanied Gaelic songs that are quite the best thing on the record.

Jim Cameron and his Scottish Country Dance Band romp happily through a program of old-time dances on *Gay Gordons* (LL 1581). Would-be dancers who want to get into the spirit of things are provided with detailed instructions in the album notes.

To be recommended is *The Wraggle Taggle Gipsies* (Vanguard VRS 1001), in which the renowned countertenor Alfred Deller, accompanied by Desmond Dupré on lute and guitar, sings a group of old English ballads with his customary excellence. Deller's high, haunting, richly colored voice polishes each song into a many-faceted gem. The Taylor Recorder Consort spells him with four finely wrought interludes of songs specially arranged for recorder quartet. First-class sound throughout.

On another Vanguard release, *The Weavers at Carnegie Hall* (VRS 9010), this well-known vocal quartet imparts robust life to a wide range of folk songs from several nations and several cultures — with heaviest accent on the native American. At one ill-starred point the singers exercise their wit at the expense of the ballad *Greensleeves*, producing all the hilarity of a migraine headache; but if you can disregard this tasteless sequence, the record has compensating moments.

Rounding out Vanguard's impressive crop is *Jewish Folk Songs* (VRS 9011), featuring the talented soprano, Martha Schlamme. Miss Schlamme's songs — by turns joyous, poignant, humorous, and tragic — draw upon long centuries of Jewish tradition; yet, both melodically and emotionally, they seem as fresh as tomorrow's sunrise. The Viennese-born vocalist is in top form, and the engineers have favored her with impeccable reproduction.

Continued on page 116

The Music Between

IN recent months rumor has had it that dance bands are on their way to a comeback and are hopeful of regaining the flourishing state of the name bands of the Thirties. Last month rumor took on the appearance of fact with the release of a wide variety of dance records. North American and Latin, swing and sweet, bop and rock, with and without vocalists, featuring a single instrumentalist or an entire section — all are issuing forth from the record companies. Curiosity rampant, I asked Larry Elgart, who with his brother Les has one of the most successful of the current dance bands, if the bloom had come back to the ballroom.

Business, he said, was getting better, but still was nothing to blow golden trumpets about. Most bands, he thought, seem to

Les Elgart: anyone for dancing?

have outgrown the need to make freakish arrangements and he suspected the beginnings of a trend toward greater simplicity in dance arrangements. Of one point he was certain. With the high-fidelity era well advanced, dance bands have to consider sound in general as much as rhythm per se in making records.

With these words of authority in mind I attacked a pile of new dance records, starting with the latest Elgart product for Columbia, called *For Dancers Only* (CL 1008). The Elgart beat seems suitable for almost any non-Latin ballroom step, and for listeners-only offers exuberant brass arrangements that are never out of control. *You Go to My Head* is a good example of this style. In general, the Elgart band keeps the melody up front in the musical showcase, handling crescendo and diminuendo as carefully as dynamite.

Erroll Garner is on the dance bandwagon with an orchestra directed for Columbia by Mitch Miller. Called *Other Voices* (CL 1014), it keeps ears open and feet alive. The famous Garner piano is neither overbearing nor drowned out among violins and brass, even in dramatic arrangements for songs such as *I Didn't Know What Time It Was*. The Garner technique for trapping a mood is particularly effective in *Dreamy*, and in *It Might As Well Be Spring* sprightliness alternates with poignancy.

One of the pleasantest surprises was *Whispering*, with Luis Alcaraz's orchestra (RCA Victor LPM 1385). This is a good clean band that titillates with piano and trumper solos. Beat and sound are particularly well balanced, especially in *Sentimental Journey*.

In the Latin field my favorite in the current batch is *Mucho Puente*, with Tito Puente and his orchestra (RCA Victor LPM 1479). Puente is always Latin, always melodious, never raucous. Also very palatable is Xavier Cugat's orchestra, with *Bread, Love and Cha-Cha-Cha* (Columbia CL 1016). Though the Latin quality occasionally gets a little thin, this is a big, efficient outfit specializing in smooth, distinct rhythms. For those who want to learn or rehearse Latin steps I recommend *Piano Meringue Cha-Cha-Cha*, with Johnny Cronquet, his piano and orchestra (RCA Victor LPM 1469). Here the beat never strays and the music is pleasant.

There are still bands that, by my standards, overarrange. Perhaps some record makers are convinced — and they may be right — that unusual sounds sell more records than tuneful music. This seems to be an underlying principle of *Temptation*, with the talented Morton Gould and his orchestra (RCA Victor LPM 2128). So far as I'm concerned, tossing harps around and fooling with strings makes *Body and Soul* self-conscious rather than stimulating. Columbia has done something similar in *A Young Man's Fancy*, with Frank Comstock's orchestra (CL 1021). Trickery here is at its worst when it completely destroys the wistfulness of *Spring Is Here*.

Some records that I personally found disappointing may have a wider appeal than I realize. Among these is *Around the World*, with Frankie Carle, his piano and orchestra (RCA Victor LPM 1499). Mr. Carle has bounce but not much imagination, and the staleness is not relieved by such devices as a boogy beat piano for *Tales of the Vienna Woods*. Another in this category is *Party Night at Joe's*, with Joe Reisman and his orchestra (RCA Victor, LPM 1476). This disc may have just the right cozy quality to make the babysitter happy. But since I date back to Benny Goodman, I was dissatisfied with Reisman's versions of *Stompin' at the Savoy* and *Jersey Bounce*. Stan Kenton's orchestra is working for Capitol with a male quartet called Modern Men and a female soloist, Ann Richards, on a disc called *Kenton with Voices* (T 810). The voices are about as helpful to Mr. Kenton as two gloves to an infielder.

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FI MAN'S FANCY

by Philip C. Geraci

"Classics in the Park." Donald Vorhees and his Symphony Orchestra. Urania UR 8003.

This record contains a collection of eight pieces describable perhaps as "pops encores." They include such much-hummed choices as *Valse Bluette*, (Ricardo Drigo) and *Simple Aveu* (François Thomé). Listeners familiar with the "Telephone Hour" will understand the category, as well as the presentation on this first recording of the Vorhees ensemble. The recording is clear, uncolored, and extremely well balanced. This is not a show-off disc, since neither the music nor the recording is overly sensational. But it is pleasant listening, with performances which suit the music to a T.

"Fantasia Española." Orquesta de Camara de Madrid, José Luis Lloret. Montilla FM 100.

Here is an unpretentious record of very considerable charm. It is a collection of twelve short pieces for orchestra by Spanish composers. The music probably will be unfamiliar to most North American listeners, but it is to be recommended for its liveliness, high melodious content, and emotional appeal. There is a bit of "movie music" quality here, and the performances are excellent. The recording is as perfectly balanced, pure yet whole-sounding as any I've heard. The music has impact of its own, and electronic overemphasis of one kind or another might have destroyed it. None was employed, and the result is an extremely enjoyable experience.

Overtures. Hollywood Bowl Symphony Orchestra, Felix Slatkin, cond. Capitol P 8380.

Continuing its series of Hollywood Bowl offerings, Capitol here presents four of the best-known of all short concert works: Tchaikovsky's *1812* Overture; Rossini's Overture to *Guillaume Tell*; and Von Suppé's *Poet and Peasant* and *Light Cavalry* Overtures. As in other Hollywood Bowl recordings, the orchestra is delivered in flawless detail. Cymbals, for example, here have a crisp sheen, and the violins have no trace of harshness. The big drum in the *1812* Overture is the closest thing to a cannon (without being one!) that I have heard — it literally shakes the windows. All in all, this is an excellent collection of works which, although often recorded, are not often recorded so well.

Operatic Highlights for Orchestra, No. 5. London Symphony Orchestra, Pierino Gamba, cond. London LL 1671.

There is only one word that can be used to describe this record — fabulous! Too seldom can one put on a record for casual listening, and then find himself listening intently, transfixed by the pure sonic beauty of the thing. This is such a record. The string sound is utterly remarkable; it is sweet and fluid, yet bright and crisp where needed. The dynamics of the strings alone give them an expressive range which is extraordinarily rare on records. In the preludes to Acts I and III of *La traviata* and the intermezzo from Mascagni's *Cavalleria rusticana*, they seem almost to come alive.

The dynamics of the full orchestra are astounding. Climaxes in Mancinelli's overture to *Cleopatra* will shake the floor; so will the great chords of the overture to Verdi's *Sicilian Vespers*.

The recording is not contrived sensationalism — it doesn't need to be. It is realism, and very close to perfection. Further, it has real musical impact. Mr. Gamba, teenager or no, is *good* at this material. The record cannot be too highly recommended.

Orchestral Masterworks of J. S. Bach. Chamber Orchestra of the Vienna State Opera, Felix Prohaska, cond. Vanguard SRV 105.

This is another of Vanguard's series of demonstration records offering complete works. Prepared under the auspices of the Bach Guild, this one contains four works: the Brandenburg Concerto No. 2 in F; the Violin Concerto No. 2 in E; the Suite No. 2 in B minor; and the Air from Suite No. 3 in D. This would be a rewarding combination on a regular issue, and on a cut-rate demonstraror it is a veritable bonanza. Vanguard's mastery of the technique of recording orchestral Bach scarcely needs mention. The bass is full and gutteral, the strings mellow and stately. The soloists are given their proper place in the small auditorium atmosphere.

"Nostalgia in Hi Fi." Golden Crest Records. CR 4002.

The term "high fidelity" as applied to this record relates strictly to the method of recording, and has nothing to do with the sound which is recorded. In fact, the sound is no higher in fi than, say, a Swiss music box — inasmuch as one of the bands is a recording of a Swiss music box.

The entire record is composed of recordings of antique musical gadgets. There are eighteen of them — music boxes, nickelodeons, organs, and the like.

Listening to this record is fascinating and, I suppose, nostalgic for people who recall the period in which these contraptions were popular. The recording appears to be faithful although, I must admit, I wouldn't know.

"Port Said." Audio Fidelity AFLP 1853.

Middle Eastern music has a strange fascination for Western ears. This record contains twelve examples of Egyptian popular music, sung by Mohammed Ey-Bakkar with a varied and sparkling accompaniment. The male vocalist, singing in an eerie manner that is unusual to us, nevertheless has a spellbinding manner. He does not, of course, sing in English; and although the titles are translated ("Hela Hope" — "Be Careful of Love"; "Geena Ghanneelak" — "I Sing of Thee"), one wonders what this sensuous voice is saying. On the other hand, the rhythmically expressive castanets and wailing instruments are sufficient to conjure up a procession of dancing images. Impeccable recording.

THE BEST OF JAZZ

by John S. Wilson

MOSE ALLISON: *Back Country Suite*
PRESTIGE 7091. $4.98.

One of the most intriguing musicians to appear on the jazz scene in a long time, Mose Allison is only superficially a modernist, with a piano style colored by strong reflections of Horace Silver's "funky" school and by suggestions of Thelonious Monk's angular dissonance. Claiming roots in basic country blues (he grew up in Tippo, Mississippi) he backs up the claim by shrewdly dipping into this earthy style both for its own values and for contributions to his more modern playing.

Allison appears to be the first jazz musician who is intimately acquainted, and frankly pleased, with both the primitive aspects of the blues and its recent extensions. This fore-and-aft knowledge has an interesting effect: his straight-out back-country blues are a shade more sophisticated than they otherwise would be, while his modern playing is strengthened by an undisguised guttiness. This dual nature comes out most clearly on a balladic blues, *You Won't Let Me Go*, on which the melodic statement of the first chorus is played in basic blues style while the second chorus is developed in the post-Silver manner.

Back Country Suite, which takes up one side of the disc, is actually only a collection of very brief — and unfocused — musical impressions. The individual pieces show off some of the more appealing aspects of his playing (*New Ground*, suggestive of that masterly country blues pianist, Joshua Altheimer, and *Train*, which travels on Silver rails) but over-all the Suite demonstrates Allison's need to extend his horizons and build imaginatively on the extremely broad foundation he has created. The other side of the disc is a mixture of ballads and blues highlighted by *One Room Country Shack*, on which Allison sings in a slight, nasal voice. This is genuine country blues even though Allison's piano is a bit more genteel and his enunciation clearer than the undiluted country minnesinger might have it. But his phrasing and emphasis are so exactly right that, in view of his position in jazz (he is currently the pianist in Stan Getz's quartet and, to judge by this disc, is on the verge of becoming a "name" in his own right), he could conceivably make a fashionable commodity of the raw country blues.

RAY CHARLES AND HIS BAND: *The Great Ray Charles*
ATLANTIC 1259. $4.98.

Temporarily deserting his highly successful trade of blues singing, Charles (who should not be confused with the Ray Charles whose vocal groups are prominent on television and records) ventures forth on this disc as a jazz pianist and leader of a small instrumental group. Jazz can stand a lot more of this. His blues-based piano style is clean, sensitive and, in its over-all sound, somewhat reminiscent of another fine pianist who spends most of his time singing, Nat Cole. His playing is always relaxed, both in tempo and feeling, and it bears traces of no particular school other than a natural affinity for the blues.

His band is a modern group (two saxophones, two trumpets, bass, drums) capable of much more than supplying anonymous backgrounds for a blues singer. With unusual perspicacity, Atlantic has allowed Charles to record with his regular collaborators rather than trying to "improve" his surroundings by throwing him in with some of the overrecorded studio men. His group is a rarity these days — a pleasant little band which plays Quincy Jones's easygoing, tightly-voiced arrangements with casual competence, making no effort to knock your ear off. The result is jazz that sticks to the aural ribs, jazz of charm and depth that wears unusually well.

THE DALER'S DANCE BAND: *Canteen Dance 1957.*
FARMINGDALE HIGH SCHOOL. $4. (By mail: $4.66 from Band Director, Farmingdale High School, Farmingdale, N.Y.)

STORYVILLE STOMPERS: *New Orleans Jazz*
TROPICANA 1204. $3.98.

These two discs have little in common musically, except that they neatly counterpose the current norm in college jazz.

To call Pomona College's Storyville Stompers the college jazz norm is possibly an injustice. They give evidence of more discipline and more vitality than are usual in college dixieland groups, and they are a shade more venturesome in going beyond the standard Eddie Condon repertory. But they have the heavy, chunky attack and

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flat sound common to routine jazz revivalists. And the fact that they have proudly (judging by the notes) pulled in a ringer to perpetrate a dreadful vocal on *Doctor Jazz* suggests that they have little more understanding of what they are trying to play than do most college groups.

The band called the Daler's is something else again. It is a full-sized, big jazz band which tackles complex arrangements in the Count Basie and Woody Herman manners and cuts them creditably. And the catch is that the members of this band are high-school kids whose ages range from fourteen to seventeen.

In comparison with a topnotch professional band, the Daler's sounds a little woolly at times, the brass does not bite as brilliantly and precisely as it might, and there are moments when the ensembles drift aimlessly. But there are also times when this high-school band blows on a level that would do any band credit. In fourteen-year-old Andy Marsala it has an alto saxophonist who moves freely through the Charlie Parker idiom and shows, on *Bernie's Tune*, that he is already developing something that is his own. Even the band's four singers have an honest, outgoing quality, despite their obvious derivations. Though no new jazz paths are being broken here, the Daler's band suggests an understanding and a capacity for growth that is quite absent from the Stompers' work. It is an awesome thing to hear teen-agers play complex jazz together as well as the Daler's do. More than that, it is the happiest possible omen for jazz in the years ahead.

Dialing Your Discs

All LP discs are recorded with treble boost and bass cut, the amount of which often varies from one manufacturer to another. To play a disc, the bass below a certain turnover frequency must be boosted, and the treble must be rolled off a certain number of decibels at 10,000 cycles. Recommended control settings to accomplish this are listed for each manufacturer. Equalizer control panel markings correspond to the following values in the table below: ROLL-OFF — 10.5: LON, FFRR. 12: AES, Old RCA. 13.7: RIAA, RCA, NARTB, ORTHOphonic. 16: NAB, LP, COL, COL LP, ORTHOcoustic. TURNOVER —400: AES, Old RCA. 500C: LP, COL, COL LP, Mod NAB, LON, FFRR. 500R: RIAA, ORTHOphonic, NARTB. 500: NAB. 630: BRS. 800: Old RCA.

All records produced under the following labels are recorded with the industry-standard RIAA curve (500R turnover; 13.7 rolloff): Angel; †Atlantic Bethlehem; Classic Editions; Clef; Composers Recordings; EMS; Epic; McIntosh; MGM; Montilla; New Jazz; Norgran; Prestige; Romany; Savoy; Walden. Labels that have used other recording curves are listed below.

RECORD LABEL	NEW		OLD
	Turnover	*Rolloff*	*Record No. or Date: Turnover, Rolloff*
Allied	500	16	
Amer. Rec. Soc.	400	12	
Arizona	500R	13.7	To 1955: 400, 12.7
Audio Fidelity	500R	13.7	No. 901-903: 500, 16
Audiophile	500	12	
Bach Guild	500R	13.7	No. 501-529: 500, 16
*Bartok	500R	13.7	No. 901-905, 308, 310, 311: 500R, 13.7 No. 906-920, 301-304, 309: 630, 16
Blue Note Jazz	500R	13.7	To 1955: 400, 12
Boston	500C	16	
*Caedmon	500R	13.7	No. 1001-1022: 630, 16
Canyon	500R	13.7	To No. C6160: 400, 12
Capitol	500R	13.7	To 1955: 400, 12.7
Capitol-Cetra	500R	13.7	To 1955: 400, 12.7
Cetra-Soria	500C	16	
Colosseum	500R	13.7	To January 1954: 500,16
*Columbia	500R	13.7	To 1955: 500C, 16
Concert Hall	500R	10.5	To 1954: 500C, 16
*Contemporary	500R	13.7	No. 3501, 2501, 2502, 2505, 2507, 2001, 2002: 400, 12. No. 2504: 500, 16
†Cook (SOOT)	500	12-15	
Coral	500	16	
Decca	500R	13.7	To November 1955: 500, 16
Elektra	500R	13.7	No. 2-15, 18-20, 24-26: 630, 16. No. 17 22: 400, 12. No. 16, 21, 23, 24: 500R, 13.7
Esoteric	500R	13.7	No. ES 500, 517, EST 5, 6: 400, 12
Folkways	500R	13.7	To 1955: 500C, 16
*Good-Time Jazz	500R	13.7	No. 1, 5-8: 500, 16. No. 3, 9-19: 400, 12
Haydn Society	500C	16	
HMV	500R	16	
Kapp	500R	13.7	No. 100-103, 1000-1001: 800, 16
Kendall	500	16	
*London, Lon. Int.	500R	13.7	To No. 846: 500C, 10.5
Lyrichord	500	16	
*Mercury	500R	13.7	To October 1954: 400, 12
Nocturne	500R	13.7	No. LP 1-3, 5, XP1-10: 400, 12
Oceanic	500C	16	
*L'Oiseau-Lyre	500R	13.7	To 1954: 500C, 10.5
*Overtone	500R	13.7	No. 1-3: 500, 16
Oxford	500C	16	
Pacific Jazz	500R	13.7	No. 1-13: 400, 12
Philharmonia	400	12	
†Polymusic	500	16	
RCA Victor	500R	13.7	To September 1952: 500 or 800, 12
Remington	500	16	
Riverside	500R	13.7	To 1955: 400, 12
Tempo	500	16	
Transradio	500C	16	
Urania	500R	13.7	No. 7059, 224, 7066, 7063, 7065, 603, 7069: 400, 12. Others: 500C, 16
Vanguard	500R	13.7	No. 411-442, 6000-6018, 7001-7011, 8061-8004: 500, 16
Vox	500R	13.7	500, 16 unless otherwise specified.
*Westminster	500R	13.7	To October 1955: 500C, 16; or if AES specified: 400, 12

*Currently re-recording old masters for RIAA curve.
†Binaural records produced on this label have no treble boost on the inside band, which should be played without any rolloff.

DON EWELL: *Music to Listen to Don Ewell By*
GOOD TIME JAZZ 12021. $4.98.

Don Ewell, who has been lending his impressive presence to other musicians' records for several years, is finally given the display he deserves on this disc. It has been producer Lester Koenig's happy notion to show him both as soloist and in a trio in the tradition of the Jelly Roll Morton trio recordings on Victor.

Ewell has absorbed much of the overall piano style of the 1920s and 1930s, but the two models who show most clearly in his playing are Earl Hines and Joe Sullivan. What he produces here is a happy, foot-tapping style, spiced with occasional decorative excursions but rarely departing from straightforward exposition. On the trio selections, Darnell Howard's rather hard-toned clarinet glides, jabs, and dances through Chicago-influenced variants of the basic New Orleans manner. It is delightfully easy, unforced music, bubbling with rhythm.

RED GARLAND TRIO: *Red Garland's Piano*
PRESTIGE 7086. $4.98.

Polished, swinging, and unpretentious performances by a pianist very much akin to Erroll Garner in feeling (although not in style) but without Garner's theatrics. Paul Chambers occasionally makes interesting use of the bass as a second voice rather than in strict support, but it is a device that he has not yet fully mastered. Most of the selections are drawn out beyond their worth.

JOHNNY GUARNIERI: *Plays Johnny Guarnieri*
GOLDEN CREST 3020. $3.98.

Long noted for his ability to play in the styles of almost any of the swing pianists, Guarnieri extends his scope here to ragtime, boogiewoogie, and some nonjazz areas. The compositions, all by Guarnieri, are strongly derivative and he finds more in them than anyone else is likely to.

SHELLY MANNE AND HIS MEN: *Vol. 5*
CONTEMPORARY 3519. $4.98.

There is ferment in process on this disc

which may not be immediately evident to one who is hearing these musicians for the first time (Manne's men are Stu Williamson, trumpet; Charlie Mariano, alto saxophone; Russ Freeman, piano; Leroy Vinnegar, bass). But, for any listener, this ferment contributes to the effectiveness of several of these pieces, particularly Bill Holman's lengthy, four-part *Quartet*. Four of the five men heard here have suddenly arrived on solid jazz ground. (The exception is Manne, who reached solid ground a long time ago and has never stopped developing.)

The "arrival," so to speak, is most marked in Mariano and Williamson, and the success of Holman's rather loosely held together *Quartet* is due largely to the new stature of these two men. Mariano, a Parker-derived altoist, is becoming definitely his own man although his debt to Parker is still plainly evident. But there is depth of feeling in his playing now that was lacking before, and he is able to step up and blow the strong, dark, blast that is the climactic height of *Tommyhawk* or to brood nostalgically through the second section of *Quartet*. Williamson, who has struck me as a diffuse, uncertain trumpet man in the past, is not only controlled and focused in the fourth section of *Quartet* but moves with an unexpectedly easy swinging sense. Vinnegar's bass work throughout the disc shows that he is approaching the sure touch of a man like Milt Hinton.

Freeman reached a plateau of sorts several years ago as a glib, fleet-fingered pianist, a precursor of what has developed into a West Coast school of hard-note piano men. He is moving beyond that now. On both *Moose the Mooche* and *Quartet* he enriches the top soil with the loam of jazz tradition.

LEON SASH QUARTET: *This Is the Jazz Accordion*
STORYVILLE 917. $4.98.

Sash is one of the growing number of musicians who are pulling the accordion well into the jazz orbit. He leans toward a strongly swinging, uncomplicated attack, using rich tonality and flowing phrasing. But equally important in the effectiveness of the Sash Quartet is Ted Robinson who plays tenor saxophone, clarinet, and flute. The teaming of tenor saxophone and accordion in both unison and contrapuntal passages gives the group a unique and appealing sound. When Robinson takes off on his own, he shows himself to be a soloist whose ideas parallel the light, mellow flow of Sash's. Both men solo skillfully, but it's their teamwork that makes this disc of more than passing interest.

ART TATUM: *An All-Star Tribute to Tatum*
AMERICAN RECORDING SOCIETY EJ 424. By subscription.

ART TATUM: *Presenting the Art Tatum Trio*
VERVE 8118. $4.98.

One of the most provocative of all jazzmen is heard on these two discs in the settings most common to him — as soloist unaccompanied, as soloist with rhythm accompaniment, and as costar with another soloist. Tatum was at his creative best when he was on his own, completely free to ring his challenging changes on any tune he came to grips with. Because of this, the unaccompanied solos which make up one side of ARS 424 are the most consistently engrossing. For the most part he has sturdy material to work with in this set and he investigates it in the inquisitive and amusing manner that is expected of him. But he is at his most intriguing when he sits down to a seemingly routine tune, *So Beats My Heart for You*, and shows that there is as much, and possibly more, in it for him as in the standards of the jazz pianist's repertory.

The difference between Tatum *solus* and Tatum in company is well illustrated on the reverse of this disc on which he shares space and time with a variety of other soloists on all but one track. Under these circumstances, he has less opportunity to become as deeply involved in his development of a tune as he can on his own. His performances lean toward bright, sparkling surface presentations. Of his costars, only Benny Carter plays with more than passing interest. Roy Eldridge's crackling trumpet is muffled behind a mute while Ben Webster is recorded with annoyingly heavy breathiness.

The trio selections on Verve 8118 fall generally between the solos and the costarring pieces. Tatum is held to stricter tempo in his trio work than he is on his own. But, by the same token, drummer Jo Jones and bassist Red Callender give his playing a stronger, more obvious pulse. Within a strict tempo framework, the trio disc is excellent and varied Tatum, ranging from a happily romping attack on *Just One of Those Things* to rich, warm developments of *Some Other Spring* and *More Than You Know*.

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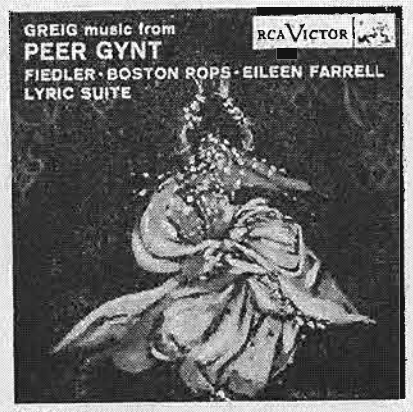

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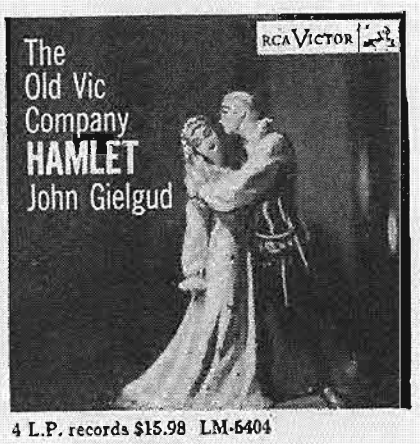

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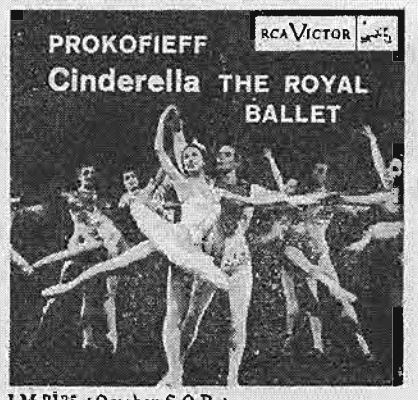

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by Nathan Broder

BACH'S KEYBOARD MUSIC

BECAUSE of the special nature of the instrument, any attempt to evaluate recordings of performances on the organ must be even more than usually subjective. Generally speaking, any good piano sounds pretty much like any other; and any normal orchestra playing a specific work will be constituted like any other playing that work, give or take a few strings. But not only are there radical differences in sound between the great families of organs — for example, between "baroque" and "symphonic" instruments — there also are important differences between instruments of the same family, since no organ is built exactly like another. In addition, each performer usually has his own ideas about registration, even if two players used the same instrument, the results would probably differ in color. In the following discussion of Bach's organ works, where two or more equally acceptable performances of a work are available (which happens not seldom), I have given preference to the one that sounds most pleasing to my own ears, though I am well aware that other listeners might choose differently and with as much justice.

Another complication in judging organ records involves not the quality but the kind of recording. The quality of organ recordings has improved enormously in recent years, and it is astonishing, in view of the tremendous acoustical problems, how often the reproduction is absolutely first-class. But one must choose between two points of view. One is that the recording should be "realistic," reproducing faithfully the sound of an organ in a church or cathedral — echoes, reverberations, and all. Not only is this supposed to give the hearer the feeling of "reality," but it is thought to represent the composer's intentions most faithfully. After all, the theory is, Bach knew a great deal about church acoustics and certainly would have taken them into account when composing. And so we have some recordings in which the sounds, after leaving the pipes, dance around merrily, looping through the vast upper spaces and mingling gaily with their newly-arriving brothers so that it is hard to tell which is which. As a practicing musician, Bach surely did know a great deal about church acoustics and he made some provision for them, but not, I think, much. Otherwise he would have written only slow chordal pieces with plenty of rests. Most of his organ works show, in their constantly moving parts, in the importance and fine detail of the inner voices, that he must have had in mind a kind of ideal enclosure in which the sound, while live and resonant, would be sharp and clear, never blurring rapid movement or obscuring contrapuntal texture. It is to this kind of recording — and fortunately there is a good deal of it — that my vote has gone when there was a choice.

In recordings of works for stringed keyboard instruments, preference has been given, other things being more or less equal, to performances on the harpsichord. Bach probably intended some of these works for clavichord, but no doubt he expected that even those would be played occasionally on the harpsichord. There is, moreover, only one LP on which a clavichord is used (see the Two-Part Inventions, S. 772-786). Performances of Bach on the piano pose a special problem. The harpsichord with stops and coupling mechanism is capable of color variety of a type impossible to achieve on a piano. The pianist, deprived of such possibilities, tries to avoid monotony in other ways, often relying on the color properties peculiar to the piano. Actually many pianistic effects were born of the Romantic school of piano composition and are inseparably associated with it in our minds. As a result the ordinary pianist's innocent attempts to beguile the listener while playing music not intended for his instrument often succeed only in evoking a feeling remote from Bach's. Rare are the pianists who somehow manage to keep interest alive without doing violence to Bach's style.

This discography does not list individual chorale preludes. Nor does it include transcriptions of organ works for other media, such as orchestra or piano. As in the discography of Bach's chamber and orchestral music (HIGH FIDELITY, May 1956), works are listed in the order presented in Schmieder's catalogue; dates of composition are also taken from Schmieder. Items in brackets indicate recordings that were not available to me. All records are single twelve-inch discs, unless otherwise stated. The second and subsequent citations of the same edition are listed in abbreviated form.

ORGAN WORKS

Before we discuss individual works, some general comments on a few collections may be found useful. The largest of these is the Archive series of eighteen discs, which present Helmut Walcha playing on the Arp Schnitger organ now in Cappel and on the smaller of the two organs at St. Jakobi in Lübeck. Both instruments seem to be ideal for Bach, and the recording is superb. (Some of these performances, with less quiet surfaces, previously had been issued in this country on the Decca label.) Equally fine are the organ — in the Church of Our Lady at Skänninge, Sweden — and the recording in Carl Weinrich's series for Westminster, of which six "volumes" are available as this is written.

In another class are two albums by Dr. Albert Schweitzer. As the recordings of E. Power Biggs show, Columbia engineers have successfully captured the sound of many different organs; one must conclude, therefore, that some peculiarity of Dr. Schweitzer's instrument, in the parish church of his home town of Gunsbach in Alsace, militates against best results in recording. Nevertheless, the sound in the second album (SL 223) is less dim and distant than in the first (SL 175); and in any case one may value the two sets for reasons other than mere beauty of sound. Despite the tonal shortcomings of the organ and despite occasional evidence that Dr. Schweitzer's technique is no longer what it once must have been, these albums together with their elaborate notes remain affecting mementoes of the great humanitarian's lifelong reverence for his favorite composer.

SONATAS (6), S. 525-530

Composed at Leipzig in the 1720s. These sonatas, says Schweitzer, are "the *Gradus ad Parnassum* for every organist. Whoever has studied them thoroughly will encounter no further difficulties in either old or modern organ-literature, having already met and conquered them all in these Sonatas." But they are, of course, far more than mere exercises for hands and feet. While they may not have the emotional power of the chorale preludes and the greatest of the preludes and fugues, their variety and superb construction make them very good listening indeed. Walcha keeps the voices sharply differentiated and the texture transparent; and the moments when the pedal is a little weak and behind time are not enough to mar the set. Germani plays well, too, but occasionally, as in the first two movements of No. 2 or the last of No. 4, the middle voice is not clear enough. The pedal of his instrument, not identified in the review set, sometimes emits indistinct rumbles. The organ at the Church of Saint Merry in Paris, which is used by Mme. Alain, has sounded better on other discs. Here, some of the pedal stops are weak and have little character; they apparently do not "speak" readily and sometimes lag behind the manuals. At the other end of the tonal spectrum Mme. Alain seems to be fond of stops that sound rather shrill; and the middle voice is sometimes too faint.

A similar difficulty obtains with the organ employed by Eggington, that of the Meaux Cathedral, whose pedal produces vague noises, among which definite pitches can be discerned only occasionally. The two Sonatas recorded by Biggs, in Boston's Symphony Hall, are very well done and recommended to anyone who wants only two of the six works. Hilliar chooses intriguing colors for the fast movements and indulges in a mild use of dotted rhythms in the Finale of his Sonata.

—Helmut Walcha. ARCHIVE ARC 3013/4. Two 12-in. $5.98 each.

—Fernando Germani. RCA VICTOR LHMV 601. Two 12-in. (This release has been discontinued, but may be available in some record shops.)

—Marie-Claire Alain. HAYDN SOCIETY HSL 119/20 (with S. 562, 572, 590). Two 12-in. $5.95 each.

—(S. 525-528 only) John Eggington. OISEAU-LYRE OL 50123. $4.98.

—(S. 525, 526 only) E. Power Biggs. COLUMBIA ML 4285 (with S. 541, 544). $3.98.

—(S. 525 only) George Faxon. AEOLIAN-SKINNER "The King of Instruments" Vol. II (with S. 593 1st movement, 646, 648, 650 and works by Davies, Alain, Langlais, Sowerby). $5.95.

—(S. 528 only) Edgar Hilliar. AEOLIAN-SKINNER "The King of Instruments" Vol. IV (with a chorale prelude and works by Pachelbel, Loiellet, Couperin, Dupré, Arne). $5.95.

PRELUDE AND FUGUE IN C, S. 531

Weimar, about 1709, or possibly earlier at Lüneburg. There is more majesty in Schweitzer's Prelude than in any of the others, even though the sounds of his instrument are occasionally blurred. Walcha takes the Prelude much more quickly and it consequently loses its pomp. The Fugue is a lightfooted, graceful work under his hands. With Heiller, the Prelude, though taken at about the same tempo as Schweitzer's, sounds growly; and the Fugue, while well played, is not as transparent in texture as with Walcha. Weinrich's performance for Westminster is rather metronomic and favors a registration that sounds unpleasantly piercing to me. The sound of his M-G-M recording, on the other hand, is a little distant and by no means precise as to pitch. There is, consequently, no all-round first-class recording of this work.

—Walcha. ARCHIVE ARC 3015 (with S. 532, 533, 535, 537). $5.98.

—Anton Heiller. EPIC LC 3261 (with S. 582, 768). $3.98.

—Carl Weinrich. WESTMINSTER XWN 18499 (with S. 536, 539, 541, 543). $3.98.

—Weinrich. M-G-M E 3015 (with S. 536, 543, and transcriptions by Segovia). $3.98.

—(Prelude only) Albert Schweitzer. COLUMBIA SL 175 (with S. 532, 542, 543, 564, 588, 6 chorale preludes, and Mendelssohn: Sonata No. 6). Three 12-in. $11.98.

PRELUDE AND FUGUE IN D, S. 532

Weimar, about 1709 or possibly earlier in Arnstadt. An elaborate work, whose Prelude has the slow-fast-slow shape of the French overture and whose Fugue is a long working-out of a jolly theme that begins by chasing its tail. From the musical standpoint, Mme. Alain does as good a job as any, displaying a nice sense of color, which makes itself felt despite some surface noise and the shrillness of some of her stops. Walcha is a little less interesting but better recorded. Heiller's Prelude is darker in color and not as clear in texture as Walcha's or Alain's. There is nothing particularly distinguished about any of the other versions. Fox's performance is that of a virtuoso, but the wrong sort: he changes registration frequently but his colors are seldom subtle, and for some reason he blasts out the Adagio at the end of the Prelude in violent contrast to what has gone before.

—Alain. HAYDN SOCIETY HSL 148 (with S. 541, 544, 545, 548). $5.95.

—Walcha. ARCHIVE ARC 3015 (see S. 531).

—Heiller. EPIC LC 3132 (with S. 543, 565, 566, 589). $3.98.

—Weinrich. WESTMINSTER XWN 18427 (with S. 533, 534, 544). $3.98.

—Marilyn Mason. AEOLIAN-SKINNER "The King of Instruments" Vol. VII (with works by Walther, Kerll, Pachelbel, Crandell, Copland, Wright). $5.95.

—Phillip Steinhaus. BOSTON B 700 (with S. 564; Reger: *Variations and Fugue on an Original Theme*, Op. 73). $4.98.

—Jeanne Demessieux. LONDON LL 319 (with S. 565; Franck: *Pastorale*; *Fantaisie in A*). $3.98.

—Virgil Fox. RCA VICTOR LM 1963 (with S. 565, 577, chorale preludes etc.). $3.98.

—(Prelude only) Schweitzer. COLUMBIA SL 175 (see S. 531).

—(Fugue only) Eggington. OISEAU-LYRE OL 50012 (with S. 541, 548, 564, 649). $4.98.

PRELUDE AND FUGUE IN E MINOR, S. 533

Weimar, about 1709 or perhaps earlier in Arnstadt. Sometimes known as the "little E minor," this short work has power and pathos. Walcha begins the Prelude rather fast but then slows down, a treatment that seems to suit the improvisatory character of the opening section. Schweitzer and Cochereau take the whole work very slowly. The sound of the latter's instrument (the organ at Notre Dame in Paris) is poorly recorded. As played by both Weinrich and Nowakowski, the Prelude sounds metronomic. In Coke-Jephcott's solemn performance of the Fugue and Nowakowski's rather matter-of-fact one the voices are not always clearly distinguishable. (The Schmieder numbers on the 10-inch Telefunken disc are confused; on the 12-inch, this work is wrongly labeled S. 548.) Commette's version is marred by excessive reverberation.

—Walcha. ARCHIVE ARC 3015 (see S. 531).

—Schweitzer. COLUMBIA SSL 223 (with S. 534, 536, 538, 541, 543, 544, 546, 547, 565, 582, 6 chorale preludes). Three 12-in. $11.98.

—Weinrich. WESTMINSTER XWN 18427 (see S. 532).

—Norman Coke-Jephcott. AEOLIAN-SKINNER "The King of Instruments" Vol. VIII (with 2 chorale preludes and works by Purcell, Vierne, Coke-Jephcott). $5.95.

—Anton Nowakowski. TELEFUNKEN LGM 65030 (with S. 572, 582). 10-in. $3.98. Or LGX 66059 (with S. 544, 545, 565, 572, 582). $4.98.

—Pierre Cochereau. OISEAU-LYRE OL 50152 (with S. 544, 547). $4.98.

—Edouard Commette. ANGEL 35368

(with S. 542, 543, 546, 562, 565, 2 chorale preludes). $4.98 (or $3.48).

PRELUDE AND FUGUE IN F MINOR, S. 534
Weimar, about 1716. All three performances of this rather uneven work have their merits and defects. Schweitzer's is perhaps the most eloquent, even though it drags in spots and even though there are moments when either the player's fingers or the instrument's pipes do not respond efficiently. His registration during much of the Fugue is somber, no doubt in accordance with his view of the music as expressing suffering. Walcha and Weinrich take a somewhat brighter view; no one, however, can do much about making the dull spots in the Fugue meaningful. Weinrich's Prelude is just a shade faster than Walcha's and by that much the more matter-of-fact.
—Schweitzer. COLUMBIA 5SL 223 (see S. 533).
—Walcha. ARCHIVE ARC 3020 (with S. 564, 566, 572). $5.98.
—Weinrich. WESTMINSTER XWN 18427 (see S. 532).
—[Alain. HAYDN SOCIETY 159 (with S. 536, 543, 547, 582). $5.95.]

PRELUDE AND FUGUE IN G MINOR, S. 535
Weimar, about 1709, or perhaps earlier in Arnstadt. Surprisingly, there is only one recording of this fine early work. Walcha plays the improvisatory Prelude sensitively and renders bright and clear the interestingly worked-out Fugue.
—Walcha. ARCHIVE ARC 3015 (see S. 531).

PRELUDE AND FUGUE IN A, S. 536
Weimar, about 1716. Schweitzer's Prelude seems too slow, but the pace at which he takes the unusually lyric Fugue gives it the calm serenity that he believes Bach wished to express. The others all play both the Prelude and the Fugue more quickly. The result is a gentle swing that brings the Prelude to life, and some loss of tranquility but none of gladness of spirit in the Fugue. The sound of Litaize's instrument is a little blurred, but he performs the Fugue tenderly. The choice, it seems to me, lies among Weinrich, Walcha, and Viderø, and since there is not much difference in the interpretation, the determining element may be registration and quality of instrument. The unidentified organ used by Weinrich on M-G-M sounds rather harsh compared to the other three instruments in question, and to me the colors employed by Walcha and Weinrich on Westminster are the loveliest.
—Walcha. ARCHIVE ARC 3016 (with S. 538-540). $5.98.
—Weinrich. WESTMINSTER XWN 18499 (see S. 531).
—Finn Viderø. HAYDN SOCIETY HSL 128 (with S. 544, 572, 590). $5.95.
—Weinrich. M-G-M E 3015 (see S. 531).
—Schweitzer. COLUMBIA 5SL 223 (see S. 533).
—Gaston Litaize. LONDON DTL 93037 (with S. 552, 565, 582). $3.98.
—[Alain. HAYDN SOCIETY 159 (see S. 534).]

PRELUDE (FANTASY) AND FUGUE IN C MINOR, S. 537
Weimar, about 1716. Both artists do well with the brooding, contemplative Prelude but neither succeeds in making the Fugue sound shorter than it is. Marchal's instrument, the organ at Saint-Eustache in Paris, is recorded somewhat dimly, and details of the counterpoint are obscured.
—Walcha. ARCHIVE ARC 3015 (see S. 531).
—André Marchal. LONDON DTL 93056 (with S. 542, 544, 546). $3.98.

PRELUDE (TOCCATA) AND FUGUE ("DORIAN"), S. 538
Leipzig, between 1727 and 1736, if not earlier in Cöthen (the Fugue may have been written about 1716 in Weimar). The majestic grandeur of this monumental work is well conveyed by the first three organists. Schweitzer's Prelude again seems overdeliberate. It's a tossup between Weinrich and Walcha, with my vote going to the former on the basis of his registration. Heiller is not much better than routine here.
—Weinrich. WESTMINSTER WN 18148 (with S. 566, 588, 589). $3.98.
—Walcha. ARCHIVE ARC 3016 (see S. 536).
—Schweitzer. COLUMBIA 5SL 223 (see S. 533).
—Heiller. EPIC LC 3367 (with S. 540, 562, 569). $3.98.
—(Toccata only) Alec Wyton. AEOLIAN-SKINNER "The King of Instruments" Vol. VI (with works by Sweelinck, Stanley, Sowerby, Whitlock, Britten, Howells). $5.95.

PRELUDE AND FUGUE IN D MINOR, S. 539
Leipzig, 1724 or 1725. The grave Prelude is beautifully played by Weinrich and the Fugue, which is based on the Fugue in the G minor sonata for unaccompanied violin, is neatly done by both artists.
—Weinrich. WESTMINSTER XWN 18499 (see S. 531).
—(Fugue only) Walcha. ARCHIVE ARC 3016 (see S. 536).

PRELUDE (TOCCATA) AND FUGUE IN F, S. 540
The Fugue: Weimar, about 1716; the Toccata: apparently later, in Cöthen. Another one of the giant masterworks. The Toccata begins with a pedalpoint that lasts for fifty-four measures, and soon afterwards there is another one virtually as long. The tensions that build up over these sustained tones are more effectively conveyed by Walcha and Weinrich than by Biggs, whose tempo is a little faster than theirs and whose pedal tones are a little softer. As between the first two, there is little to choose. Both the Archive and the regular Westminster disc are very well recorded, but the LAB version of the same performance by Weinrich is even clearer and brighter. My own choice here, however, is Walcha, mainly because his Fugue is less deliberate than Weinrich's. Heiller's performance of the Toccata is acceptable but in the Fugue the lines are blurred.
—Walcha. ARCHIVE ARC 3016 (see S. 536).
—Weinrich. WESTMINSTER W-LAB 7023 (with S. 565, 635, 679). $7.50. Or XWN 18260 (with S. 564, 565, 582). $3.98.
—Heiller. EPIC LC 3367 (see S. 538).
—(Toccata only) Biggs. COLUMBIA ML 4097 (with S. 542, 552, 680). $3.98.

PRELUDE AND FUGUE IN G, S. 541
Leipzig, 1724 or 1725. "Over this Prelude and Fugue," wrote Widor and Schweitzer in their edition of it, "something like a sunny sky seems to be spread. They are eloquent with a great, serene confidence that banishes care from troubled hearts." The most vital readings are those by Biggs, Alain, and Walcha; but Walcha's Fugue is rather pedestrian and Alain's pedal sometimes lags slightly behind, which leaves Biggs. Weinrich does not sound inspired by anything in this work. Eggington suffers from too much reverberation. Prince-Joseph plays on a pedal harpsichord, which would have been more interesting if he had performed a work that Bach wrote for that instrument instead of one that is plainly indicated in Bach's manuscript as for organ.
—Biggs. COLUMBIA ML 4285 (see S. 525).
—Walcha. ARCHIVE ARC 3017 (with S. 542, 543, 562). $5.98.
—Alain. HAYDN SOCIETY HSL 148 (see S. 532).
—Schweitzer. COLUMBIA 5SL 223 (see S. 533).
—Weinrich. WESTMINSTER XWN 18499 (see S. 531).
—Eggington. OISEAU-LYRE OL 50012 (see S. 532).
—(Prelude only) Bruce Prince-Joseph, harpsichord. COOK 11312 (with S. 593; choral works by various composers). $4.98.

PRELUDE (FANTASY) AND FUGUE IN G MINOR, S. 542
Cöthen, about 1720. This is the "great" G minor Fantasy and Fugue, one of the most popular of the organ works. The most dramatic treatment of the Fantasy is Biggs's, but the speed with which he plays it renders some passages trivial, and he races through the Fugue. At the opposite pole, as regards tempo, is Schweitzer, who takes both movements broadly. His Fantasy is rather regular and his Fugue somewhat labored, but each builds up power and momentum. Unfortunately, the lines are often blurred in this recording. They are sometimes indistinct in the Marchal disc, too. The tone of that artist's instrument is not very attractive here, and there is a lack of spontaneity in the playing. The Nunez disc, recorded on a Mexican organ said to be the largest in this hemisphere, is remarkable chiefly for its effect of cathedral spaciousness. The version that seems to me to sound best and wear best is Walcha's. Next I have put Richter's, similar in general type to Schweitzer's but more clearly recorded.
—Walcha. ARCHIVE ARC 3017 (see S. 541).
—Karl Richter. LONDON LL 1175 (with S. 548, 3 chorale preludes). $3.98.
—Schweitzer. COLUMBIA SL 175 (see S. 531).
—Marchal. LONDON DTL 93056 (see S. 537).
—Biggs. COLUMBIA ML 4097 (see S. 540).
—Alfonso Vega Nunez. COOK 1056 (with S. 578, 593). $3.98.
—(Fantasy only) Commette. ANGEL 35368 (see S. 533).
—[Cochereau. HAYDN SOCIETY 129 (with S. 552, 582). $5.95.]
—[William Watkins. MCINTOSH 106

(with works by Handel, Dupré, *et al.*). $4.98.]
—[Harold Ash. MCINTOSH MC 1005 (with works by Bingham, Zechiel, Langlais, Liszt). $4.98.]

PRELUDE AND FUGUE IN A MINOR, S. 543
Prelude: Weimar, about 1709; Fugue: original version, for clavier, in Cöthen; revision, for organ, in Leipzig. A powerful and lively work, whose Prelude has passages of almost romantic intensity and whose Fugue proceeds with inexorable drive. These qualities are best brought out, it seems to me, by Heitmann and Weinrich on M-G-M. It is difficult to choose between them. Schweitzer's Prelude is expressive, but in his Fugue the inner voices do not come through clearly. Walcha, Heiller, Demessieux, and Weinrich on Westminster are all acceptable but not outstanding. The main point of interest in Coci's performance is that she plays quite tastefully, on the giant organ at West Point.
—Fritz Heitmann. TELEFUNKEN LGX 66037 (with S. 565 and works by various composers: "Organ Music from Sweelinck to Hindemith"). Two 12-in. $9.96.
—Weinrich. M-G-M E 3015 (see S. 531).
—Schweitzer. COLUMBIA SSL 223 (see S. 533).
—Walcha. ARCHIVE ARC 3017 (see S. 541).
—Weinrich. WESTMINSTER XWN 18499 (see S. 531).
—Heiller. EPIC LC 3132 (see S. 532).
—Demessieux. LONDON LL 946 (with S. 564, 577, 599, 626, 641). $3.98.
—Claire Coci. VOX DL 210 (with S. 565, 582, 659). $4.98.
—(Prelude only) Commette. ANGEL 35368 (see S. 533).
—(Fugue only) Schweitzer. COLUMBIA SL 175 (see S. 531).
—[Alain. HAYDN SOCIETY 159 (see S. 534).]

PRELUDE AND FUGUE IN B MINOR, S. 544
Leipzig, between 1727 and 1736. One of the great masterworks, with a magnificent Prelude in which the melody shoots forth proliferations in all the voices, and a powerful Fugue. Several good performances here. For fire and authority in the Prelude, Schweitzer seems to take first place, but he does not help Bach in the middle part of the Fugue. There, where the composer marks time for a while, Schweitzer employs weak, dull stops. Viderø's Prelude also has more vitality than his Fugue but the over-all effect is fairly consistent. So is that of Walcha's performance, where interest is sustained in the middle portion of the Fugue by a nice choice of registration. Biggs's version is on a par with these. There is in fact no very important difference in quality among the first four performances listed below. The others have no special distinction, and in all of these except the Weinrich there are defects of one sort or another in the instrument or its recording.
—Viderø. HAYDN SOCIETY HSL 128 (see S. 536).
—Walcha. ARCHIVE ARC 3018 (with S. 545, 546, 550). $5.98.
—Biggs. COLUMBIA ML 4285 (see S. 525).
—Schweitzer. COLUMBIA SSL 223 (see S. 533).
—Weinrich. WESTMINSTER XWN 18427 (see S. 532).
—Alain. HAYDN SOCIETY 148 (see S. 532).
—Nowakowski. TELEFUNKEN LGX 66059 (see S. 533).
—Marchal. LONDON DTL 93056 (see S. 537).
—Cochereau. OISEAU-LYRE OL 50125 (see S. 533).

PRELUDE AND FUGUE IN C, S. 545
Prelude: Leipzig, about 1730; Fugue: earlier, towards the end of the Weimar period. White's small American organ, Nowakowski's Danish one, and Alain's French one sound coarse and unclear compared to the Schnitger played by Walcha.
—Walcha. ARCHIVE ARC 3018 (see S. 544).
—Ernest White. MOLLER "Music for the Organ" Vol. 2 (with works by Vierne, Reger, Widor, Dandrieu, Karg-Elert, Pachelbel, Schroeder). $5.95.
—Alain. HAYDN SOCIETY HSL 148 (see S. 532).
—Nowakowski. TELEFUNKEN LGX 66059 (see S. 533).

PRELUDE AND FUGUE IN C MINOR, S. 546
Prelude: Leipzig, about 1730; Fugue: Weimar, about 1716. A big, symphonic Prelude and a somewhat less imposing Fugue. Walcha's is the preferred version here, especially for the transparency of the counterpoint, unmatched in other recordings of this work.
—Walcha. ARCHIVE ARC 3018 (see S. 544).
—Schweitzer. COLUMBIA SSL 223 (see S. 533).
—Marchal. LONDON DTL 93056 (see S. 537).
—(Prelude only) Commette. ANGEL 35368 (see S. 533).

PRELUDE AND FUGUE IN C, S. 547
Leipzig, about 1744. Whether one prefers the Schweitzer or the Walcha will depend on whether one agrees with the former's conception of the Prelude as "the vision of a crowd moving along in solemn jubilation," or the latter's interpretation of it as a kind of pastorale, with the gentle swing characteristic of that genre. My own preference is for Walcha, chiefly because of the lovelier sound of the Fugue in his recording. Cochereau's Fugue is sluggish, and the sound of his instrument comparatively harsh.
—Walcha. ARCHIVE ARC 3019 (with S. 548, 551, 565). $5.98.
—Schweitzer. COLUMBIA SSL 223 (see S. 533).
—Cochereau. OISEAU-LYRE OL 50125 (see S. 533).
—[Alain. HAYDN SOCIETY 159 (see S. 534).]

PRELUDE AND FUGUE IN E MINOR, S. 548
Leipzig, between 1727 and 1736. Another of the gigantic pairs. The Prelude is long but crammed with interesting passages. The mighty Fugue, sometimes called the "Wedge" from the shape of its subject, is even longer, and of a rather unusual form for a fugue, in that the third of its three sections is a repetition of the first. Walcha is far out in front here, since the Richter is dull, the Alain recording is marred by her use of coarse-toned pedal stops in the Prelude, and the Eggington reverberation frequently dissolves the music into a whirring mixture of sounds.
—Walcha. ARCHIVE ARC 3019 (see S. 547).
—Richter. LONDON LL 1175 (see S. 542).
—Eggington. OISEAU-LYRE OL 50012 (see S. 532).
—Alain. HAYDN SOCIETY HSL 148 (see S. 532).

PRELUDE AND FUGUE IN G, S. 550
Weimar, about 1709, if not earlier at Arnstadt. The Prelude is a cheerful composition of no great depth; the Fugue starts out merrily too, but goes on for quite a while after the young Bach has squeezed all the juice out of it.
—Walcha. ARCHIVE ARC 3018 (see S. 544).

PRELUDE AND FUGUE IN A MINOR, S. 551
Arnstadt, before 1706, or possibly Lüneburg, 1700–1703. An early work not very well unified but containing some interesting and expressive material.
—Walcha. ARCHIVE ARC 3019 (see S. 547).

PRELUDE AND FUGUE IN E FLAT, S. 552
Published 1739. It is unlikely that Bach intended these two great works to be played as a pair. The Prelude introduces that wonderful collection of compositions on the chorale, Part III of the *Clavierübung* (see below under S. 669-689), and the Fugue (known as *St. Anne's* in England) rounds it off. Two sturdier pillars would be hard to find. Unfortunately none of the recordings is completely satisfactory. The Biggs performance is a strong one, but there are passages that are nothing but confusion. Perhaps the registrations chosen were not the clearest for recording purposes, or possibly the engineers could not catch the sounds clearly. The Weinrich Prelude lacks tension. Litaize, in an attempt to achieve monumentality in the Prelude, succeeds only in producing coarse, bloated noises among which the ear struggles to discern definite pitches. Walcha sacrifices monumentality in the Prelude for rhythmic verve, but in the middle section employs some of the wheezier stops in his otherwise fine old instrument.
—Walcha. Prelude: ARCHIVE ARC 3022 (with chorale preludes). $5.98. Fugue: ARCHIVE ARC 3024 (with chorale preludes). $5.98.
—Weinrich. WESTMINSTER WN 2205 (with S. 669-689). Two 12-in. $7.95.
—Biggs. COLUMBIA ML 4097 (see S. 540).
—Litaize. LONDON DTL 93037 (see S. 536).
—[Cochereau. HAYDN SOCIETY 129 (see S. 542).]

LITTLE PRELUDES AND FUGUES (8), S. 553-560
Weimar, before 1710. Biggs plays with his customary dexterity and rhythmic liveliness, though some listeners may find his invariable retards and holding of final chords rather excessive. Each piece is played on a different European organ (five in Germany and one each in Austria, Holland, and Alsace) and Columbia's engi-

neers have had considerable success in capturing the sound of the various instruments with clarity and realism.
—Biggs. COLUMBIA ML 5078 (with S. 572). $3.98.

FANTASY IN C MINOR, S. 562
Weimar, between 1712 and 1716, if not later at Cöthen. An expressive work whose pathos is well conveyed by Commette, *doyen* of French organists, employing a nineteenth-century organ, and Walcha, playing the Schnitger at Cappel. Alain is handicapped by the sound of her instrument here. In the Heiller there are passages where it is hard to hear the top voices.
—Walcha. ARCHIVE ARC 3017 (see S. 541).
—Commette. ANGEL 35368 (see S. 533).
—Alain. HAYDN SOCIETY HSL 120 (see S. 525-530).
—Heiller. EPIC LC 3367 (see S. 538).

TOCCATA, ALLEGRO, AND FUGUE IN C, S. 564
Weimar, about 1709. The Biggs stands out above all the others. His Toccata has pert humor and a good deal of fantasy; his Adagio is properly grave but not dull; his Fugue is a virtuoso accomplishment, full of *brio*. Acceptable performances are given by Weinrich, who chooses a rather clanky stop for the melody of the Adagio and whose Fugue could do with a little more snap, and by Walcha, whose Toccata, after the pedal solo, is somewhat too brisk. The others have their good points but are not recommended because of various weaknesses in performance or recording.
—Biggs. COLUMBIA ML 4284 (with S. 645-650). $3.98.
—Weinrich. WESTMINSTER W-LAB 7047 (with S. 582). $7.50. Or WESTMINSTER XWN 18260 (see S. 540).
—Walcha. ARCHIVE ARC 3020 (see S. 534).
—Schweitzer. COLUMBIA SL 175 (see S. 531).
—Demessieux. LONDON LL 946 (see S. 543).
—Eggington. OISEAU-LYRE OL 50012 (see S. 532).
—Steinhaus. BOSTON B 1700 (see S. 532).
—Feike Asma. EPIC LC 3025 (with S. 582, chorale preludes; Handel: *Basso ostinato* from Concerto in G minor). $3.98.

TOCCATA AND FUGUE IN D MINOR, S. 565
Weimar, about 1709, or possibly earlier in Arnstadt. This most popular of Bach's organ works was written as a display piece. The extraordinary effectiveness of the Toccata has made it a favorite with the virtuosos, and there is not a really bad performance in the list. So well do the first five organists listed below play that it is impossible to evaluate their performances by the usual criteria. Instead, the reader will have to make his choice on the basis of the instrument used, other works included on the disc, price, or something of that sort. If hi-fi is his chief interest, he will find the greatest extremes of dynamics captured by Cook in the Foort recording. For me, the fi is quite hi enough in the better performance by Weinrich on the Westminster Laboratory record. The choice of organs is even greater than is implied by the number of editions. E. P. Biggs on Columbia 5032 performs the Toccata alone on thirteen European instruments and the Toccata and Fugue on a fourteenth. Specifications of all fourteen are given. This disc should be of special interest to organists. There seems to be no point in discussing the failings of the last ten performances; in most of them, as has been indicated, the weaknesses are minor.
—Weinrich. WESTMINSTER W-LAB 7023 or XWN 18260 (see S. 540).
—Biggs. COLUMBIA ML 4500 (with S. 578, 582, 596, App. 90). $3.98.
—Walcha. ARCHIVE ARC 3019 (see S. 547).
—Heiller. EPIC LC 3132 (see S. 532).
—Heitmann. TELEFUNKEN LGX 66038 (see S. 543).
—Schweitzer. COLUMBIA SSL 223 (see S. 533).
—Commette. ANGEL 35368 (see S. 533).
—Richter. LONDON LL 1174 (with S. 582, chorale prelude; Liszt: Prelude and Fugue on BACH). $3.98.
—Fox. RCA VICTOR LM 1963 (see S. 532).
—Nowakowski. TELEFUNKEN LGX 66059 (see S. 533).
—Litaize. LONDON DTL 93037 (see S. 536).
—Coci. VOX DL 210 (see S. 543).
—Demessieux. LONDON LL 319 (see S. 532).
—Reginald Foort. COOK 10545 (with works by Boellmann, Dubois, Handel, Reubke). $4.98.
—Biggs. COLUMBIA ML 5032. $3.98.
—(Toccata only) Biggs. COLUMBIA SL 219 (with works by Buxtehude, Purcell, Sweelinck, Pachelbel). Two 12-in. $7.98.

TOCCATA IN E, S. 566
Arnstadt, about 1707. One of the less interesting works, with an undistinguished first section and a dull fugue on a long and unadventurous subject. A second fugue is somewhat better, but by no means up to Bach's highest standard. Weinrich is clearer than Heiller and not so ponderous in the first section. Walcha, strangely, plays only the first two of the four sections.
—Weinrich. WESTMINSTER WN 14148 (see S. 538).
—Heiller. EPIC LC 3132 (see S. 532).
—Walcha. ARCHIVE ARC 3020 (see S. 534).

PRELUDE IN A MINOR, S. 569
Weimar, about 1709 or possibly earlier, in Arnstadt. A mechanically constructed piece of no great interest.
—Heiller. EPIC LC 3367 (see S. 538).

FANTASY IN G, S. 572
Arnstadt, 1705–06, if not later in Weimar. The lordly stride of a central section for five voices (*Gravement*) is flanked by improvisational sections. The choice here, I think, is between Viderø and Walcha, depending upon whether one takes the marking of the opening, "*Très vitement*," seriously, as Viderø does, or agrees with Schweitzer, as Walcha seems to, that it is not to be observed too strictly. The Heitmann is a good performance, too; the only drawback there is the absence of bands between pieces on the disc. Alain is acceptable. Nowakowski has a thick, heavy registration in the *Gravement*. Biggs, for once, is badly recorded: the piece is a blur (not so the others on the same disc, however).
—Viderø. HAYDN SOCIETY HSL 128 (see S. 536).
—Walcha. ARCHIVE ARC 3020 (see S. 534).
—Heitmann. TELEFUNKEN LGX 66009 (with S. 590, 769; works by Böhm, Walther, Buxtehude). $4.98.
—Alain. HAYDN SOCIETY HSL 120 (see S. 525-530).
—Nowakowski. TELEFUNKEN LGM 65030 or LGX 66059 (see S. 533).
—Biggs. COLUMBIA ML 5078 (see S. 553-560).

FUGUE IN G, S. 577
Arnstadt, 1705–06. A jolly fugue in the rhythm of a gigue. Fox's virtuoso performance surpasses the other in clarity as well as speed.
—Fox. RCA VICTOR LM 1963 (see S. 532).
—Demessieux. LONDON LL 946 (see S. 543).

FUGUE IN G MINOR, S. 578
Weimar, about 1709, or possibly earlier in Arnstadt. This lovely Fugue is sometimes called "the little G minor" to distinguish it from S. 542. Biggs's performance is a model of clarity and good taste. So is Walcha's but his tempo seems a shade slow. Nunez races through the work and everything sounds blurred.
—Biggs. COLUMBIA ML 4500 (see S. 565).
—Walcha. ARCHIVE ARC 3021 (with S. 582, 588-590). $5.98.
—Nunez. COOK 1056 (see S. 542).

PASSACAGLIA AND FUGUE IN C MINOR, S. 582
Weimar, 1716–17, if not later in Cöthen. Of this famous masterpiece there are no completely impressive recordings but several satisfactory ones. Weinrich (in one of the Westminster pressings), Walcha, Biggs, and Litaize all perform well and are recorded well enough, and the choice among them boils down to a preference among organs or among registration schemes. The recording of Schweitzer suffers from the usual lack of sharpness, and there is distortion in the final variation. Richter is rather metronomic and soporific. Heiller's performance differs from most in that it begins strongly, thus detracting somewhat from the power of the later climaxes. Asma has moments of blur, his last variations sound coarse, and he maintains a high dynamic level going into the Fugue, which consequently remains unrelievedly loud. By changing registration too frequently Nowakowski gives an impression of fussiness. Miss Coci, on the other hand, even though she has some 900 stops to draw on (in the West Point organ), exercises remarkable restraint in that respect. She does, however, feel impelled to repeat part of the last measure of the last variation.
—Weinrich. WESTMINSTER W-LAB 7047 (see S. 564) or XWN 18260 (see S. 540).
—Walcha. ARCHIVE ARC 3021 (see S. 578).
—Biggs. COLUMBIA ML 4500 (see S. 565).

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—Heiller. EPIC LC 3261 (see S. 531).
—Asma. EPIC LC 3025 (see S. 564).
—Coci. VOX DL 210 (see S. 543).
—Richter. LONDON LL 1174 (see S. 565).
—Nowakowski. TELEFUNKEN LGM 65030 or LGX 66059 (see S. 533).
—[Alain. HAYDN SOCIETY 159 (see S. 534).]
—[Cochereau. HAYDN SOCIETY 129 (see S. 542).]

CANZONA IN D MINOR, S. 588
Weimar, about 1709. This richly melancholy, chromatic piece sounds most affecting, it seems to me, under the hands of Walcha, although the other two performances are unexceptionable.
—Walcha. ARCHIVE ARC 3021 (see S. 578).
—Weinrich. WESTMINSTER WN 18148 (see S. 538).
—Schweitzer. COLUMBIA SL 175 (see S. 531).

ALLABREVE IN D, S. 589
Weimar, about 1709. A work that is rather low in expressivity, though quite high in contrapuntal skill. Walcha treats it as a contemplative piece; Weinrich and Heiller attempt to make a majestic thing of it and choose registrations of unrelieved heaviness.
—Walcha. ARCHIVE ARC 3021 (see S. 578).
—Weinrich. WESTMINSTER WN 18148 (see S. 538).
—Heiller. EPIC LC 3132 (see S. 532).

PASTORALE IN F, S. 590
Arnstadt, between 1703 and 1707, or possibly later in Weimar. A charming set of four pieces, of which only the first is a pastorale. Perhaps the best all-round version is Heitmann's even though his instrument is less than perfect. Unfortunately, one has to know the music to find it on this Telefunken disc, which has no visible separation between compositions. The other performances are good too, but Viderø's first movement is rather darkly colored, Walcha's third sounds a little too fluty, and in the Pastorale proper one can barely hear the music played on the manuals in the Alain recording.
—Heitmann. TELEFUNKEN LGX 66009 (see S. 572).
—Viderø. HAYDN SOCIETY HSL 128 (see S. 536).
—Walcha. ARCHIVE ARC 3021 (see S. 578).
—Alain. HAYDN SOCIETY HSL 120 (see S. 525-530).

CONCERTO AFTER VIVALDI, IN A MINOR, S. 593
Weimar, between 1708 and 1717; based on Vivaldi's Op. III, No. 8. The Weinrich recording is not ideal — among other things, the thumping of keys can be plainly heard in the Adagio and beginning of the finale — but it has no competition. There is much reverberation in "tutti" passages of the Nunez, and the finale is lacking. The Prince-Joseph disc is interesting only because it presents a pedal harpsichord.
—Weinrich. M-G-M E 3021 (see S. 582).
—Nunez. COOK 1056 (see S. 542).
—Prince-Joseph. COOK 11312 (see S. 541).

CONCERTO AFTER VIVALDI, IN D MINOR, S. 596
Weimar, between 1708 and 1717; based on Vivaldi's Op. III, No. 11. The fine Largo is especially effective in this performance.
—Biggs. COLUMBIA ML 4500 (see S. 565).

ORGELBUECHLEIN, S. 599-644
Partly at Weimar, 1708–1717, partly at Cöthen, 1717–1723. The *Little Organ Book*, which may have been written for Wilhelm Friedemann Bach, is a collection of forty-five settings of chorale melodies grouped mostly according to the liturgical seasons. Most of them are quite short. All of them repay careful listening and study, for Bach loved the old tunes and these brief settings are the quintessence of their meaning for him. In order to grasp this meaning fully, it is necessary, as Schweitzer has pointed out, that we know what each chorale is about. In this respect Biggs's notes for his own album are most helpful; they not only discuss each work individually but include the score of the whole *Orgelbüchlein*. His performance in general is as penetrating and as poetic as any of the others, and in some preludes more so. I would therefore not hesitate to put his set at the head of my list if it were not for one peculiarity. In this album each of Bach's settings is preceded by a playing of the chorale simply, but fully, harmonized. The impact of Bach's wonderful setting is thus weakened: its principal melody and basic harmonies have already been heard; and instead of being an independent little poem, it becomes a mere variation. The other three performances are all generally satisfactory, and the choice among them is again mostly a matter of instrument and registration. Both Viderø and Weinrich supply a list of their registrations for each chorale prelude.
—Walcha. ARCHIVE ARC 3025/6. Two 12-in. $5.98 each.
—Weinrich. WESTMINSTER WN 2203. Two 12-in. $7.95.
—Viderø. HAYDN SOCIETY HSL D. Two 12-in. $11.90.
—Biggs. COLUMBIA KLS 227. Three 12-in. $17.98.

SIX CHORALES OF VARIOUS SORTS ("SCHUEBLER"), S. 645-650
Published by J. G. Schübler in 1746. Five of these settings are transcribed by Bach from cantatas of his. All six are magnificent examples of his skill at twining freely invented melodies around the trunks of sturdy old chorales. Once more, as in the *Orgelbüchlein*, Biggs's performance would have been completely satisfactory if he had not prefaced each piece by a richly harmonized version of the chorale. This is of little use as a mnemonic device here: Bach always splits up the chorale into its constituent phrases. On the other hand, Biggs (like Walcha and Weinrich) is always careful to make the chorale phrases, when they do appear, stand out clearly, so that

his preliminary statement of the chorale is not only confusing but superfluous. How much better it would have been if he had been content to print the chorale melody in the notes, so that one could follow it while listening to Bach's setting. Walcha and Weinrich are quite acceptable; I happen to prefer the sound of the small organ of St. Jakobi at Lübeck to that of the Princeton University Chapel organ.
—Walcha. ARCHIVE ARC 3029 (with S. 665-668). $5.98.
—Weinrich. M-G-M E 3021 (see S. 582).
—Biggs. COLUMBIA ML 4284 (see S. 564).
—(S. 646, 648, 650 only) Unnamed organist. AEOLIAN-SKINNER Vol. II (see S. 525).

CHORALES (18) OF VARIOUS SORTS, S. 651-668
Composed at various times and rewritten at Leipzig, 1747–1750, Bach intended to publish these chorales as a set. The meditations on the chorale, as elaborate and as beautiful as the Schübler set, show Bach's enormous skill and blazing imagination at their maturest. Sometimes he puts the chorale tune in one voice, sometimes in another; sometimes he breaks it up among the various voices. But each time, no matter how the piece is constructed, it is suffused with the feeling of the words that originally accompanied the tune. The set includes such masterpieces as *Schmücke dich, o liebe Seele* and *An Wasserflüssen Babylon* as well as Bach's last composition, *Vor deinen Thron tret' ich*. All are superbly played by Walcha.
—Walcha. ARCHIVE ARC 3027/9 (with S. 645-650). Three 12-in. $5.98 each.

COMPOSITIONS ON THE CHORALE, FROM THE "CLAVIERUEBUNG," PART III, S. 669-689
Published 1739. These twenty-one settings of ten chorales are described in the title of the first edition as "Various Preludes on the Catechism and Other Hymns." In that edition and in the present recordings they are introduced by the splendid Prelude in E flat, S. 552, and rounded out by its giant triple Fugue. Both performers set the chorale tunes off neatly by their registration whenever this is feasible, and exploit the variety of color obtainable on the fine old organs they use. Westminster lists the registration for each setting.
—Walcha. ARCHIVE ARC 3022/4 (with S. 552 and 5 miscellaneous chorale preludes). Three 12-in. $5.98 each.
—Weinrich. WESTMINSTER WN 2205 (see S. 552).

FUGA SOPRA IL MAGNIFICAT, S. 733
A powerful work, played with appropriate brilliance.
—Walcha. ARCHIVE ARC 3030 (with S. 768, 769). $5.98.

PARTITE DIVERSE SOPRA O GOTT, DU FROMMER GOTT, S. 767
Lüneburg, about 1700, if not earlier in Ohrdruf. This boyhood work is in nine sections, the first a harmonization of the chorale, the other eight variations on it. Well performed.
—Viderø. HAYDN SOCIETY HSL 94 (with S. 769, 11 chorale preludes). $5.95.

PARTITE DIVERSE SOPRA SEI GEGRUESSET, JESU GUETIG, S. 768
Bach worked on this set of variations at various times during his career. The result is not entirely happy: of the eleven variations eight (including the last) are short, the first and ninth are somewhat longer, and the tenth is very long — a lopsided layout; and many of them, alas, are dull. They are less so, however, in Walcha's imaginative treatment than in Heiller's relatively workaday performance.
—Walcha. ARCHIVE ARC 3030 (see S. 733).
—Heiller. EPIC LC 3261 (see S. 531).

CANONIC VARIATIONS ON VOM HIMMEL HOCH, DA KOMM' ICH HER, S. 769
Leipzig 1746–47, on the occasion of Bach's admission to the "Society of Musical Sciences." A tour de force of craftsmanship. In five movements Bach constructs as many different kinds of canons over or under or around the Christmas chorale. Heitmann's performance has the most vitality, Viderø's instrument the least attractive sound. You have to grope around on the Telefunken disc to find the beginning of this work, because there are no bands. The Haydn Society lists the registrations employed.
—Heitmann. TELEFUNKEN LGX 66009 (see S. 572).
—Walcha. ARCHIVE ARC 3030 (see S. 733).
—Viderø. HAYDN SOCIETY HSL 94 (see S. 767).

FUGUE IN C, S. APP. 90
This rather uninteresting piece based on a fanfarelike subject is listed by Schmieder among the doubtful works.
—Biggs. COLUMBIA ML 4500 (see S. 565).

CLAVIER WORKS

TWO-PART INVENTIONS (15), S. 772-786
Cöthen, 1720–1723. These marvelous little demonstrations of what genius can do with meager means are played by Landowska with a maximum of eloquence and a minimum of sentimentality. She adds many ornaments, but they are always in perfect taste. Eloquence is also achieved in Kirkpatrick's more sober reading, which has the advantage of employing the clavichord, probably the type of instrument, capable of certain nuances of dynamics and phrasing not obtainable on the eighteenth-century harpsichord, that Bach had in mind. Present day listeners must decide for themselves whether its sound pleases them. The volume control should be set considerably lower than normally if the tone of the clavichord is not to be exaggeratedly magnified. Friskin's performance is neat and conventional.
—Wanda Landowska, hpscd. RCA VICTOR LM 1974 (with Clavier Concerto in D minor). $3.98.
—Ralph Kirkpatrick, clavichord. CONCERT HALL CHS 1088. 10-in. $2.98.
—James Friskin, pf. VANGUARD BG 543/5 (with S. 814-817, 903, 904, 906, 911, 944, 971, 992). Three 12-in. $14.85.
—[Erno Balogh, pf. LYRICHORD 1 (with 18 Preludes). $4.98.]

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THREE-PART SYMPHONIES (15), S. 787-801

Cöthen, 1720–1723. Both pianists play simply and straightforwardly. With Balogh there is never any question of which of the three voices is most important at the moment. Foss is less didactic and a little more subtle. Neither player, it seems to me, does full justice to the fantasy in these pieces. A definite advantage of the Decca disc is that there is a band after every "symphony."

—Lukas Foss, pf. DECCA DL 9634. $3.98.
—Balogh, pf. LYRICHORD LL 2 (with S. 802-805). $4.98.

DUETS (4) FROM THE "CLAVIERUEBUNG," PART III, S. 802-805

Published 1739. These gravely beautiful works, in two parts but constructed on a considerably larger scale than the Inventions, deserve to be better known than they are. The Walcha performance is more serene, the Balogh more emphatic.

—Walcha, hpscd. ARCHIVE ARC 3023 (with 10 organ chorale preludes). $5.98.
—Balogh, pf. LYRICHORD LL 2 (see S. 787-801).
—[Kirkpatrick, hpscd. HAYDN SOCIETY 3059 (with S. 831, 971). $5.95.]

ENGLISH SUITES (6), S. 806-811

Cöthen, before 1722. Like the French Suites, these contain some delightful dances, but unlike the other group, they also contain some long and weighty Preludes, and even some of the dances have a subjective emotional quality. Kirkpatrick's performance is masterly. His fast tempos are lively but not hurried; his slow ones do not drag. His embellishments always sound natural and in good taste. In the second and third Suites the score presents two versions of the Sarabande: one a relatively unadorned one, and the other with added embellishments. Kirkpatrick plays through the movement once with repeats, then plays the embellished version, without repeats. This is not in accordance with his custom on the concert platform, where he is much more likely to use the embellished version for the repeat of each section (as do the other performers listed). The Archive version is no doubt a result of that company's insistence on comprehensiveness.

Valenti's performance is also praiseworthy, if not up to Kirkpatrick's in insight and flexibility. Gianoli is better here than in the French Suites. Her tempos are more plausible and she is not as impervious to nuance as she seems to be there. The Archive has bands between movements, a convenience not to be found in either of the Westminster sets.

Gulda's performance of No. 3 has much to recommend it for those who want an English Suite played on the piano. Restout's version of No. 4, though different from Kirkpatrick's and Valenti's in matters of tempo and spirit, is not without its points of interest, including her treatment of the Allemande, where she applies unwritten dotted rhythms. Backhaus' playing of No. 6 is disappointingly superficial.

—Kirkpatrick, hpscd. ARCHIVE ARC 3068/70. Three 12-in. $5.98 each.
—Fernando Valenti, hpscd. WESTMINSTER XWN 18384/5. Two 12-in. $3.98 each.
—Reine Gianoli, pf. WESTMINSTER XWN 18382/3. Two 12-in. $3.98 each.
—(No. 3, in G minor, S. 808) Friedrich Gulda, pf. LONDON LL 756 (with S. 877; Mozart: Sonata in A minor, K. 310; Rondo in D, K. 485). $3.98.
—(No. 4, in F, S. 809) Denise Restout, hpscd. R.E.B. 1 (with S. 813). $5.95.
—(No. 6, in D minor, S. 811) Wilhelm Backhaus, pf. LONDON LL 1638 (with S. 816, 860, 884). $3.98.

FRENCH SUITES (6), S. 812-817

First five Suites composed at Cöthen, 1722. It is not easy to choose between the two performances on harpsichord. Ahlgrimm fluctuates more widely than Valenti: when she is imaginative, she is more imaginative than he is; when she is not, she is much more mechanical. Her rhythm is not as firm as his, it is more improvisational, more flexible; and she does not hesitate in some of the Sarabandes and elsewhere to apply the dotted rhythms of Baroque practice. On the other hand, she omits most of the repeats. This enables her to get all six works onto one disc, but it makes many of the movements sound incomplete. Both the piano versions are very neat and rather dull. Borovsky's fast movements are crisp and immaculate but usually perfunctory. Gianoli's, when they aren't too hurried, sound like finger exercises. In the slow movements neither pianist reveals much poetry.

—Valenti, hpscd. WESTMINSTER XWN 18157/8. Two 12-in. $3.98 each.
—Isolde Ahlgrimm, hpscd. COLUMBIA ML 4746. $3.98.
—Alexander Borovsky, pf. VOX PL 8192. Two 12-in. $9.96.
—Gianoli, pf. WESTMINSTER XWN 18155/6. Two 12-in. $3.98 each.

FRENCH SUITE NO. 2, IN C MINOR, S. 813

The lovely Allemande is played poetically by Valenti, who sticks to the score, and by Restout, who does not but treats rhythm and ornamentation very freely, as was probably done in Bach's time. Valenti's Gigue, on the other hand, is rather ungainly and heavy; it is more graceful under the fingers of Ahlgrimm and Restout.

—Valenti, hpscd. WESTMINSTER XWN 18157.
—Restout, hpscd. R.E.B. 1 (see S. 806-811).
—Ahlgrimm, hpscd. COLUMBIA ML 4746.
—Borovsky, pf. VOX PL 8192.
—Gianoli, pf. WESTMINSTER XWN 18155.

FRENCH SUITE NO. 3, IN B MINOR, S. 814

Valenti plays the Anglaise after the Minuet instead of before (some editions print it one way, some the other). Again he plays the Gigue in a rather heavy registration; Ahlgrimm's is less ponderous. Gianoli hurries through the Courante and her Sarabande is wooden. Among the piano versions, Friskin's is a bit more colorful than Borovsky's.

—Ahlgrimm, hpscd. COLUMBIA ML 4746.
—Valenti, hpscd. WESTMINSTER XWN 18157.
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).
—Borovsky, pf. VOX PL 8192.
—Gianoli, pf. WESTMINSTER XWN 18155.

FRENCH SUITE NO. 4, IN E FLAT, S. 815

Valenti seems most satisfactory here, his tender treatment of the Sarabande being

especially outstanding. None of the pianists distinguishes himself particularly, although Borovsky builds the opening of the Allemande nicely and Gianoli's Gigue is the brightest of the three.
—Valenti, hpscd. WESTMINSTER XWN 18158.
—Ahlgrimm, hpscd. COLUMBIA ML 4746.
—Gianoli, pf. WESTMINSTER XWN 18156.
—Borovsky, pf. VOX PL 8192.
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).

FRENCH SUITE NO. 5, IN G, S. 816
All seven artists play the familiar Gavotte well, and all but one do justice to the jolly Gigue: only Gianoli manages to make it sound rigid. Ahlgrimm imparts a special snap to the Sarabande and Loure by holding the dotted notes longer than their written values, in accordance with Baroque practice. A few split notes in the Demus.
—Ahlgrimm, hpscd. COLUMBIA ML 4746.
—Valenti, hpscd. WESTMINSTER XWN 18158.
—Backhaus, pf. LONDON LL 1638 (see S. 811).
—Jörg Demus, pf. REMINGTON RLP 199-25 (with S. 825). $3.98.
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).
—Borovsky, pf. VOX PL 8192.
—Gianoli, pf. WESTMINSTER XWN 18156.

FRENCH SUITE NO. 6, IN E, S. 817
The charming Allemande of this, the most familiar of the French Suites, has a fine lyric flow under Valenti's fingers. Gianoli plays it too fast and Ahlgrimm too deliberately. The latter, however, again enlivens the dotted rhythms of the Sarabande. Friskin plays the Minuet after the Bourrée instead of before it, perhaps in order not to follow the Bourrée by another fast movement, the Gigue.
—Valenti, hpscd. WESTMINSTER XWN 18158.
—Ahlgrimm, hpscd. COLUMBIA ML 4746.
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).
—Borovsky, pf. VOX PL 8192.
—Gianoli, pf. WESTMINSTER XWN 18156.

PARTITAS (6), S. 825-830
Published 1726–1730. These fine suites consist of dance movements, each set being introduced, like the English Suites, by a prelude of some kind. The variety of shape and character Bach managed to give to those preludes, and indeed to each of the dance patterns, is astonishing. There is unfortunately no satisfactory performance employing a harpsichord. Three of the Partitas, to be sure, are played on that instrument in the Remington album, but the performances are so stiff that they cannot be considered here. Tureck, Jambor, and Badura-Skoda illustrate the pianist's dilemma mentioned here in the prefatory remarks. Tureck plays with more nuance, on the whole, in dynamics, touch, and phrasing. It is a thoroughly pianistic style and probably corresponds, one imagines, to the best type of Bach playing in the early nineteenth century. Jambor's color-range is considerably less wide, and she consequently holds the attention less consistently, although she will sometimes choose a better tempo, as in the Sarabande of No. 2. The Royale surfaces are poorer than Capi-

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tol's but Tureck's are the only discs on which the individual movements are separated by bands. The young Badura-Skoda seems to be aiming in the right direction, but he often sounds as though he were playing a carefully learned lesson. Demus is rather dull on the whole; the only vital performance in the Remington album is Sari Biro's of No. 2.
—Rosalyn Tureck, pf. ROYALE 1415/8. Four 12-in. $1.98 each.
—Agi Jambor, pf. CAPITOL PBR 8344. Two 12-in. $7.96.
—Paul Badura-Skoda, pf. WESTMINSTER XWN 3307. Three 12-in. $11.95. (XWN 18376/8. $3.98 each.)
—Demus, pf. (Nos. 1 and 6); Sari Biro, pf. (No. 2); John Gillespie, hpscd. (Nos. 3-5). REMINGTON R 199-108/3. Three 12-in. $1.95 each.
—[Kirkpatrick, hpscd. HAYDN SOCIETY 3056/8. Three 12-in. $5.95 each.]

PARTITA NO. 1, IN B FLAT, S. 825
Landowska's Prelude is heavy-footed towards the end; in the Courante she chooses to interpret the dotted-eighths-and-sixteenths (against triplets) as exactly that, instead of playing the sixteenth with the last eighth of the triplet, in the Baroque manner; in the Sarabande she adds chords. Her divagations from the score are not convincing re-creations here, as they are so often elsewhere, but seem merely to be willful changes. Lipatti is clean, sensible, and pleasant. There is little interpretative difference between his two performances; the recording is a little better in the Columbia; the Angel is part of a recording of Lipatti's last recital. Badura-Skoda, Jambor, Demus, and Kitain are respectable but not very interesting (the last-named plays on an early nineteenth-century piano). Tureck performs with style, and tries to achieve variety of shading and color; but her Prelude drags slightly and she is the victim of a mannerism — almost every final chord is rolled, with an appoggiatura.
—Dinu Lipatti, pf. COLUMBIA ML 4633 (with Bach transcriptions; Mozart: Sonata in A minor, K. 310). $3.98. Or ANGEL 3556B (with same Mozart Sonata; Schubert: Impromptus Nos. 2 and 3; Chopin: 13 Waltzes). Two 12-in. $9.98.
—Landowska, hpscd. RCA VICTOR LCT 1137 (with S. 903, 912, 971). $3.98.
—Badura-Skoda, pf. WESTMINSTER XWN 3307 or XWN 18376.
—Tureck, pf. ROYALE 1415.
—Jambor, pf. CAPITOL PBR 8344.
—Demus, pf. REMINGTON RLP 199-25 (see S. 816) and R 199-108/3.
—Anatol Kitain, pf. ESOTERIC ESP 3001 (with Bach transcriptions). $5.95.

PARTITA NO. 4, IN D, S. 828
The Gillespie, the only performance on a harpsichord, is unfortunately the least interesting, being as regular and as unyielding as a metronome throughout. The late William Kapell, on the other hand, did a fine job with this Partita — surprisingly, for Bach was far from a specialty of his. In the Allemande and Sarabande he sings the long phrases with the suppleness and sensitivity of a great vocalist. Unfortunately the Gigue is omitted. It is precisely in the Allemande and Sarabande that Jambor has the least to contribute; she does much better with the livelier Courante and Gigue. Badura-Skoda, despite some sensitive playing, is not very convincing. The most acceptable complete performance is Tureck's, although with the usual reservation about the authenticity of her style.
—Tureck, pf. ROYALE 1416.
—Jambor, pf. CAPITOL PBR 8344.
—Badura-Skoda, pf. WESTMINSTER XWN 3307 or XWN 18377.
—William Kapell, pf. RCA VICTOR LM 1791 (with works by Schubert and Liszt). $3.98.
—Gillespie, hpscd. REMINGTON R 199-108/3.

PARTITA NO. 6, IN E MINOR, S. 830
Gieseking plays the great Toccata in a rather matter-of-fact way. In the other movements he favors fast tempos — he makes a virtuoso exercise out of the Courante; altogether his reading is more interesting as a study in finger control than as a representation of Bach. There is not much to choose as between Tureck and Jambor; in the Toccata Tureck stresses the drama, Jambor the pathos. After a strong opening in the Toccata, Badura-Skoda relapses into the neutral style that predominates in his playing of the whole set. Demus is respectable but rather insensitive.
—Tureck, pf. ROYALE 1418.
—Jambor, pf. CAPITOL PBR 8344.
—Badura-Skoda, pf. WESTMINSTER XWN 3307 or XWN 18378.
—Demus, pf. REMINGTON R 199-108/3. Or REMINGTON R 199-92 (with 2 Preludes and Fugues from the *Well-Tempered Clavier*). $3.98.
—Walter Gieseking, pf. COLUMBIA ML 4646 (with works by Handel and Scarlatti). $3.98.

PARTITA IN B MINOR, S. 831
Published 1735. This elaborate suite comes from Part II of the *Clavierübung*, where it bears the title *Overture nach französischer Art.* It is ably performed here on a harpsichord made in England by Thomas Goff. Heller is a little overfond of showing off his instrument's generous endowments, but in general his playing is crisp and lively. Wollmann's is neat and rather superficial.
—Stanislav Heller, hpscd. DELYSE EC 3135. 10-in. $4.00.
—Eva Wollmann, pf. WESTMINSTER XWN 18105 (with S. 971, 989). $3.98.
—[Kirkpatrick, hpscd. HAYDN SOCIETY 3059 (see S. 802-805).]

THE WELL-TEMPERED CLAVIER, S. 846-893
Part I: Cöthen, 1722; Part II: Leipzig, 1744. There is a belief, fostered by some reviewers, that Landowska takes great liberties with Bach's text. This is an exaggeration. The fact is that she never departs from the spirit of the text and seldom from the letter. When she does, it is usually in the ornamentation — a matter in which the manuscript sources are by no means always in agreement. What probably led to the belief is the freedom and flexibility of her phrasing. For while she is capable of iron rhythm when the music calls for it, her main concern is to be sure that the music sings and breathes naturally. That is why Bach is eloquent under her fingers, and not dreary or mechanical. There can never, fortunately, be a "definitive" per-

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formance of this, or any, masterwork; but Landowska has here set up a standard that for penetration and for all-round satisfactoriness will be hard to surpass.

Ahlgrimm is by no means devoid of temperament, and she does many of the preludes and fugues rather nicely. But with others she tends towards a grim ponderousness; and not all her attempts to achieve nuance are convincing. Some of them seem to arise, not from the natural flow of the music, but from a decision that it was time to be less metronomic and this was as good a place as any.

For those who must have Bach on a piano rather than a harpsichord, the Tureck is recommended. This thoughtful artist plays very clearly and with excellent control. In the fugues she displays a delicate balance in the weight of the individual voices that can be achieved only by a first-class pianist. Her tone is good, her ideas always interesting. Some of the preludes and fugues come off less well than others, but that is true (though more seldom) even with Landowska. Practically the only objection I have is to Miss Tureck's habit of ornamenting the final chord of a piece unnecessarily. Not only are such ornaments absent in the sources, but Miss Tureck does not even have the harpsichordist's excuse of being otherwise unable to sustain the chord for its full value. Demus' playing, while lacking this fault and being clean and beautifully controlled, is rather cool and stays on the surface. There is little intensity, little feeling for the inner life of a phrase.

—Landowska, hpscd. RCA VICTOR LM 1017, 1107, 1136, 1152, 1708, 1820. Six 12-in. $3.98 each.

—Tureck, pf. DECCA DX 127 and 128. Two sets of three 12-in. $11.44 each.

—Demus, pf. WESTMINSTER WN 5501 (with score). Five 12-in. $27.50.

—(Book I only) Ahlgrimm, hpscd. COLUMBIA SL 191. Three 12-in. $11.98.

PRELUDE AND FUGUE IN A MINOR, S. 894 Weimar, about 1717. These brilliant pieces were later used by Bach in his Concerto for Flute, Violin, Harpsichord, and Strings, in A minor, S. 1044. They are neatly and smoothly played here.

—Jambor, pf. CAPITOL P 8348 (with S. 903, 971, 998). $3.98.

CHROMATIC FANTASY AND FUGUE, S. 903 Weimar, about 1720; revised Leipzig, 1730. There is something to be said for every one of these performances. It is simply the misfortune of six of these artists that they are up against one of the great Bach performances of our time, one that belongs, in the reviewer's opinion, among the dozen best keyboard recordings ever made. Everyone here plays the Fugue well, but no one approaches Landowska in the Fantasy. Dramatic impact, unceasing eloquence, an improvisatory quality making each event sound new and unexpected, together with an over-all planning and control that keep the piece building up to the tragic power of the final measures — these are some of the elements of an incomparable reading. Valenti's is very good, but lacks the drive of Landowska's. Of the performances on a piano, Kempff's is perhaps the most interesting, as an example of the old romantic type of Bach interpreta-

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tion at its best—an anachronism, but, taken on its own terms, magisterial and compelling. Jambor is by no means devoid of imagination; Friskin has traces of the romantic approach; Slenczynska is neat and thoughtful; Serkin, rather sober and in some passages surprisingly cut-and-dried.
—Landowska, hpscd. RCA VICTOR LCT 1137 (see S. 825).
—Valenti, hpscd. LYRICHORD LL 47 (with S. 911, 912). $4.98.
—Wilhelm Kempff, pf. LONDON LL 791 (with Bach transcriptions). $3.98.
—Jambor, pf. CAPITOL P 8348 (see S. 894).
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).
—Ruth Slenczynska, pf. MUSIC LIBRARY MLR 7030 (with S. 911, 963, 971). $5.00.
—Rudolf Serkin, pf. COLUMBIA ML 4350 (with S. 971; Sonata for Cello and Piano, in G minor). $3.98.

FANTASY AND FUGUE IN A MINOR, S. 904
Leipzig, about 1725. An unusually fine double fugue is the feature of this little-known work. Clear, straightforward performance.
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).

FANTASY IN C MINOR, S. 906
Leipzig, about 1738. A chromatic work, intense and almost romantic in mood. Friskin's reading is a little more deliberate than Jambor's, but more effectively contrasts the middle portion of each section with its beginning and end. In the manuscript this is joined by a fugue, which is regarded by some authorities as incomplete and is not played in these recordings.
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).
—Jambor, pf. CAPITOL PBR 8354 (with S. 910-916, 920, 922). Two 12-in. $7.96.

TOCCATAS, S. 910-916
All seven of Bach's toccatas are presented in the album listed below. Miss Jambor's playing is technically unexceptionable. Everything is neat and brisk. Some of the slow sections are taken a little too quickly and lose part of their effect, but the rest are nicely done. S. 911-914 will be dealt with individually, since there are several recordings of each. Here we may point out that in the Toccata in F sharp minor, S. 910 (Cöthen, about 1720), while the introductory section could be more rhapsodic, the Presto is very cleanly played. Similarly, in the G major Toccata, S. 916 (Weimar, about 1709), although the Adagio seems a shade fast, the sunny gaiety of the Scarlattian opening and of the cheerful fugue are well conveyed.
—Jambor, pf. CAPITOL PBR 8354 (see S. 906).

TOCCATA IN C MINOR, S. 911
Cöthen, about 1720. A solid, imposing work with a splendid fugue. Next to Valenti's pithy performance on the harpsichord, all the piano versions sound thin and pale. The most vital and imaginative of these is the one by young Casadesus. The differences among the rest are minor.
—Valenti, hpscd. LYRICHORD LL 47 (see S. 903).
—Jean Casadesus, pf. ANGEL 45003 (with clavier concertos Nos. 1 and 5). $3.98.
—Jambor, pf. CAPITOL PBR 8354 (see S. 906).
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).
—Slenczynska, pf. MUSIC LIBRARY MLR 7030 (see S. 903).

TOCCATA IN D, S. 912
Weimar, about 1710. This is a rather sprawling work, for Bach, but it includes a playful Allegro, a fine, brooding Adagio, and a cheerful, giguelike Fugue. All three of the harpsichord versions are good on the whole. The Landowska seems just about right in every respect. Valenti has some heavy-handed moments in the Allegro and plays the finale very fast; on his disc the Toccata is split between the sides. In the Marlowe, which is otherwise quite nice, there are passages in the Allegro where undue weight is given to the left-hand part. Of the performances on a piano, the Jambor is preferred, Bundervoët's being rather superficial.
—Landowska, hpscd. RCA VICTOR LCT 1137 (see S. 825).
—Sylvia Marlowe, hpscd. REMINGTON R 199-136 (with Scarlatti: 7 Sonatas; Couperin: *Les Folies Françaises*). $3.98.
—Valenti, hpscd. LYRICHORD LL 47 (see S. 903).
—Jambor, pf. CAPITOL PBR 8354 (see S. 906).
—Agnelle Bundervoët, pf. LONDON DTL 93051 (with S. 914, Chaconne, chorale prelude). $3.98.

TOCCATA IN D MINOR, S. 913
Weimar, about 1710. Two improvisatory sections, each followed by a double fugue, make up this Toccata. The fugues are not especially interesting (the second one seems to have exhausted its material long before it comes to an end) but the other movements have a poetic quality, particularly when played as eloquently as Valenti plays them here. Both of the piano versions are acceptable.
—Valenti, hpscd. LYRICHORD LL 48 (with S. 914, 998). $4.98.
—Gianoli, pf. WESTMINSTER XWN 18100 (with S. 922, Chaconne). $3.98.
—Jambor, pf. CAPITOL PBR 8354 (see S. 906).

TOCCATA IN E MINOR, S. 914
Weimar, about 1710. The early part of this Toccata is impressive, in a rather sad, resigned way, but the work ends in a fugue on one of those sewing-machine themes which occasionally turn up in Bach. All the player can do is hold the cloth steady, so to speak, and keep treadling away. Valenti does the improvisational sections rather imaginatively, as does Bundervoët among the pianists.
—Valenti, hpscd. LYRICHORD LL 48 (see S. 913).
—Bundervoët, pf. LONDON DTL 93051 (see S. 912).
—Jambor, pf. CAPITOL PBR 8354 (see S. 906).
—Eugene Istomin, pf. COLUMBIA ML 4343 (with Violin Concerto in A minor, Piano Concerto in F minor, Trio Sonata in G, S. 1038). $3.98.

FANTASY IN C MINOR, S. 919
Cöthen, about 1720. A short piece (twen-

ty-five measures) very much like one of the two-part Inventions. Landowska plays it impeccably.
—Landowska, hpscd. RCA VICTOR LM 1217 (with S. 972, 998; works by Scarlatti and others). $3.98.

FANTASY IN G MINOR, S. 920
Not a very interesting work, consisting largely of passagework and arpeggios. Its authenticity has been questioned.
—Jambor, pf. CAPITOL PBR 8354 (see S. 906).

FANTASY IN A MINOR, S. 922
Weimar, about 1710. This starts out very promisingly as a clever display piece but after a while it bogs down in harmonic progressions that take a long time to reach any destination. Both pianists do well with the earlier portion and neither can be blamed for not doing more with the rest.
—Jambor, pf. CAPITOL PBR 8354 (see S. 906).
—Gianoli, pf. WESTMINSTER XWN 18100 (see S. 913).

FANTASY AND FUGUE IN A MINOR, S. 944
Cöthen, about 1720. The Fantasy is only a series of arpeggiated chords (ten measures) but the Fugue is, according to Spitta, the longest one for clavier that Bach completed. Since it consists of an uninterrupted run of rapid sixteenth notes, it is a kind of *perpetuum mobile*, but it sounds neither dull nor too long in this neat, transparent performance.
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).

SONATA IN D, S. 963
Arnstadt, 1704. A rather uncharacteristic composition, not only in its title but also in content, which includes a simple, song-like first section and a fugue whose theme is labeled "in imitation of a hen's cackling." It is a lightweight work. Miss Slenczynska plays it in her customary clean but slightly romanticizing manner.
—Slenczynska, pf. MUSIC LIBRARY MLR 7030 (see S. 903).

ITALIAN CONCERTO, S. 971
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—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).
—Wollmann, pf. WESTMINSTER 18105 (see S. 831).
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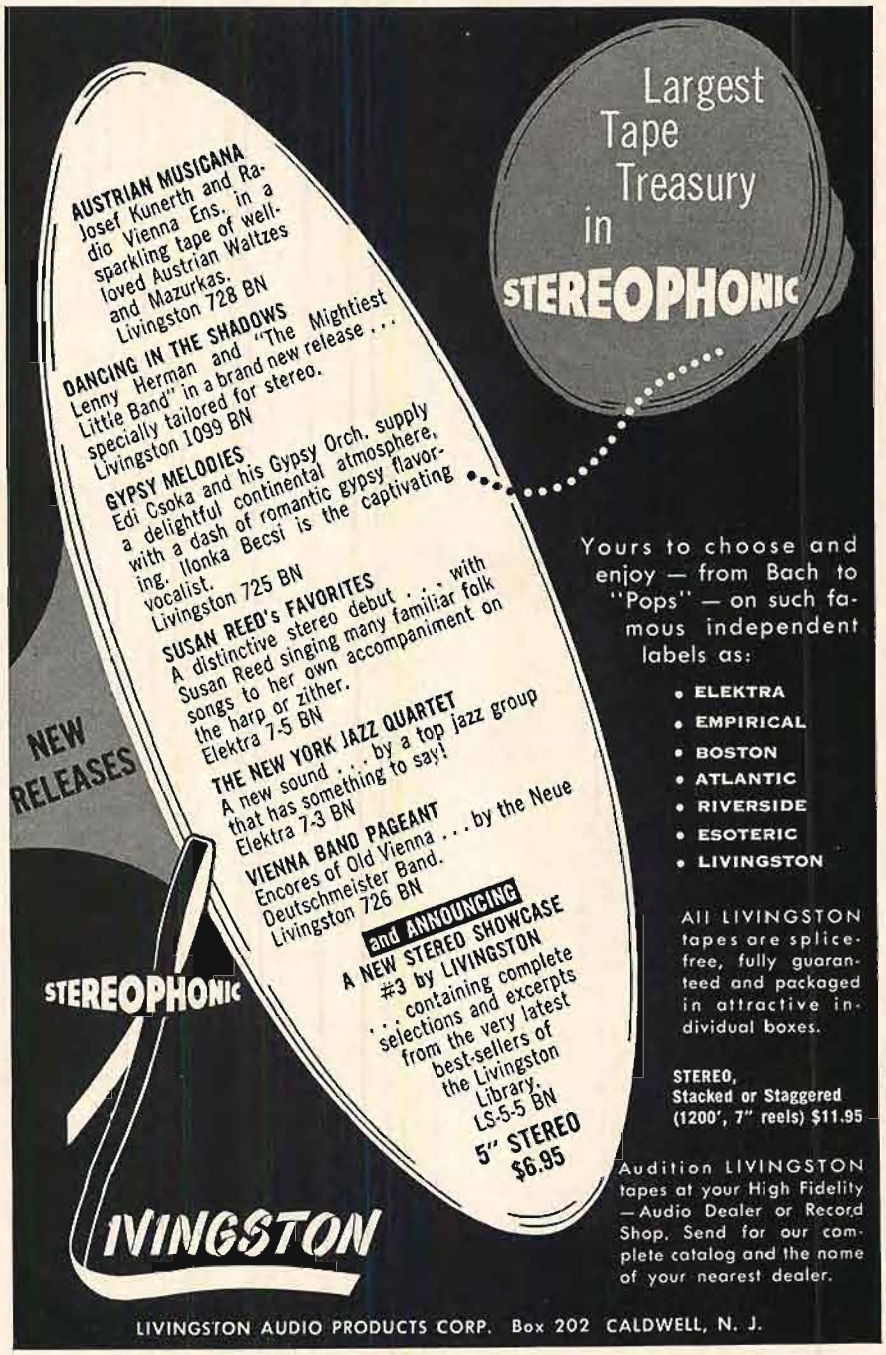
—(S. 972 only) Landowska, hpscd. RCA VICTOR LM 1217 (see S. 919).

CONCERTO AFTER MARCELLO, IN D MINOR, S. 974
Based on a noble oboe concerto by Benedetto Marcello. It is acceptably performed.



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FANTASY IN G MINOR, S. 920
Not a very interesting work, consisting largely of passagework and arpeggios. Its authenticity has been questioned.
—Jambor, pf. CAPITOL PBR 8354 (see S. 906).

FANTASY IN A MINOR, S. 922
Weimar, about 1710. This starts out very promisingly as a clever display piece but after a while it bogs down in harmonic progressions that take a long time to reach any destination. Both pianists do well with the earlier portion and neither can be blamed for not doing more with the rest.
—Jambor, pf. CAPITOL PBR 8354 (see S. 906).
—Gianoli, pf. WESTMINSTER XWN 18100 (see S. 913).

FANTASY AND FUGUE IN A MINOR, S. 944
Cöthen, about 1720. The Fantasy is only a series of arpeggiated chords (ten measures) but the Fugue is, according to Spitta, the longest one for clavier that Bach completed. Since it consists of an uninterrupted run of rapid sixteenth notes, it is a kind of *perpetuum mobile*, but it sounds neither dull nor too long in this neat, transparent performance.
—Friskin, pf. VANGUARD BG 543/5 (see S. 772-786).

SONATA IN D, S. 963
Arnstadt, 1704. A rather uncharacteristic composition, nor only in its title but also in content, which includes a simple, song-like first section and a fugue whose theme is labeled "in imitation of a hen's cackling." It is a lightweight work. Miss Slenczynska plays it in her customary clean but slightly romanticizing manner.
—Slenczynska, pf. MUSIC LIBRARY MLR 7030 (see S. 903).

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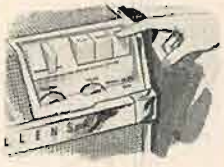

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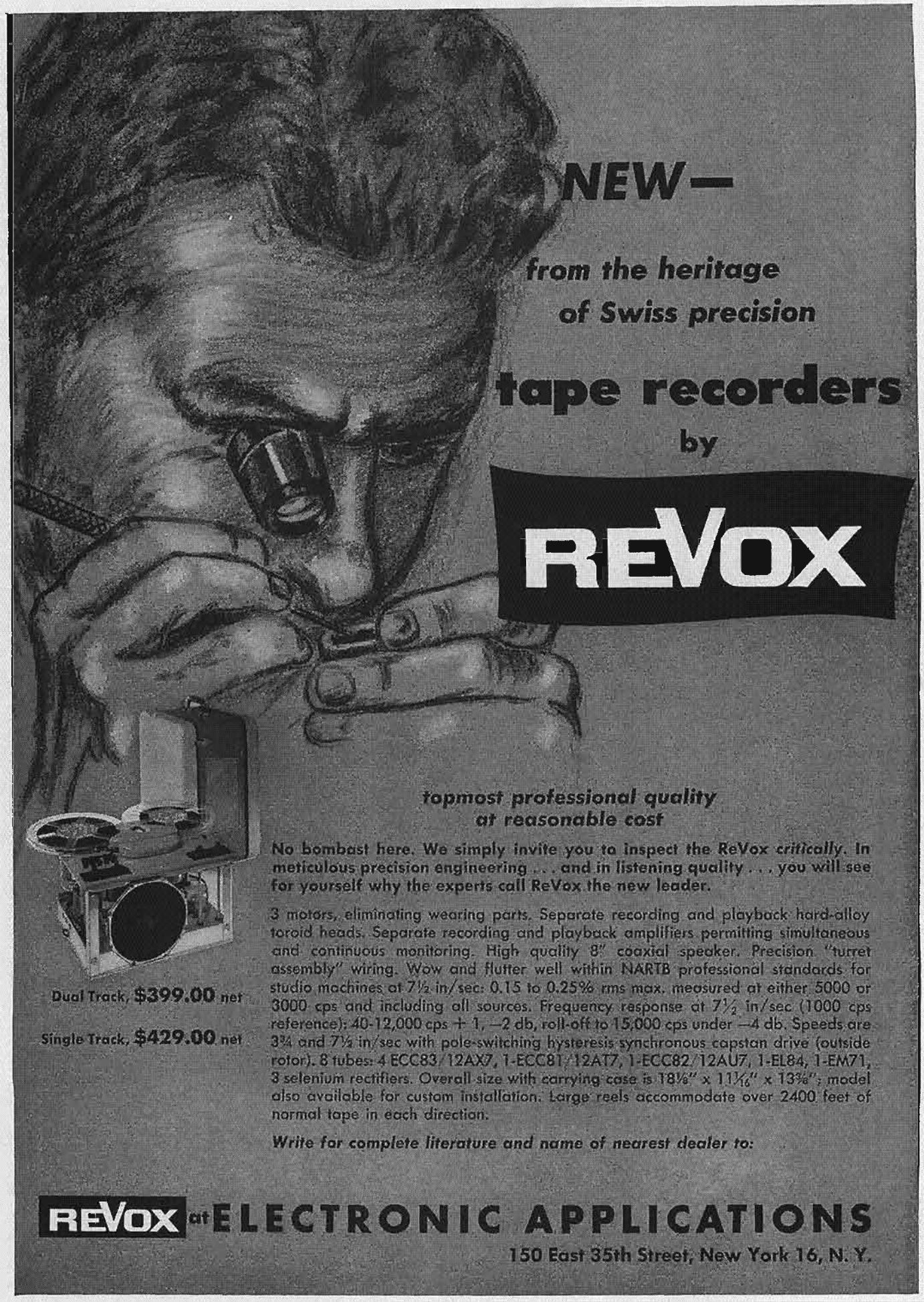

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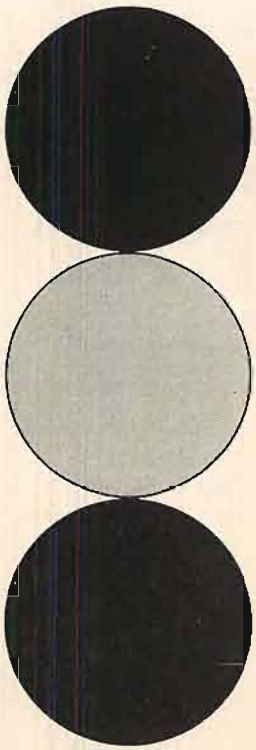

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TAPE DECK

Continued from page 138

Vanguard is the lucky label to boast a first stereo *Scheherazade*. It is certain to be a best-seller since (while less luminous if scarcely less transparent than Fiedler's *Coq d'or*) it has the same heady blend of tonal solidity and crispness which made the recent Wøldike Haydn symphony tapings so notable. Here, however, the orchestra — with the definite exception of its silken-toned and beautifully precise violin soloist — hardly achieves comparable levels of artistic grace and finesse. Nevertheless, Rossi's performance is boldly expansive and dramatic, and in stereo it can be reproduced with little if any, of the tonal edginess (and with far more sonic weight in the big Festival, Sea, and Storm passages) than in the widely popular but markedly less impressive SRV 103 LP version. (Nov. 1956)

• • ROSSINI: *Guillaume Tell: Overture*
†Tchaikovsky: *Marche slave, Op. 31*

Boston Pops Orchestra, Arthur Fiedler, cond.
RCA VICTOR BCS 41. 7-in. $8.95.

Here again stereo alchemy transmutes the overside pieces in the *Hi-Fi Fiedler* disc (LM 2100) with such entrancing sound that even their most hackneyed pages are endowed with infectiously fresh appeal. ("Fi Man's Fancy," Sept. 1957)

• • STRAUSS FAMILY: *Waltzes* (with other pieces)

Boston Pops Orchestra, Arthur Fiedler, cond.
RCA VICTOR CCS 45-6. Two 7-in. $10.95 each.

Vienna Philharmusica Symphony Orchestra, Hans Hagen, cond.
URANIA UST 1202. 7-in. $11.95.

Possibly it is only the fact that the various Strausses' scorings don't lend themselves to as rich exploitation in stereo which accounts for my finding the reproduced sound qualities here less persuasive than in the *Coq d'or* Suite. As a matter of fact, from a sheerly technical point of view, no previous symphonic-styled Vienna-Strauss recordings have ever done as well by the too-often overlooked sonic felicities that characterize the Waltz Masters no less than their gift of inexhaustible melodiousness. The choices here are refreshing too: Josef's *Dynamiden* (here with its alternative title, *Geheime Anziehungskräfte* literally translated as "Secret Attractions"), and Johann II's too seldom heard *Zitronen* in addition to his more familiar *1001 Nights* (in the "Strauss Waltzes" program, CCS 45); Eduard's piquant *Doctrinen* and Josef's superbly varied and evocative *Sphärenklänge*, plus the ever-fresh *Roses from the South* by Johann II (in "Waltzes by the Strauss Family," CCS 46) — all of which are performed as large-scale symphonic waltz-poems with uncut introductions and codas.

Hagen sticks to the "Waltz King" alone in Vol. 1 of a *Strauss Sparkles in Hi-Fi*

Continued on page 142

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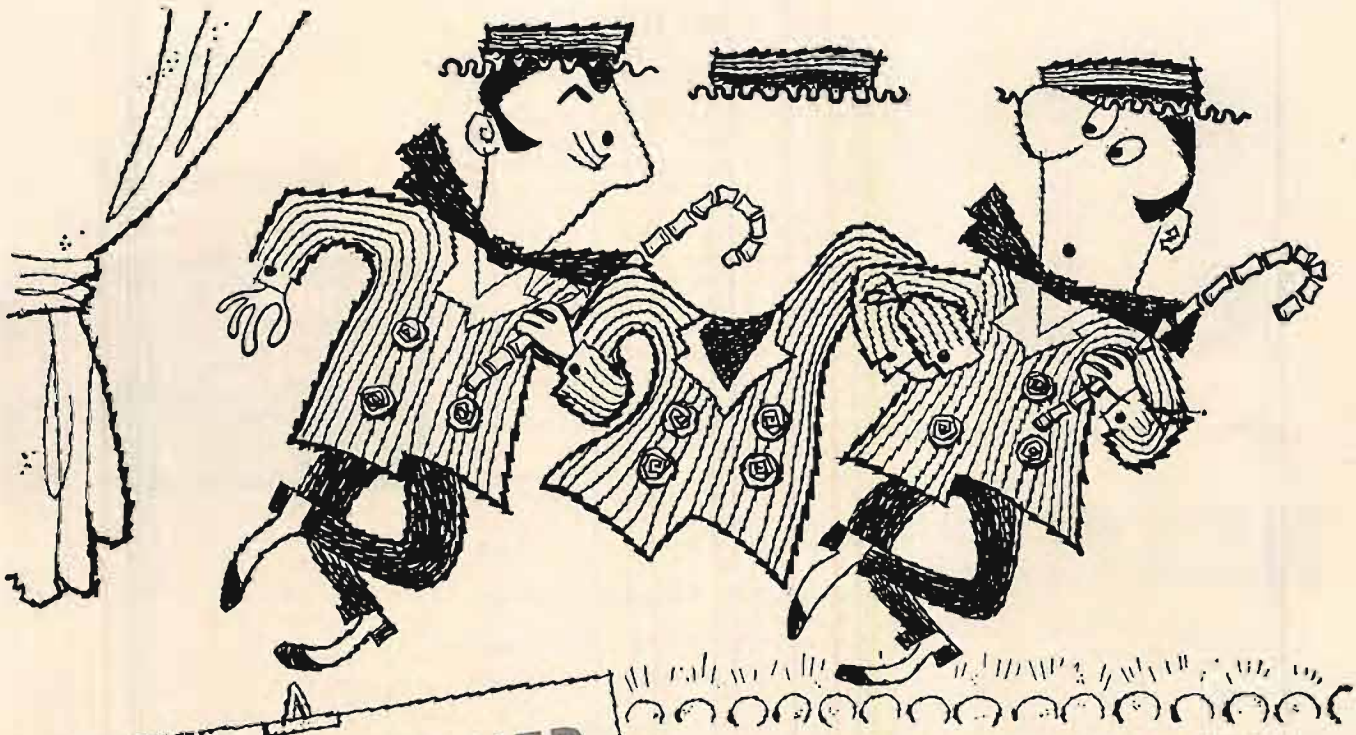

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TAPE DECK

Continued from page 140

series (simultaneously released on LP as UR 8009), but he ranges even more enterprisingly throughout the repertory for the *Waldmeister* Overture, exhilarating *Leichtes Blut* and *Elektrophor* polkas, and the lush *Indigo* (*1001 Nights*) Intermezzo, as well as four waltzes (*Freucht euch des Lebens, Lagunen, Bei uns z'Haus,* and *Kuss*), which, however, are either smaller-scaled works than those played by Fiedler or else are shorn of extended introductions. The recording here is brasher, higher in dynamic level, and more sharply focused — none too kindly on the Philharmusica's somewhat coarse tonal qualities. Hagen tends to be either too vehement or too pedestrian, but few nonconnoisseur listeners, intoxicated by the music itself, are likely to worry about any such deficiencies.

• • STRAUSS, RICHARD: *Rosenkavalier: Waltzes*
†Weber-Berlioz: *Invitation to the Dance*

Bamberg Symphony Orchestra, Heinrich Hollreiser, cond.
PHONOTAPES S 711. 7-in. $11.95.

Comparing the Viennese Strausses' vintage champagnes with the Munich Strauss's overripened liqueur, topped by heavy *Schlagobers*, is no more fascinating a pastime than pursuing technical comparison among the various stereo-engineering techniques involved in the waltz recordings of different manufacturers. Some significant distinctions here are a greater Phonotapes solidity at the low end, more piercingly brilliant highs, and wider stereo spread; as contrasted with the richer, more glowingly and evenly blended RCA Victor sonics. Perhaps the most essential difference is that the former characteristics bring the listener down several rows from midhall to a near-front seat. At any rate, both techniques have legitimate virtues and Hollreiser here capitalizes on the maximum advantages provided by his engineers in large-scaled, boldly festive, emphatically symphonic performances (not yet available on a Vox LP) of two works often heard in less imposing orchestral breadths. His crisp version of the *Invitation to the Dance* is one of the best and least sentimentalized I know, and if his *Rosenkavalier* Waltzes aren't languorous as some, they *are* thrilling — and not least for the superb stereo clarification of an undeniably "thick" score.

• • TCHAIKOVSKY: *Marche slave, Op. 31* — See Rossini: *Guillaume Tell: Overture.*

• • WEBER: *Invitation to the Dance* — See Strauss, Richard: *Rosenkavalier: Waltzes.*

REEL MUSIC NOTES

CAPITOL: Two recent concert-program LPs now appear in stereo with their original skilled competence almost unbelievably enhanced by sonic glitter and power. But the furious energy of Slatkin's Hollywood Bowl *Symphonic Dances* (originally P 8369, June 1957) becomes blatant in his hard-driven *Sleeping Beauty* Waltz, Kha-

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chaturian *Galop* and *Sabre Dance*, and *Samson et Dalila* Bacchanale; it is only in his more lilting Grieg *Norwegian Dance* No. 2 and richly expressive Ravel *Pavane* that stereo's polychromatic — rather than solely dynamic — potentialities are most gratefully explored. (• • ZF 5, 7-in., $14.95) And in the diversified religious program of the Roger Wagner Chorale's *House of the Lord* (originally P 8365, May 1957), only the unaccompanied works (Lvovsky's virtuosic *Hospodi Pomilui* and the gravely moving Greek Orthodox communion hymn, *Enite, Enite!*) reveal the finest qualities of both the ensemble itself and stereo's unique ability to levitate and *float* human voices. The *Kol Nidrei*, Luther's *Mighty Fortress*, and Dutch *Prayer of Thanksgiving* are more overtly dramatized with orchestral accompaniments; while Malotte's *Lord's Prayer*, Schubert's *Serenade*, and Franck's *Panis Angelicus* are inflated — in overelaborate arrangements as well as overexpansive sonorities — to Hollywoodian grandiosity (• • ZF 9, 7-in., $14.95).

CAPITOL (Pops): My occupational inability to keep *au courant* with pop stars' TV exploits has left me unfamiliar with Nat "King" Cole, as a singer, and Fred Waring's Pennsylvanians — subsequent, that is, to their memorable *Without Love* of many long years ago. After hearing them in superstereo, I realize how lucky I've been, for in the former's *Love is the Thing* (originally W 824), Cole pops up in mid-air like a larger-than-life Cheshire cat to croon directly in my ears with embarrassing intimacy and a lethargic sentimentality made all the stickier by Gordon Jenkins' mucilaginous accompaniments. The *Pennsylvanians in Hi-Fi* (no LP yet announced), however, is even more grotesque: unctuousness and overfancy vocal trickery in stereo recording. Certainly the heart throbs of *You'll Never Walk Alone* were never more palpitating, and *Smoke Gets in Your Eyes* never thicker or more aromatic. Technically, both tapes are masterpieces . . . aesthetically, they pander to the lowest common denominator of taste . . . (• • ZD 11, Cole, and • • ZD 12, Waring; 7-in., $12.95 each).

COLUMBIA: If you've thought the famed Philadelphian strings have been reproduced with full justice on LPs, you're going to be awakened when you hear the tonal suavity and lushness, to say nothing of the antiphonal effectiveness, of their first stereo recordings. In *The Strings of the Philadelphia Orchestra* Ormandy leads them in a full-choir arrangement of the Nocturne from Borodin's Second Quartet, the inevitable Barber Adagio, Op. 11, and Vaughan Williams' *Fantasia on Greensleeves* (where they are augmented by flutes and harp) — all done rather more slowly, with broader expressiveness, and less lyricism than I could wish, but with truly magical coloring and beautifully balanced stereo translucency (• • IMB 8, 7-in., $12.95; also available on a simultaneously released LP, ML 5187, Oct. 1957).

CONCERT HALL: Backed by reverberant acoustics and potent stereoism, Fred Haus-

Continued on next page

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TAPE DECK

Continued from preceding page

doerfer whips his apparently small Varieton Concert Orchestra into vigors and sonorities worthy of far larger and more noted ensembles. But his *In a Spanish Mood* program is surely a jet-plane tour of the peninsula: I've never heard Waldteufel's *España* and *Estudiantina*, or the five Moszkowski Spanish Dances, played faster or with more incisive percussive accents. There is little authentic Iberian atmosphere, but I must admit that the Granados Spanish Dance No. 5 (*Playera*), despite its interpretative mannerisms, has seldom if ever sounded richer or its tambourines more effective (● ● CHT/BN 27, 7-in., $11.95).

MERCURY: No musicianly discreet conductor can hope to bring much notably new to readings of the *Carmen* and first *Arlésienne* Suites; yet Paul Paray, with the Detroit Symphony Orchestra, plays these works not only straightforwardly and idiomatically, but with unmistakable — and piquant — individuality. He is to be commended too for including, in the former suite, only those sections actually scored by Bizet himself, unaugmented by the usual "arranged" additions. The Ford Auditorium in which these recordings were made does not seem markedly reverberant, but its acoustics are obviously warm and clean, and — as captured with broad-spread stereo transparency — the performances here can be reproduced with no suggestion of the "slightly stuffy" sound or undue prominence of the brasses noted in Paul Affelder's Aug. 1957 review of the MG 50135 LP versions (● ● MDS 5-3, 7-in., $12.95).

OMEGATAPE: With its channels reaching out over half the world, this adventuresome west-coast organization now adds Spain to its already spoken-for Austrian provinces. Unfortunately, however, it has chosen Luisa Linares and Los Galindos for a *Flamenco* program which captures only the superficial characteristics of this gypsy art, here catchily appealing in a buoyant *Eso es Tongo* and lyrically looping *Cordobessa*, but mostly diluted for the tourist trade (● ● ST 5017, 7-in., $11.95). Far more authentic and worthy of the strong, open stereo sound is the first of a two-volume series of Austrian *Military Marches* (of which only the *Deutschmeister*, *Radetzky*, and perhaps a couple of others are likely to be familiar to most American listeners) played with rousing enthusiasm by the Army Battalion Orchestra, Vienna, under Gustav Gaigg. For a particularly zestful and robustly sonorous sample, try the *Hurra Heidecksburg* march (● ● ST 2006, 7-in., $12.95).

PHONOTAPES: Jascha Horenstein's Beethoven Sixth, with the Pro Musica Symphony Orchestra, Vienna, is one single-channel tape which warrants citation even in the current stereo era, partly since it has not yet appeared on a Vox LP, more importantly since it is unquestionably one of the most genuinely pastoral-like *Pastorales* I know — ingratiatingly gentle and warm,

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yet at the same time spicily piquant and solidly vigorous as demanded by the score (PM 161, 7-in., $8.95).

RCA VICTOR (Pops): The original-cast *New Girl in Town* highlights (LP'd as LOC 1027) is best passed over in silence, for even such doughty characters as Gwen Verdon and Thelma Ritter cannot redeem — away from the stage itself — the raucous, totally undistinguished music (• • CPS 79, 7-in., $10.95). And *Sketches by Skitch* (LPM 1401) warrants mention only for its beautifully recorded — if sometimes overblown — sound, since Henderson and his band (aside from such moments as *Farewell Amanda*) mostly plod through disarrangements of *Mood Indigo*, *In a Sentimental Mood*, and other standards (• • CPS 69, 7-in., $10.95). Lena Horne *At the Waldorf-Astoria*, however, warrants special nonmusical citation for an extraordinary ability to project high-voltage sexiness (evoking the fragrant memory of Marlene Dietrich's great *Blue Angel* days) through aural means alone. I doubt whether Miss Horne's personality is much better caught here (where the "stereo effect" is surprisingly quite minimal) than in the original LP of this program (LOC 1028, Aug. 1957), but at that she could hardly be more vividly evoked in one's living room (• • CPS 71, 7-in., $10.95).

STEREOTAPE: The Bob Florence Trio is new to me and I have no notion of where or how its distinctive performances (featuring the leader's piano and highly imaginative use of ostinato patterns) can be fitted into known jazz-style categories. But its *Scene: Stereo* strikes me as just about the most originally conceived, precisely and economically executed, approach to modern jazz I have yet encountered. Both in its wryly fresh re-examinations of familiar materials (*Surrey with the Fringe on Top*, *Paris in the Spring*, etc.) and in striking originals (*Mambob* and *Cowbells*) there is never a dull or hackneyed moment, while at its peak (in the sardonic yet surprisingly eloquent *Here Lies Love* and *Flamingo*) the Florence Trio is a top-ranking discovery. For once, the Stereotape engineers' exceptional technical skills — especially their mastery of crystalline transients — are fully and rewardingly exploited (• • ST 7, 7-in., $11.95).

STEREOPHONY, INC.: I suppose someone *had* to come up with the notion of *Variations for Vocestra*: here it's Andrew B. White leading a small ensemble augmented by seven singers in William Austin's "enhancements" of familiar salon tear-jerkers (Schubert Serenade, Saint-Saëns *Le Cygne*, *Thaïs Meditation*, etc.) arranged with soporific humming and other vocal embellishments. At least these are mercifully wordless, and for all their sentimentality occasionally (as in *Solveig's Song* and even Debussy's *Clair de lune*) their "poeticism" is not wholy repulsive (• • C 151, 7-in., $8.95). But I found less ambiguous appeal in a *Sound Out!* "showcase" for the Chicago Symphonic Band under Clebanoff, which displays new works in semiclassical idiom especially written for this medium. Most of them are more spirited than sub-

Continued on next page

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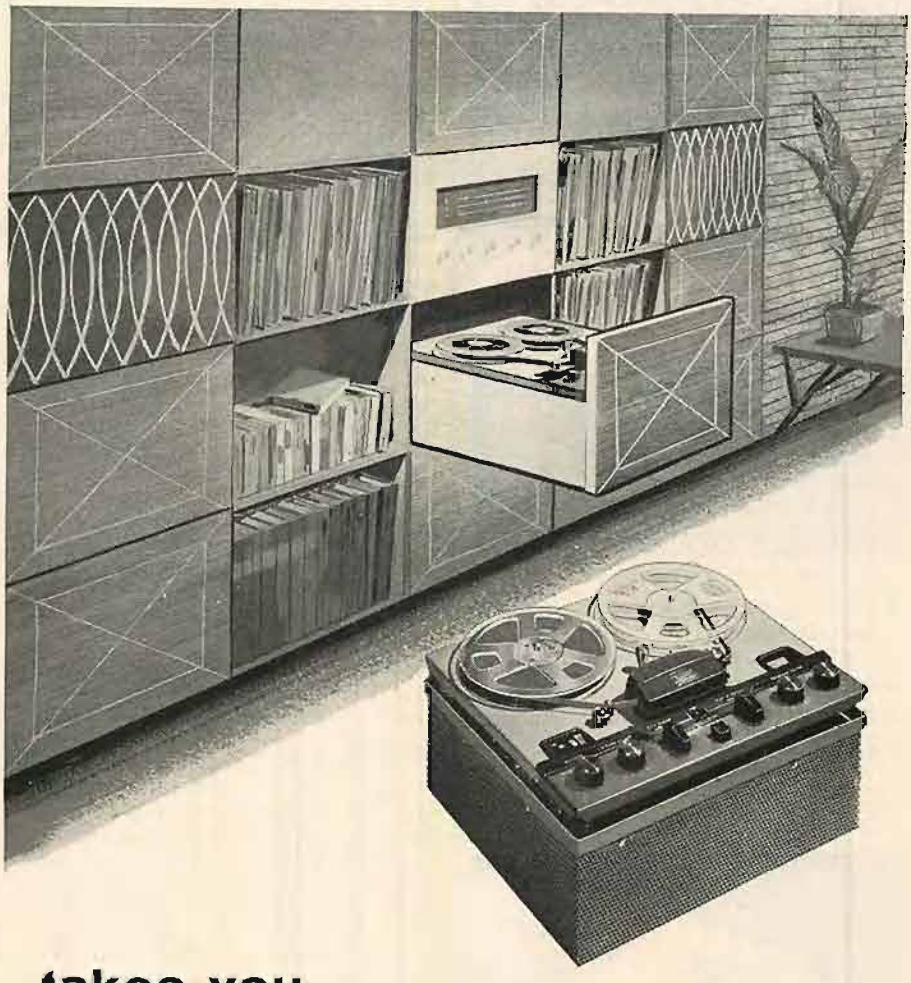

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TAPE DECK

Continued from preceding page

stantial, but McRae's *El Dorado*, Latham's *Swingin' Reel* and big, quasi-Elgarian *Proud Heritage* are notably attractive, while throughout the performances (by leading Chicagoan wind and percussion players) almost excessively reverberant acoustics and ultrabright stereo recordings are extremely impressive (• • C 141, 7-in., $8.95).

URANIA: A "demonstration" reel featuring excerpts from some five first stereo releases has reached me after most of the original tapes themselves, so I was well prepared for the room-shaking thunders of the Saint-Saëns *Organ* Symphony finale and Varèse *Ionisation*. For tentative purchasers this makes a fine sampling showcase at a very moderate price. There are the further advantages of no vocal announcements and a helpful series of introductory 250-cps tones for channel balancing, but less happily only the *Ionisation* and J. Strauss *Egyptian March* are complete, while the other selections are disconcertingly broken off in midstream (• • UST D2, 7-in., half-reel, $3.98).

VANGUARD: The great Jimmy Rushing shouts more lustily and laments more poignantly than ever in two outstanding stereo jazz showcases not yet available on LPs: *If This Ain't the Blues* (in which he sings on and off in five of the six selections, while his all-star accompanying octet has the stage to itself in the title piece) and *The Blues* (where he and the same octet divide a six-item program with Buck Clayton's Septet). Admirably, Rushing shares honors throughout with his scarcely less skilled instrumental colleagues, with whom he is superbly balanced by top-notch stereo recording and a well-chosen off-center solo placement. He is particularly effective in *I Can't Understand* in the first reel and *Oh, Love* in the second, although I relish everything except the constant use of an electronic organ — even one played as jazzically as by Marlowe Morris. But the Clayton Septet's contributions, above all its electrifyingly virtuosic, dramatically driving *Cool Too*, still manage to stop the show (• • VRT 3005 and 3008, 7-in., $11.95 each).

VIBRA-TAPES: Just when I was beginning to wonder what ever became of the pioneering tape-recording maestro, Hack Swain, I find that the audience which he first developed for electronic organ and piano multi-dubbings now seems to be ministered to by a disciple, Al Wheeler, who at times gilds the lily by adding vibrachord, Solovox, and maracas highlights. His *Old Popular Favorites (With Special Sound Effects)* lives up to its subtitle by introducing a "real" thunderstorm in *Chloe* and departure announcements as well as whistles and wheel-chugs in *Alabamy Bound*. . . . Those who like this sort of thing undoubtedly will relish same, but for me Wheeler is more nearly tolerable in his old-fashioned jangly-ragged *"Rinky-Tink" Piano Duets* (OPF 5611 and RTP 5714, 7-in., $9.85 each in full-track tapes; also available together on one 2-track tape at $12.95).

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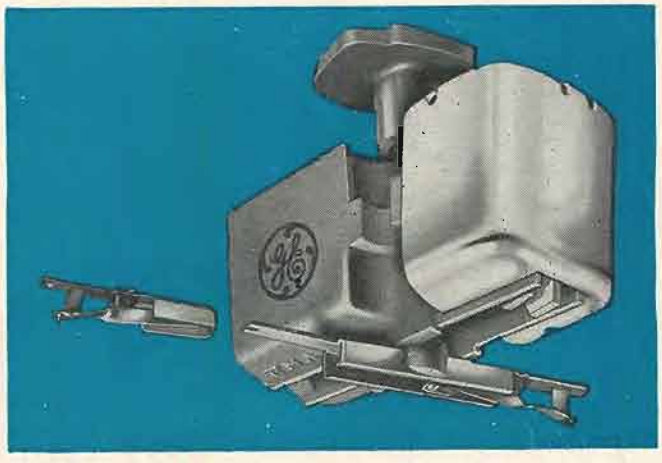

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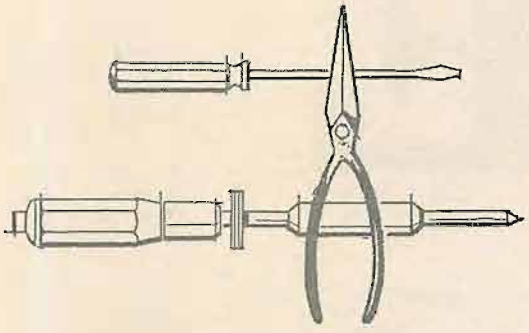

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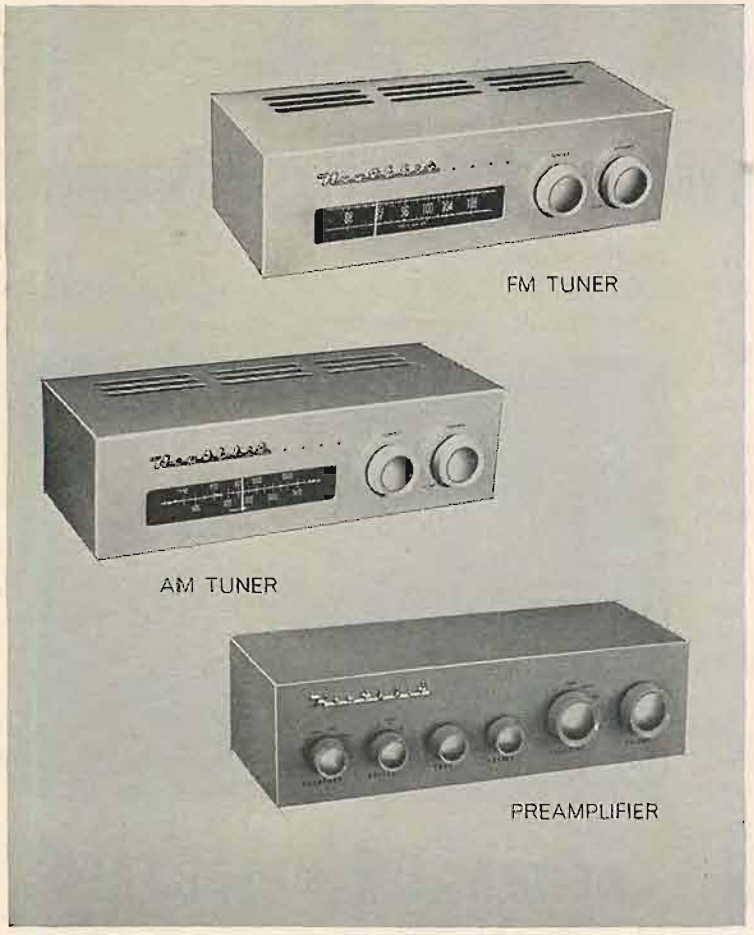

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This unit is designed to operate as the "master control" for any of the Heathkit Williamson-type amplifiers, and includes features that will do justice to the finest program material. Frequency response within ±1½ db from 15 to 35,000 CPS. Full equalization for LP, RIAA, AES, and early /8's. Five switch-selected inputs with separate level controls. Bass and treble control, and volume control, on front panel. Very attractively styled, and an exceptional dollar value. Shpg. Wt. 7 lbs.

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HEATHKIT "BASIC RANGE" HIGH FIDELITY SPEAKER SYSTEM KIT

The very popular model SS-1 Speaker System provides amazing high fidelity performance for its size because it uses high-quality speakers, in an enclosure especially designed to receive them.

It features an 8" mid-range-woofer to cover from 50 to 1600 CPS, and a compression-type tweeter with flared horn to cover from 1600 to 12,000 CPS. Both speakers are by Jensen. The enclosure itself is a ducted-port bass-reflex unit, measuring 11½" H x 23" W x 11¾" D and is constructed of veneer-surfaced plywood, ½" thick. All parts are precut and predrilled for quick assembly.

Total frequency range is 50 to 12,000 CPS, within ±5 db. Impedance is 16 ohms. Operates with the "Range Extending" (SS-1B) speaker system kit later, if greater frequency range is desired. Shpg. Wt. 30 lbs. **MODEL SS-1 $39.95**

HEATHKIT "RANGE EXTENDING" HIGH FIDELITY SPEAKER SYSTEM KIT

The SS-1B uses a 15" woofer and a small super-tweeter, to supply very high and very low frequencies and fill out the response of the "Basic" (SS-1) speaker system at each end of the audio spectrum. The SS-1 and SS-1B, combined, provide an overall response of ±5 db from 35 to 16,000 CPS. Kit includes circuit for crossover at 600, 1600 and 4000 CPS. Impedance is 16 ohms, and power rating is 35 watts. Measures 29" H x 23" W x 17½" D, and is constructed of veneer-surfaced plywood, ¾" thick. Easy to build! Shpg. Wt. 80 lbs.

MODEL SS-1B $99.95

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The fine quality of the Legato Speaker System Kit is matched only in the most expensive speaker systems available. The listening experience it can bring to you approaches the ultimate in esthetic satisfaction.

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The attractively styled "contemporary" enclosure emphasizes simplicity of line and form to blend with all furnishings. Cabinet parts are precut and predrilled from ¾" veneer-surfaced plywood for easy assembly at home. Impedance is 16 ohms. Power rating is 50 watts for program material. Full, smooth frequency response assures you of outstanding high fidelity performance, and an unforgettable listening experience. Order HH-1-C (birch) for light finishes, or HH-1-CM (mahogany) for dark finishes. Shpg. Wt. 195 lbs.

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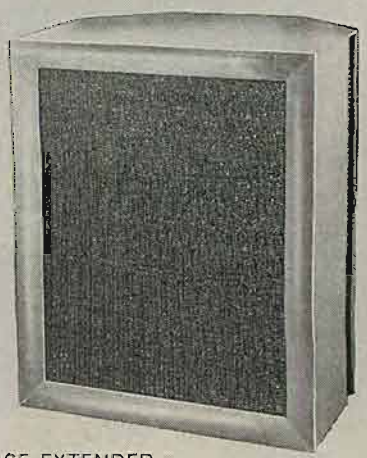

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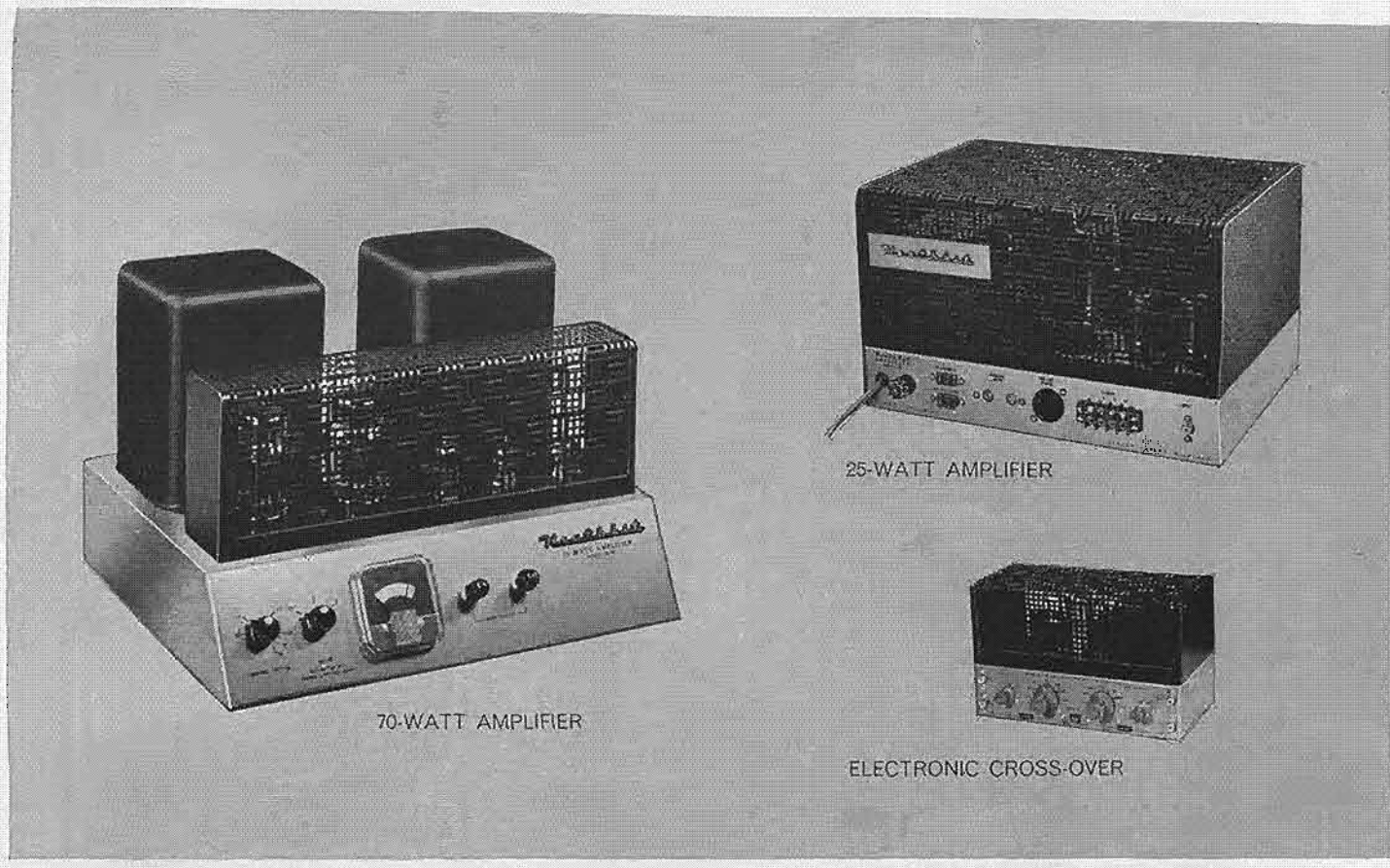

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This new amplifier features extra power reserve, metered balance circuit, variable damping, and silicon-diode rectifiers, replacing vacuum tube rectifiers. A pair of 6550 tubes produce full 70-watt output with a special-design Peerless output transformer. A quick-change plug selects 4, 8 and 16 ohm or 70 volt output, and the correct feedback resistance. Variable damping optimizes performance for the speaker system of your choice. Frequency response at 1 watt is ±1 db from 5 CPS to 80 KC with controlled HF rolloff above 100 KC. Harmonic distortion at full output less than 2%, 20 to 20,000 CPS, and intermodulation distortion below 1% at this same level. Hum and noise are 88 db below full output. Variable damping from .5 to 10. Designed to use WA-P2 preamplifier. Express only. Shpg. Wt. 50 lbs. **MODEL W-6M $109.95**

HEATHKIT 25-WATT HIGH FIDELITY AMPLIFIER KIT

The 25-watt Heathkit model W-5M is rated "best buy" in its power class by independent critics! Faithful sound reproduction is assured with response of ±1 db from 5 to 160,000 CPS at 1 watt, and harmonic distortion below 1% at 25 watts, and IM distortion below 1% at 20 watts. Hum and noise are 99 db below rated output, assuring quiet, hum-free operation. Output taps are 4, 8 and 16 ohms. Employs KT66 tubes and Peerless output transformer. Designed to use WA-P2 preamplifier. Express only. Shpg. Wt. 31 lbs. **MODEL W-5M $59.75**

HEATHKIT ELECTRONIC CROSS-OVER KIT

This device separates high and low frequencies electronically, so they may be fed through two separate amplifiers driving separate speakers. The XO-1 is used between the preamplifier and the main amplifiers. Separate amplification of high and low frequencies minimizes IM distortion. Crossover frequencies are selectable at 100, 200, 400, 700, 1200, 2000, and 3500 CPS. Separate level controls for high and low frequency channels. Attenuation is 12 db per octave. Shpg. Wt. 6 lbs.

MODEL XO-1 $18.95

HEATHKIT W-3AM HIGH FIDELITY AMPLIFIER KIT

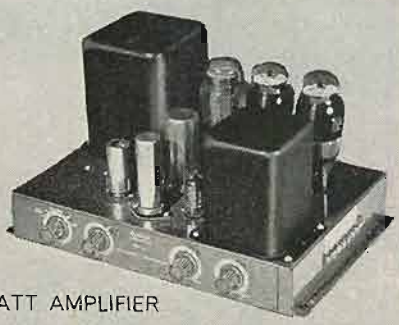
Features of this fine Williamson-type amplifier include the famous Acrosound model TO-300 "ultralinear" transformer, and 5881 tubes for broad frequency response, low distortion, and low hum level. Response is ±1 db from 6 CPS to 150 KC at 1 watt. Harmonic distortion is below 1% and IM distortion below 1.3% at 20 watts. Hum and noise are 88 db below 20 watts. Provides output taps of 4, 8 or 16 ohms impedance. Designed to use WA-P2 preamplifier. Shpg. Wt. 29 lbs. **MODEL W-3AM $49.75**

HEATHKIT W-4AM HIGH FIDELITY AMPLIFIER KIT

A true Williamson-type circuit, featuring extended frequency response, low distortion, and low hum levels, this amplifier can give you fine listening enjoyment with a minimum investment. Uses 5881 tubes and a Chicago-standard output transformer. Frequency response is ±1 db from 10 CPS to 100 KC at 1 watt. Less than 1.5% harmonic distortion and 2.7% intermodulation at full 20 watt output. Hum and noise are 95 db below full output. Transformer tapped at 4, 8 or 16 ohms. Designed to use WA-P2 preamplifier. Shipped express only. Shpg. Wt. 28 lbs. **MODEL W-4AM $39.75**

W-3AM
20-WATT AMPLIFIER

W-4AM
20-WATT AMPLIFIER



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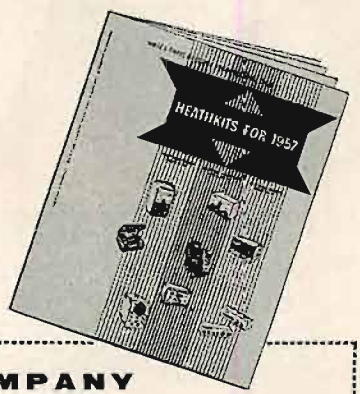
This amplifier incorporates its own preamplifier for self-contained operation. Provides 20 watt output using push-pull 6L6 tubes. True high fidelity for the home, or for PA applications. Four separate inputs—separate bass and treble controls—and volume control. Covers 20 to 20,000 CPS within ±1 db. Output transformer tapped at 4, 8, 16 and 500 ohms. Harmonic distortion less than 1% at 3 db below rated output. High quality sound at low cost!
Shpg. Wt. 23 lbs. **MODEL A-9C $35.50**

HEATHKIT A-7D
HIGH FIDELITY AMPLIFIER KIT

This is a true high fidelity amplifier even though its power is somewhat limited. Built-in preamplifier has separate bass and treble controls, and volume control. Frequency response is ±1½ db from 20 to 20,000 CPS, and distortion is held to surprisingly low level. Output transformer tapped at 4, 8 or 16 ohms. Easy to build, and a fine 7-watt performer for one just becoming interested in high fidelity. Shpg. Wt. 10 lbs. **MODEL A-7D $17.95**

Model A-7E: Same as the above except with extra tube stage for added preamplification. Two switch-selected inputs, RIAA compensation, and plenty of gain for low-level cartridges. Shpg. Wt. 10 lbs. **$19.95**

HOW TO ORDER...
Just identify the kit you desire by its model number and send check or money order to address below. Don't hesitate to ask about HEATH TIME PAYMENT PLAN.



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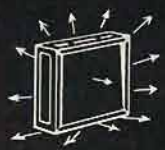

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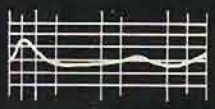
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Tested in the Home

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The ESL/BJ Super 90 Arm

SPECIFICATIONS (furnished by manufacturer): a universal transcription pickup arm designed to reduce outer- to inner-groove tracking error. **Stylus force adjustment:** removable lead counterweights and vernier slide counterweights. **Base:** mounted by two screws; thumb screws provide adjustment of tangency when different cartridges are used. **Head:** plug-in shells with universal mounting facilities. **Height adjustment:** set screws permit vertical adjustment over range of 1 in. **Lateral friction:** approx. 1 gram. **Length:** 12-in. model — 12½ in.; 16-in. model — 16½ in. **Price:** 12-in. — $33; 16-in. — $36.50. **DISTRIBUTOR:** Electro-Sonic Laboratories Inc., 35-54 36th St., Long Island City, N. Y.

It has long been realized that poor tangency of a pickup to the record groove could cause distortion, but until fairly recently a certain amount of tracking error had to be accepted as inevitable. This was because, while the disc cutting head traveled in a straight line across the radius of the disc, the playback arm moved around a fixed pivot, describing a broad arc instead of a straight line. A very long playback arm helps, as does offsetting the cartridge, but there are practical limits to this, so the condition of "minimum tracking error" always had to be considered as a compromise between inner- and outer-groove error.

One way of eliminating tracking error is by means of a radial arm, which carries the playback cartridge in a straight line, exactly following the cutting head. Such arms, however, eliminate the advantageous leverage provided by the length of a conventional arm, so their bearings must be made virtually frictionless; a difficult task at best.

The BJ arm attacks the tracking problem from another direction. It retains much of the length advantage of conventional arms, but depends upon an ingenious system of levers to provide automatic correction for pickup tracking error.

The arm is comprised of two parallel aluminum tubes, of uneven length, with their ends pivoted at the pickup head and at the arm base. This arrangement of tubes and pivots is such that the head twists slightly as it moves, and this provides the tracking correction. The whole idea is

The ESL/BJ tangential pickup arm.

so simple I couldn't help wondering why no one had thought of it long ago. There is no compromise about it . . . the tangency is about as close to perfect as it can be without going to radial arm design.

The lateral pivots are carefully-adjusted low-friction ball-and-cup bearings, and the arm's construction naturally tends to minimize the effects of torsional and longitudinal resonances. An adjustment at the base of the arm permits making

Continued on next page

Continued from preceding page

small changes in arm-to-pivot distance, so that essentially perfect tangency may be obtained with any pickup cartridge.

I tested the BJ with several of the pickup cartridges listed in BJ's instruction sheet, and it worked very well with these. Attempts to use it with cartridges which operate at less than 5 grams stylus force, however, created some problems with lateral friction, possibly because of the large number of bearings that must be used with this arm system. With most cartridges, the arm gave very satisfactory performance. Inner-groove cleanliness was equal to that obtained with any good transcription arm, but was not perceptibly better in any respect.

The BJ arm, then, represents a significant step in pickup arm design. It can never compensate for shortcomings in the cartridge, but it will give optimum performance from good ones that have average requirements for vertical stylus force. —J.G.H.

MANUFACTURER'S COMMENT: The manufacturer of the ESL/BJ Super 90 arm has reduced tracking error to an absolute minimum with an arm that embodies all of the advantages of conventional rear-pivot designs. It is now possible to obtain substantially tangential tracking with a compact arm. When the arm is mounted according to the manufacturer's instructions, the benefit of maximum accuracy is achieved at the inner grooves where tracking accuracy is most important, and this is noticed as an improvement in fidelity in inner grooves, as compared with the sound obtained from conventional pick-up arms.

It is considered that, while low stylus force is essential (this should not exceed 9 grams), reduction of tracking error will show greater improvement than reduction of stylus force. Tangential tracking not only reduces record and stylus wear, it also improves the wave shape of the electrical signal produced by the cartridge. Reducing vertical stylus force does not. In fact, many cartridges will exhibit increased distortion when their vertical tracking force is reduced. It should be remembered, too, that vertical stylus force becomes less critical when the arm is tangential to the groove.

When correctly mounted, the Super 90 is capable of tracking all high-quality cartridges at less than 5 grams. The total bearing friction of this arm is no greater than that of conventional arms; indeed it is less than many. The horizontal friction is tested at 1 gram at the factory.

Acoustic Research AR-2 Speaker System

SPECIFICATIONS (furnished by manufacturer): a compact two-way loudspeaker system utilizing the acoustic suspension principle. **Frequency response** (at 10 watts input): ±5 db, 42 to 14,000 cps; 10 db down at 30 and 16,000 cps. **Impedance:** 8 ohms. **Suggested amplifier power:** 20 to 40 watts. **Harmonic distortion:** below 2% down to 50 cps, below 3% down to 40 cps, at 10 watts input, corner mounting. **Efficiency:** about 2%. **Distribution angle:** 90° in horizontal plane. **Dimensions:** 24 in. wide by 13½ high by 11⅜ deep. **Price:** $96 in mahogany or birch; $89 in unfinished fir; $102 in walnut. **MANUFACTURER:** Acoustic Research, Inc., 24 Thorndike St., Cambridge 41, Mass.

When the Acoustic Research AR-1 loudspeaker system* appeared in 1954, critics who had come to equate bass performance with physical size were surprised to find that this speaker produced clean and remarkably extended bass response. Now Acoustic Research has come up with another system that is smaller than its predecessor, yet is capable of almost as good bass performance.

All of the speakers in the AR-2 are cone-type direct radiators. The tweeter is a highly-efficient dual unit which was initially chosen for its smoothness and low distortion, rather than for its range. It was then electrically equalized to extend its upper response limit to beyond 14,000 cycles. This equalization brings its efficiency down to where it matches that of the woofer. The over-all efficiency of the AR-2 is approximately three times that of the AR-1 system.

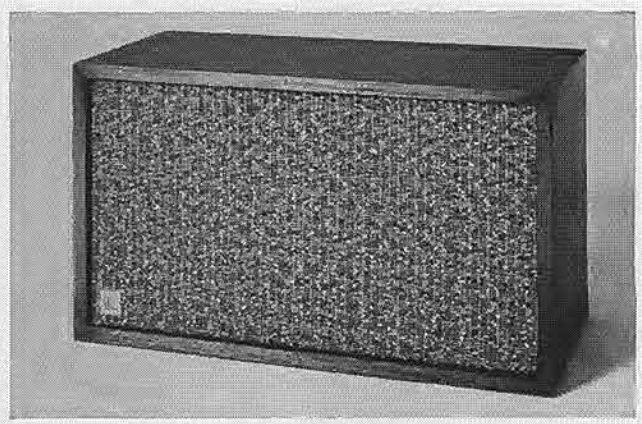
The acoustic suspension principle that is responsible for the AR's bass performance was described in the AR-1 TITH report, so readers who are not familiar with it are advised to refer to the earlier report.

The AR-2 has a tweeter level control recessed into its rear panel (and I must admit I prefer this arrangement to the AR-1's step-type adjustment), so the system's balance can be adjusted to suit a wide variety of tastes in brightness or lack thereof. With the control set to suit my taste (best described as row-M-oriented), oscillator tests indicated that bass was smooth and very clean to below 40 cycles, was audibly enfeebled but still there at 35, and dropped out somewhere around 30 cycles. No doubling was audible at any frequency.

From 1,000 to 4,000 cycles there was a slight, broad dip in the response (averaging perhaps 2 db down), a gradual rise to original level at 8,000 cycles, and some minor discontinuities from there out to 12,000 cycles. Then there was a slow droop to 14,000 cycles, with rapid cutoff above that.

Because of its slightly depressed "presence" range, the AR-2 has what is to me a refreshingly sweet, smooth, and highly listenable sound. Music is reproduced transparently, and with very good detail. Its high end is unobtrusive, but its ability to reproduce the guttiness of string tone and the tearing transients of a trumpet indicate that it *is*, indeed, contributing highs when needed. This, I feel, is as it should be.

Its low end is remarkably clean and, like the AR-1, prompts disbelief that such deep bass could emanate from such a



The AR-2: "deep bass from a small box."

small box. Bass definition is good, but the over-all sound does not have quite the foundation of deep bass that I have heard from the AR-1.

The AR-2 is not a spectacular speaker, in that it won't throw percussion and pistol shots at you from twenty paces, and it does not give the sensation of hugeness and power that a full-sized horn or a multiple-woofer system can produce. But it will reproduce music with a faithfulness that can be appreciated musically or sonically, as your mood dictates.

Like the AR-1, the AR-2 should be judged purely on its sonic merits . . . not on the theoretical basis of its "restrictive" cabinet size. When so judged, it can stand comparison with many speakers of considerably greater dimension and price. — J.G.H.

MANUFACTURER'S COMMENT: We are glad to see that HIGH FIDELITY chose to emphasize those characteristics of the AR-2 that we consider most important in a speaker system — cleanness and uniformity of frequency response.

We would like to suggest that the reader take the last sentence

Continued on page 156

*"Tested in the Home," October, 1955.

NEW

New AM-FM Tuner puts wide band FM, wide range AM within your budget!

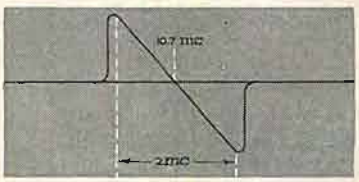
Completely new in styling . . . in engineering . . . in performance . . . the H. H. Scott model 300 AM-FM tuner embodies many new engineering features found nowhere else.

- Selectivity is superior to conventionally designed tuners because of the wide-band detector.
- Circuitry is completely drift-free . . . without the need for troublesome AFC.
- Cross-modulation is minimized so strong local stations do not appear at several points on the dial.
- AM section features wide-range circuitry. Reception is so good on fine AM stations you'll think you are listening to FM.

h.h. Scott

**Because of the demand for this new H. H. Scott tuner it may be temporarily out of stock. Be sure to get your order in soon.*

Famous musicians like Metropolitan Opera singer Jerome Hines choose H. H. Scott components for their own homes.



Wide-band FM circuitry eliminates co-channel and adjacent channel interference — makes tuning drift-free.

Precision-ray tuning eye makes it simple to tune precisely on both AM and FM.

When you tune the H. H. Scott 300 to a weak FM station next to a strong one, it stays in tune perfectly. Ordinary tuners using AFC rather than Wide-Band, wander from the weak station to the strong, making it impossible to tune to weak stations. Smooth acting slide-rule dial is extra-long giving better band spread, so stations are easy to separate.

The new 300 is a perfect match to H. H. Scott's Best Buy Amplifier . . . the famous "99". This 22 watt complete amplifier is only $99.95. This means that for only $259.90 you can have a complete H. H. Scott system.

Additional Technical Information — Model 300

FM sensitivity 3 microvolts for 20 db of quieting; 2 megacycle wide-band detector; 10 kc sharp-tuned whistle filter; outputs — main, multiplex, tape; tuned RF stage insures high sensitivity and selectivity on both AM and FM; two position AM bandwidth for Normal and High Fidelity programs; size in mahogany accessory case 15½w x 5h x 12½d. $159.95. Choice of handsome accessory cases at $9.95 and $19.95.

Prices slightly higher west of Rockies.

Shown below: H. H. Scott's new model 300 AM-FM tuner

Furniture and Accessories Courtesy Rapids Furniture, Boston.

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Continued from page 154

in this report literally, and that he investigate its accuracy (or lack thereof) at his sound dealer's establishment. Size differences between the AR-2 and any other system should, of course, be ignored.

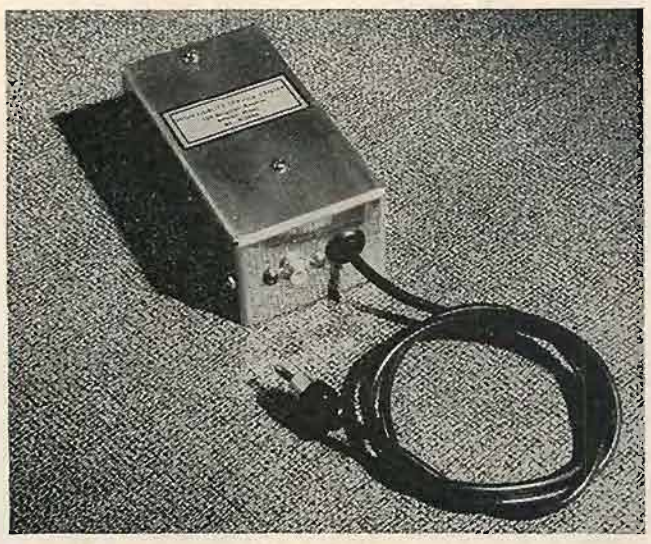
High Fidelity Service Center Transistorized Preamplifier

SPECIFICATIONS (furnished by manufacturer): a self-powered booster preamplifier for use with low-output magnetic cartridges. **Frequency response:** ±1 db, 20 to 20,000 cps. **Gain:** 20 db. **Power supply:** single mercury cell battery. **Battery life:** 8 to 12 mo. **Input voltage:** up to 5 mv. **Output impedance:** 5,600 ohms to high-impedance input. **Dimensions:** 4 in. long by 2¼ wide by 1¾ high. Supplied with RETMA input socket and 20-in. output cable, terminated by RETMA plug. **Price:** $15. **MANUFACTURER:** High Fidelity Service Center, 129 Brighton Ave., Allston, Mass.

This is a single-transistor booster amplifier, designed for use with any magnetic pickup cartridge whose output is too low to drive adequately an average phono preamplifier-control unit.

Most phono preamps are designed to operate with pickup cartridges that produce 5 mv or more output. If it is desired to use a lower-output cartridge, some means must be devised to boost its output to a level sufficiently high to override the preamplifier's hum and noise. Input transformers are generally used for this purpose, but a transformer that is good enough to pass an undistorted signal is likely to be quite costly, and may amount to more than the cost of the cartridge itself.

Modern transistors lend themselves admirably to booster preamp service, since their noise, distortion, and frequency



The booster connects between pickup and preamp.

range characteristics can be made comparable to a fine transformer, and at much lower cost. This preamplifier is designed for that purpose, and it works admirably.

It is equipped with a standard phono input socket, and an output cable with a phono plug attached to it. The pickup's cable plugs into the booster preamp, and the booster's output goes into the phono preamp's magnetic pickup input. That's all there is to it; the booster has its own battery power supply, which operates at all times, and the manufacturer claims that battery life is almost equal to the normal shelf life of the mercury battery, which would probably amount to about a year.

Because of the very low signal voltages involved, I was unable to make definitive distortion tests on the booster preamp. Frequency response tests showed that the unit exceeded its specifications, and listening tests with a high-quality low-level magnetic pickup and my standard system failed to reveal any form of sonic deterioration in the booster.

This is the most that could be asked of any component; the device works splendidly, and since the resistive loading on all very low-output cartridges is noncritical, there is good reason to assume that this booster preamplifier will work equally well with any low-level cartridge.

All in all, an excellent component, at a reasonable price.

— J.G.H.

Stephens E-3 Speaker System

SPECIFICATIONS (furnished by manufacturer): a three-way loudspeaker system, in Eames-designed rear-vented enclosure. **Frequency range:** 20 to 20,000 cps. **Power capacity:** 25 watts program. **Impedance:** 16 ohms. **Speakers:** 103LX woofer, P-30 midrange with 825H ten-cell exponential horn, 214 compression-loaded tweeter. **Dimensions:** 30 in. high by 32 wide by 18 deep, over-all. **Price:** $590. **MANUFACTURER:** Stephens Tru-Sonic, Inc., 8538 Warner Dr., Culver City, Calif.

Charles Eames is best known for his contemporary designs of toys, industrial commodities, and home furnishings (notably the cuplike chairs that are much more comfortable than they look), but it took someone like Stephens to foresee the possibilities of an Eames-designed speaker system.

The resulting E-3 system (which stands for Eames-three-way) combines the best of Stephen's speakers with some startlingly effective design innovations by Eames. Evidently, the basic premise of the E-3 cabinet is, perhaps logically, that a speaker system should *look* like a speaker system. Thus, the entire midrange horn mouth is left exposed, its shape is emphasized by the white trim lines along the edges of the cell openings, and the woofer's shape and function are suggested by a round, slightly projecting opening that resembles a drum head.

Surrounding the woofer opening is a panel of white dull-surfaced Micarta, while the grille cloths covering the woofer and the left-hand side of the front panel are colored slate gray and beige, respectively. The entire front surface is framed in brushed aluminum, and the sides and top of the enclosure are finished in hardwood veneer — on our sample unit — and the cabinet is set on 7-inch aluminum legs. The whole thing is very striking in appearance, and whether or not you like it will depend upon your feeling about this modern style of furniture design.

The midrange horn in the E-3 system is retractable; it can be slid out until its outer edges are flush with the front panel, placing the center of the mouth about 3 inches in front of the speaker panel, for maximum horizontal and vertical dispersion. Stephens claims 100 degrees horizontal and 40 degrees vertical dispersion with the horn in its forward position.

Level controls are provided for the midrange speaker and the super-tweeter, to allow for adjustment to suit room acoustics. Strangely, though, the E-3 manages to retain its particular sonic flavor over a wide range of balance settings, so those who like the forceful projection of this system need not be concerned about losing it through manipulation of the controls.

Sweeping an oscillator through the E-3's range, with the level controls set to suit my taste for musical balance, I found slightly rising response from 1,000 to 4,000 cycles, a gradual dip from there back to normal, a minor, broad peak at 8 kc, and then a number of very moderate, narrow peaks extending out beyond 13,000 cycles. Below 1,000 cycles, there was a broad, smooth hump at 500 cycles, another at 100, and another of much lesser proportions at 40 cycles. Response fell off rapidly below 40. Some tone doubling was detected, but this was limited to the frequency range below 60 cycles.

Continued on page 158

The only quality AM-FM Tuner designed for

STEREO

There's no such thing as obsolescence with H. H. Scott's new AM-FM Stereo tuner, Model 330-C. Use it as an AM tuner; as an FM tuner; or use both sections together for simultaneous AM-FM stereo reception. Top quality reception is assured on *both* FM and AM by H. H. Scott's unique wide-band FM circuitry and wide range AM circuitry.

That's why if you're planning to buy a tuner there is only *one* logical choice . . . the tuner that's designed for the future . . . the H. H. Scott Stereo Tuner.

h.h. Scott

Famed musicians like Conductor Alfred Wallenstein choose H. H. Scott components for their own homes.

For FM-only installations choose the H. H. Scott FM tuner, Model 310B . . . the most sensitive, most selective tuner you can buy today. $169.95

Technical Specifications:
330C AM-FM Stereophonic Tuner:

FM Section: Sensitivity 2 microvolts for 20 db. of quieting; 2 megacycle wide-band detector; wide band circuits assure freedom from drift and high selectivity; 2½ db. capture radio; automatic gain control.

AM Section: Wide range AM circuitry for reception of high fidelity AM broadcasts; adjustable band-width including wide-range, normal, and distant positions; sharply tuned 10 kc. whistle filter.

Tuning meter on both FM and AM; outputs include: stereophonic, FM and AM monaural outputs, multiplex output, and tape recorder; dimensions in accessory mahogany case 15½w x 5h x 12½d. $199.95 Choice of handsome cases at $9.95 and $19.95.

Prices slightly higher west of Rockies

The H. H. Scott 330c Stereo tuner is shown below in a Stereo system with two H. H. Scott 99 complete amplifiers *Furniture and Accessories Courtesy Rapids Furniture, Boston.*

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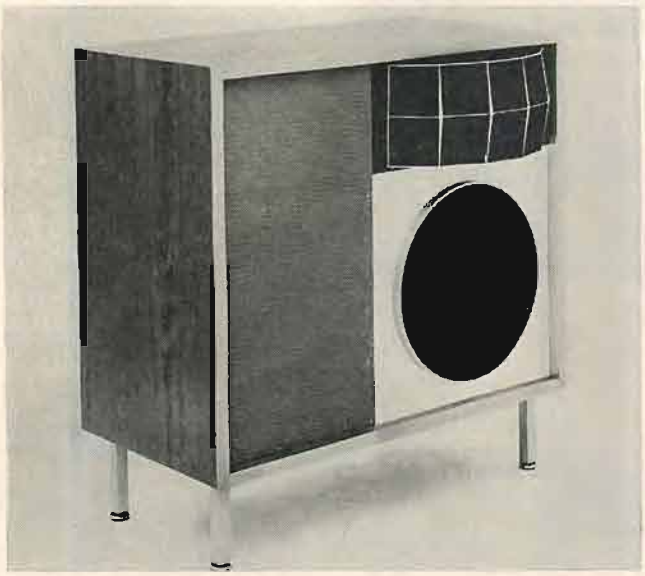
Continued from page 156

Sonically, the E-3 has the forward sound one generally associates with horn-loaded middle and upper-range compression drivers.

It tends to stress the brassiness and guttiness of instruments, and reproduces complex orchestral passages with very good definition and detail. Its bass is full and tight, and blending between the three drivers is excellent at typical listening distances. (Close listening betrays the fact that the super-



Stephens' Eames-designed E-3 speaker system.

tweeter is located to the left of the midrange horn.) The over-all sound is remarkably open, and the E-3 seems somehow able to project and at the same time give the impression that the sound is coming from an auditorium behind the speakers.

For those who like the projection and bite of a good horn system, the Stephens E-3 warrants serious consideration.

—J.G.H.

Berlant BRX Broadcast Recorder

SPECIFICATIONS (furnished by manufacturer): a dual-speed recorder and playback unit for single-channel or multi-channel applications. **Speeds:** 7.5 or 15 ips. **Reel capacity:** will take up to 10½-in. diameter reels. **Frequency response:** ±2 db, 40 to 15,000 cps @ 15 ips; ±2 db, 50 to 13,000 cps @ 7.5 ips; down no more than 4 db @ 15,000 cps @ 7.5 ips. **Flutter and wow:** below 0.1% @ 15 ips; below 0.2% @ 7.5 ips. **Signal-to-noise ratio:** 55 db per proposed NARTB standard test. **Total harmonic distortion:** 2% @ Zero VU level. **Timing accuracy:** better than 0.8%. **Shuttle speeds:** less than 60 sec. for 2,500 ft. **Starting time:** 0.1 sec. @ 15 ips. **Metered indications:** bias current, record level, playback level. **Heads:** any combination of up to five half-track, full-track, or stereo heads. **Sensitivity:** —55 dbv on microphone input, 0.1 volt on line input, for Zero VU level. **Input impedances:** 1 megohm on microphone input (50 ohms available with plug-in #500075 transformer; 250 ohms with plug-in #500077 transformer); 200,000 ohms on line input. **Inputs:** two from high-level line or high- impedance or low-impedance microphone. **Controls:** microphone volume, line volume, output selector and volume control (Source, Tape), meter output selector (Bias, Record, Output), AC power, bias meter set, bias current adjust, playback high-frequency equalization (two controls), speed selector (7.5, Off, 15), function control (Run, Stop, Cue, Edit), record safety button. **Outputs:** up to 6 volts from cathode follower, or +4 VU at 600 ohms with plug-in #500074 transformer. DC filament supply. Fuse accessible from top of amplifier chassis. **Tubes:** 2 — 12AX7, 12AT7, 2 — 12AU7, 12BH7, 6X5GT. **Weight:** Mechanism, in carrying case, 43 lb; Amplifier, 10 lb. **Dimensions:** Mechanism only, 14 in. high by 19 wide by 6 behind panel; Amplifier, 5¼ in. high by 19 wide by 6 behind panel. **Price:** $495 to $995, depending on head array. **Carrying cases:** $80 to $100 per set; $180 to $300 per set, with self-contained 10-watt monitor amplifier and speaker. **MANUFACTURER:** American Electronics, Inc., 655 W. Washington Blvd., Los Angeles 15, Calif.

Berlant-Concertone offers in these recorders one of the most richly bewildering selections of tape uses I've encountered. Because of the mechanism's five-head capacity, practically any desired combination of recording and playback functions can be set up, which explains the necessarily vague price listings at the foot of the specifications section. Available heads include full-track, half-track (top or bottom), or stacked stereo heads for erasure, recording, or playback. These heads, in combination with one or two record-playback amplifiers and a few external accessories, allow you to record or play back in practically any way you can think of.

The basic Berlant-Concertone recorder comprises two items: a rugged, three-motor, dual-speed transport mechanism and a separate record/playback amplifier. The Berlant Model 30 mechanism has a hysteresis-synchronous capstan drive motor (for maximum timing accuracy in broadcast work and for disc mastering) whose shaft operates directly as the tape capstan, in opposition to a rubber-tired idler wheel. The rewind and fast forward motors are split-phase induction types.

A lower-priced drive mechanism, designated the Concertone Model 20, is available with an induction drive motor and shaded-pole reeling motors, but the mechanisms are otherwise the same in construction.

The three-position switch (visible above the function control knob in the illustration) selects 7.5 or 15 ips tape speeds, or shuts off the drive motor power.

Directly below the speed selector switch are two coaxially-mounted tape control levers. The smaller of the two (with its lever pointing upwards) operates a power potentiometer to give continuously-variable rewind and fast forward speeds. High-speed reeling can damage tapes, particularly the thin-based mylar varieties, so Berlant's variable-speed shuttling is a useful feature, apart from the fact that it greatly facilitates cueing over short lengths of tape. The shuttle control lever and the larger function control lever are mechanically interlocked, so tape cannot be damaged by attempts to operate in two modes at once. The function lever's CUE position releases the capstan idler wheel but keeps the tape in contact with the heads, so the tape may be shuttled back and forth across the playback head by hand, to locate the precise spot for an editing cut. Then when the function lever is flipped to EDIT, the tape lifts away from the heads and a gate at the edge of the loading slot opens to expose the heads, allowing a grease pencil to be inserted for marking the tape directly opposite its playback head. These editing facilities are just two of the features of Berlant-Concertone recorders that suggest careful tailoring to the needs of the professional and the serious amateur recordist.

The record button (at the bottom of the head cover) is interlocked with the function control so that it cannot be depressed while the recorder is running. To record, the button must be pushed before the tape is started, and it releases automatically when the function lever is returned to its STOP position.

At opposite sides of the head cover are two guide wheels, each equipped with a rotating flange and a guide pin. The flanged sections are lightly spring loaded, so when the tape is threaded around them and is running through the recorder, the guide pins put a bend in the tape which effectively irons out feed irregularities, such as might be caused by sticky splices. The left hand guide flange trips a microswitch power cutoff if allowed to swing through its full rotation,

Continued on page 160

BEST BUY

The 99 — more features than ever before — still only $99.95.

Features like these make the 22 watt 99D complete amplifier a *real* Best Buy . . .

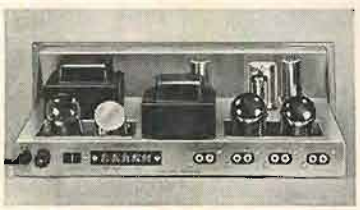
NEW! Front panel speaker selector switch. Choose between two speakers, or play both.

NEW! Front panel tape recorder monitor switch so you can check your tapes as you record them.

• Pickup selector switch lets you choose between either record changer or turntable • Tape playback channel lets you play pre-recorded tapes direct from tape heads without external pre-amp • Separate rumble and scratch filters make even old and worn records sound good • Separate bass, treble and loudness controls • All aluminum chassis and direct current on pre-amplifier tube heater assures inaudible hum levels.

h.h. Scott

Famous artists like Metropolitan Opera soprano Eleanor Steber choose H. H. Scott components for their own homes.



Back and top view of the 99 showing accessibility of all external connections. The spacious layout of all parts on this aluminum chassis assures conservative operating temperatures and long life of electronic parts.

"... (The 99) will drive an AR Janszen speaker system at uncomfortably loud levels without distortion or hum, even with an ESL cartridge minus transformer, and that is one of the most exacting listening tests one can apply to an amplifier."
— Audio League Report, Feb. 1957 (Vol 2. No 4)

Perfect Companions — H. H. Scott's FM tuner (model 311) is a perfect match for the 99. At $129.95 it's a best-buy too!

Additional Technical Information:
Power rating 22 watts; green dot controls for simplified operation; frequency response flat 20cps to 30kc; harmonic distortion less than 0.8%; hum and noise 80db below full output; dimensions in mahogany case 15½w x 5h x 12½d. $99.95. Choice of handsome accessory cases $9.95 and $19.95.

Prices slightly higher west of Rockies.

Shown below: The new H. H. Scott 22 watt 99D complete Amplifier

Furniture and Accessories Courtesy Rapids Furniture, Boston.

H. H. Scott, 111 Powdermill Road, Maynard, Mass. Export Dept: Telesco International Corp., 36 West 40th Street, New York City

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Continued from page 158

so if the tape should break, or run out, the reeling motors are automatically stopped.

Tape reels are held in place by Berlant's clever Reelok hubs, which combine in one piece a center adaptor for 10½-inch reels and a clamp to affix any reel to the vertically-mounted mechanism. The Reelok fits over the reel turntable spindle, and is locked in place by firm pressure on its center button. Pressing the metal tongue at the side of the Reelok releases it. This is a simple and positive-acting reel clamp, but I am not sure how positive it might be after several months of hard use.

The entire mechanical unit is built onto a very rugged, ribbed aluminum plate, and its 19-inch panel width is the proper size for installation on a standard equipment rack frame.

The basic record/playback amplifier is fairly straightforward in design, but its flexibility is by no means conventional. All inputs and outputs are normally at high impedance (from a cathode follower), but each passes through a vacant chassis socket on its way to the chassis-mounted receptacles. Thus, if low impedances are desired for any of the inputs or outputs, plug-in transformers may be inserted in the appropriate chassis sockets. Separate input channels are provided for a microphone and high-level line, and each has its own independent volume control. This enables the microphone signal to be mixed with that from the high-level source (tuner or phono preamp output).

The Berlant 30 series amplifier is equipped with professional Cannon XL input and output receptacles at the rear of the chassis, while the lower-priced Concertone 20 series amplifier has phone-type receptacles. Otherwise, the two amplifiers are identical.

Separate recording and playback channels are included on the compact chassis. Isolation of these functions allows a separate playback head to be used for monitoring the playback from the tape while recording. This is also standard professional practice.

Not standard, however, is Berlant's A-B fader control, which permits the recordist to make rapid transitions between the tape's output signal and that going to the tape. This control, which gives direct comparisons between the original and the recorded sounds, is for playback volume only . . . it does not affect the volume of the sound going onto the tape (this function is reserved for the MICROPHONE and LINE volume controls) . . . but instead of having its OFF position at the extreme left, the A-B fader has it at its mid-rotation point. Rotating the control to left of center fades up the volume of the signal being sampled *before* it is taped, while rotation to the right brings up the signal coming off the tape. This is an excellent idea, but I must admit I was initially disconcerted by the difference in volume levels encountered at similar settings to right and left of center. I would have felt better about this had there been provision for setting the two sources to identical level and *switching* between them.

Metering facilities are gratifyingly complete. The large illuminated recording-level meter is calibrated in per-cent modulation, with a secondary scale bearing decibel VU calibrations. A meter selector switch connects it to read recording level, playback level, or ultrasonic bias current. The latter is pre-set to read 100% on the scale when the record bias is optimized for the tape being used, and if doubts should subsequently arise as to the local AC supply voltage, the meter switch gives an instant check on ultrasonic bias current accuracy.

The amplifier chassis wisely does not include a power amplifier section, but feeds from a cathode-follower to three paralleled output receptacles, for monitor headphones, monitor amplifier, or main playback amplifier. If a low-impedance transformer is installed at the output, only the main amplifier output is affected.

Versatility breeds complication, and this description could become really involved were I to attempt descriptions of some of the stereo and sound-on-sound hookups. Suffice it to say that two record-playback amplifiers are needed for any application involving the simultaneous recording or playback of two different signals, and that a stereo system could conveniently use an additional ganged volume control ahead of the external amplifiers, so the volume could be adjusted without unbalancing the channel volumes.

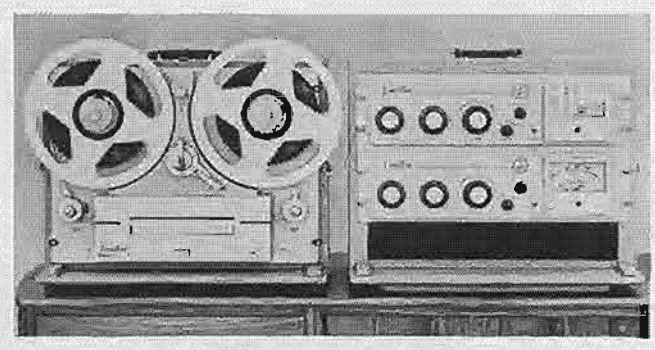
Berlant can supply a compact monitor power amplifier and speaker, both of which fit into a special carrying case for remote recording jobs or for use as a second speaker, in makeshift stereo systems. The monitor speaker, understandably, lacks bass and extreme highs, but its over-all balance is quite good enough for monitoring experimental mike placements, while its front-panel output receptacle allows a larger speaker system to be driven from it if wider range is desired.

Portable carrying cases are also available to house the mechanism alone, the mechanism plus one recording amplifier, and a Berlant four-channel input mixer.

The unit we received for testing was a Model 33 stereo recorder and playback unit, with separate erase heads for each track. The separate erase heads allow the recorder to be used for making or playing half-track tapes, and cross-channel interference between the two halves of the stereo playback head is so low that one track of a dual-track tape will play without any audible interference from the other track.

The transport mechanism handled very well, showing no tendency to spill tape when switching from one mode to another.

The stop and start functions were smooth and positive, and the controls had that solid, comfortable feel that is characteristic of professional-quality recording equipment. The



The Berlant monaural-stereo system.

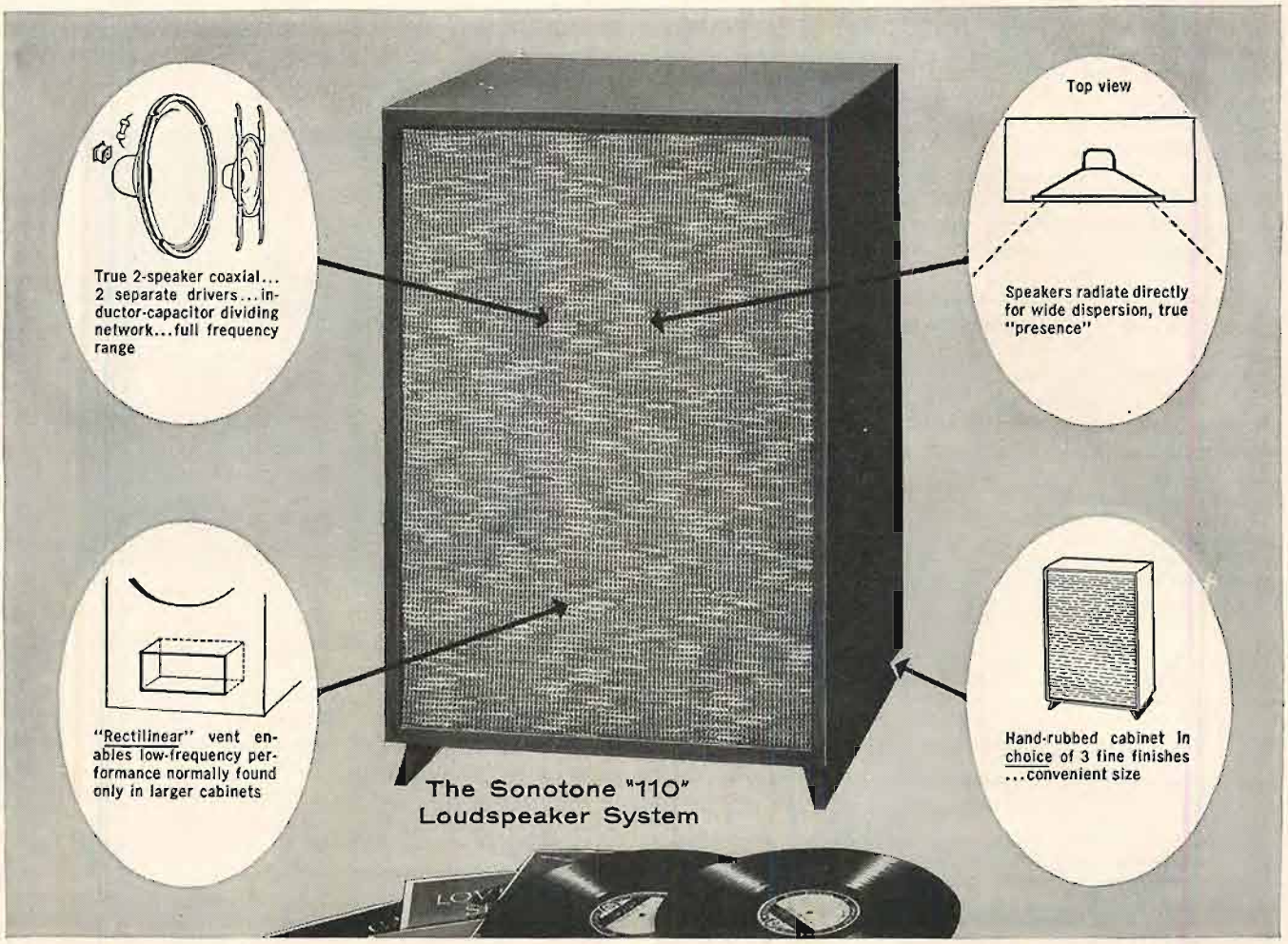
variable-speed shuttle control behaved erratically for about the first five hours of use (probably because of dirt on the potentiometer contact surfaces), but finally settled down to a smooth, firm control action. This shuttle control was a delight to use; I could start with a slow rewind, bring it up to terrifying speed, and then creep it down toward the end of the reel so the tape would pull free with a minimum of stress and no tearing of the last inch or so of tape.

Flutter and wow on our test Berlant were exceedingly low most of the time, but serious wow that developed near the end of each tape suggested that the supply reel drag brake might have been out of adjustment.

Sound quality was very good, both from its own tapes and from commercially recorded tapes. Measured with a 7.5 ips test tape recorded to the NARTB standard curve (which is used for commercial recordings), the Berlant produced response that was within 1 db of flat to around 1,000 cycles, gave a broad 3 db rise centered at 5,000 cycles, and re-

Continued on page 162

Sonotone announces a true coaxial speaker system for only $79.50



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The Sonotone "110" Loudspeaker System

Speaker	CA-12 12-inch coaxial
Power handling capacity	10 watts
Frequency range	40-14,000 cycles
Resonant frequency	50 cycles
Crossover frequency	2000 cycles
Impedance	15 ohms
Flux density	12,000 gauss

Cabinet: 30" x 14" x 20". Available in mahogany, blond or walnut hand-rubbed finish on birch.
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TESTED IN THE HOME

Continued from page 160

turned to normal level at 10,000 cycles, where the test tape ended. A tape recorded on the Berlant (at 7.5) showed much the same response, except that there was a broad *dip* in the response around 5,000 cycles. The high end was found to be down only 3 db at 15,000 cycles — 1 db better than its high end specification.

Thus, sound from NARTB tapes was on the bright side, and the recorder's sound at both speeds, and playing its own and NARTB tapes exhibited a glassy, crisp quality, with a tight, clean low end.

Use of the A-B fader control while recording music indicated that the Berlant was closely duplicating the original sound at both speeds, although as might be expected, there was a barely detectable superiority of detail at the 15 ips speed.

This equipment combines professional quality with a degree of flexibility that is uncommon in professional recorders. There are not many recording requirements that American Electronics, Inc. cannot meet with one of their units, but as a direct result of this flexibility, the accompanying instruction booklet is sometimes confusingly unspecific. The operating instructions are clear and unambiguous, but you'd better have your dealer show you how to interconnect some of the more complicated systems. — J.G.H.

MANUFACTURER'S COMMENT: The friction catch mechanisms in the Reelok hub clamps will continue to give excellent service over long periods of hard usage. As with other devices using the same principle, care must be exercised in the use of the Reeloks.

The variations in level between the A and B settings of the A-B fader would not have been disconcerting to the writer had he been more familiar with the recorder. With the meter switched to Output, the A-B fader control can be set to give the same metered levels from its Source and Tape settings. Making a mental note of the settings will allow the user to select the proper setting for both sources, to give the same level on A and B.

Since the stereo recorder has two separate preamplifiers, there is no logical place for a ganged playback volume control. The proper place for this is in the external control preamplifier or master control section for the system.

Concerning the writer's observation of erratic shuttle control action, we suggest that he might have become more familiar with its use. Smooth operation of the shuttle control is not mastered within the first few reels of tape.

As pointed out, the speed variation near the end of the tape reel was caused by misadjustment of the "drag brake," or tape tension arm.

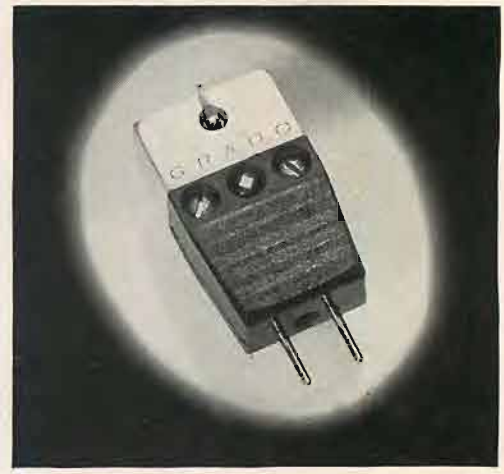
Finally, we agree that some of these unit combinations can get to be pretty complicated. This is the inevitable result of the uncommon flexibility of the equipment, so the help of an experienced hi-fi dealer can be invaluable.

The Grado Pickup

SPECIFICATIONS (furnished by manufacturer): a single-stylus moving-coil magnetic pickup. **Frequency range:** 18 to 28,000 cps. **Output:** 3 mv @ 5 cm/sec groove velocity. **Impedance:** 600 ohms. **Recommended load:** above 5,000 ohms. **Lateral compliance:** 15 x 10^{-6} cm/dyne. **Tracking force:** 1½ to 5 grams. **Total weight:** 15 grams. **IM distortion:** below 2% @ over 5 times normal recorded level. Built-in radioactive static charge neutralizer, 7 mr/hr intensity at source; estimated half life 1,600 years. **Price:** $45. **INPUT TRANSFORMER — Frequency response:** ± 0.5 db, 10 to 30,000 cps. **Harmonic distortion:** unmeasurable at 40 mv input, over the rated frequency range **Hum level:** — 90 db, rel. 1 v. **Price:** $15. **MANUFACTURER:** Grado Laboratories, 4614 Seventh Ave., Brooklyn 20, N. Y.

At the time of writing this report, the Grado pickup is notable for having the highest lateral compliance specification of any magnetic pickup, and I must confess that I at first viewed this remarkable rating with some misgivings. Extremely high compliance in a pickup usually sets rather stringent requirements for the arm it is to be used in, and almost invariably precludes using it in a changer. The Grado's full compliance, however, is stated to be effective only through a few degrees of stylus swing, and decreases rapidly at larger excursion. Thus, its compliance is high only as far as record groove modulation is concerned, but when the cartridge is subjected to relatively severe lateral pressure, it yields only so far, and no farther. As a result, I found that this pickup would track admirably at 3 grams in a good record changer, yet would actuate the trip mechanism without visible twisting of the stylus.

The Grado's plastic stylus cantilever strip extends far enough forward that it is readily visible to the operator, for easy and accurate groove spotting, and the cantilever's



The Grado tracks at 1½ to 5 grams.

length and flexibility provide very high vertical compliance, as well as low effective vertical mass. These factors are no doubt largely responsible for the Grado's gentleness to records and its almost complete absence of needle talk, although its high lateral compliance and low lateral mass are contributing factors, too.

Measurements on the Grado indicated very smooth response from 20 to 1,500 cycles, a broad dip amounting to perhaps 1½ db from 2,000 to 5,000 cycles, and back to normal again at 6,000. It stayed within about 1 db of flat to around 18,000 cycles, and above that I cease to trust our test records. These measurements, as well as the Grado's ambitious specifications, were reflected in its sound, which is outstandingly clean, smooth, and transparent. Its bass end is clean, detailed, and perhaps a little on the heavy side, and its over-all sound is sweet and uncolored, giving excellent reproduction of musical timbres. The pickup tracks very heavy modulations with ease, while its slight upper-middle-range response dip tends to reduce record surface noise and simultaneously counteracts some of the excessive brilliance encountered in many speaker systems.

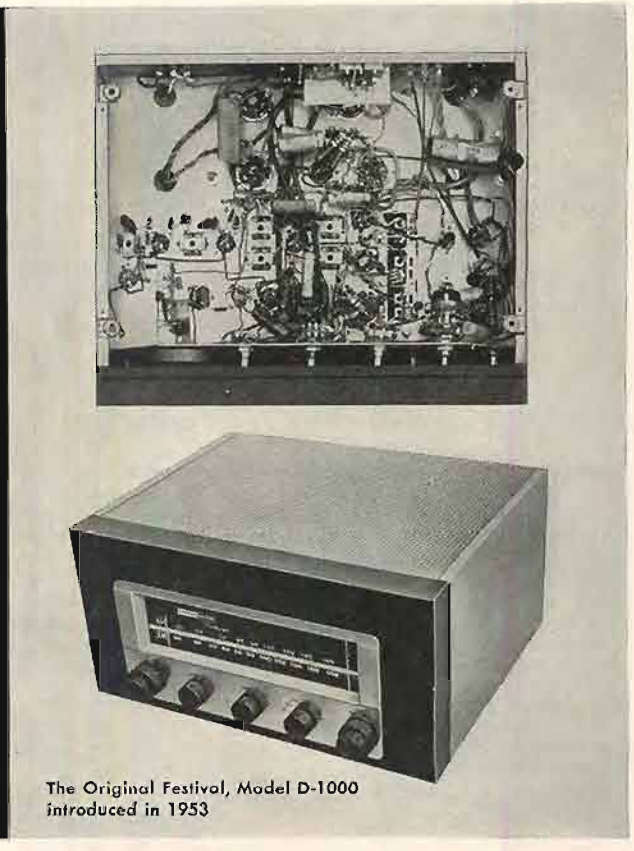
Since the Grado's output is low, it may be necessary to use its input matching transformer when feeding some limited-gain preamp-control units. There need not, however, be any concern about sonic deterioration due to the transformer; I could neither measure nor hear any qualitative difference between the pickup alone and the pickup with its transformer, and the transformer is exceedingly insensitive to inductive hum interference.

The Grado is a new item in the high fidelity field, so as always, I must append the reservation that only time will tell how well it withstands the rigors of hard usage. I found no trace of deterioration during the six weeks I used it, so I see no good reason to doubt its dependability over longer periods of time. —J.G.H.

MANUFACTURER'S COMMENT: Since the quality and range of any pickup's bass response is largely dependent upon the tone arm used, there will be observable differences in the sound of a cartridge when

Continued on page 164

The 1958 Recital II
Model TA-120



The Original Festival, Model D-1000
introduced in 1953

NOW and THEN

It wasn't too long ago that high fidelity was the exclusive property of the devoted few. In four short years, however, dramatic developments in technology and product design have stimulated tremendous public interest. Today — high fidelity is the new family entertainment center.

When the original Harman-Kardon Festival (*see above*) appeared, it created genuine excitement. Here was a significant new approach to high fidelity—an instrument unique in electrical design and exciting in its styling. The Festival was the first complete quality high fidelity system on a single chassis. It sparked the trend away from complicated "machinery type" instruments to the handsome coordinated units so popular today.

As most high fidelity products, the first Festivals were produced with conventional hand wiring. The precision printed wiring of the new Recital II (*see above*) contrasts sharply with the earlier maze of wires and parts.

Printed wiring, pioneered and proved in the U. S. Guided Missile and Earth Satellite programs — locks each critical component in its one best position and thereby assures exact reproduction of the engineer's design. Because this process virtually eliminates the human variable in production, each Recital II conforms to the laboratory standard in every detail. The opportunity for complete inspection provided by this technique is further guarantee of reliability and trouble-free performance. *The Recital II is guaranteed for one year from purchase date.*

Comparison of our two units reflects other significant advances. In a handsomer, more functional chassis, the Recital II incorporates a 20 watt amplifier, as did the original Festival, but with the exclusive, Controlled "H" circuitry, it operates almost 100% more efficiently. It actually creates less heat than a 10 watt amplifier of conventional design.

The Recital II includes greatly improved tone controls plus a host of additional features such as a speaker selector switch for multiple speaker systems, rumble filter and equalized high gain tape input. The FM tuner is more sensitive and more stable — the AM tuner is vastly improved.

The American Society of Industrial Designers recently selected the Recital II for official U.S. display at the Milan Triennale, world's most important exhibit of industrial design.

Further dramatic evidence of progress is its price. During a period when the price of high fidelity products has increased an average 12%, the Recital II, for $189.95, costs almost 10% less than the original Festival.

In short, today's Recital II provides more useful operating features, vastly improved performance and sensible price in a distinguished design.

Other fine features of the Recital II include: Automatic Frequency Control to insure accurate tuning automatically; sensitive AM with automatic volume control and built-in ferrite antenna; dynamic loudness contour control to provide precise balance for your own hearing characteristics; enormously effective bass and treble tone controls to adjust for the acoustics of your room, and selectable record equalization to assure correct reproduction of your entire library. Enclosure and control panel are finished in brushed copper, the knobs and control frame in matte black. The Recital II is 14-3/4" wide x 3-5/8" high x 10-15/16" deep. Simply plug in a suitable loudspeaker and record player and a high fidelity system of incomparable performance and unique good looks is yours.

The Recital II Price is $189.95
Slightly higher in the West

P.S. Harman-Kardon's new Festival II, the Model TA-1040, is today's leader in single unit high fidelity receivers. It includes a magnificent preamplifier, an AM-FM tuner which rivals theoretical perfection and a 40 watt hum-free, distortion-free power amplifier.

FREE: *Beautiful, new fully illustrated catalogs. Describe complete Harman-Kardon component and package lines, include information on high fidelity and guides on how and where to buy high fidelity. Send for your copies to Dept. H-10 Harman-Kardon, Inc., Westbury, N. Y.*

harman kardon

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it is used with different arms. In a good arm, the Grado cartridge resonates at about 6 cycles, and at 10 cycles is 2.5 decibels above the 1,000-cycle reference level.

In a less satisfactory arm, this resonance may occur at a higher frequency and may be more severe, and even though extremely low frequencies cannot be reproduced as steady tones, they can and will color the over-all sound. Therefore, a good pickup arm is just as important as a good pickup cartridge.

Heathkit W-6M Power Amplifier

SPECIFICATIONS (furnished by manufacturer): a high-power amplifier with built-in output tube balancing facilities. **Rated power:** 70 watts continuous; 140 watts peak. **Frequency response:** ±0.5 db, 6 to 70,000 cps, at ½ watt; ±0.25 db. 20 to 20,000 cps, at 70 watts. **IM distortion:** less than 0.1% @ 5 watts; less than 1% @ 70 watts. **Sensitivity:** 1.1v input produces 70 watts output. **Outputs:** 4, 8, and 16 ohms, and 70-volt line output. **Auxiliary power:** power available for preamplifier, with provision for external AC switching. Two AC power outlets, one switched and one unswitched. **Hum and noise:** 90 db below 70 watts. **Tube balancing:** front-panel meter, switch, and bias adjustments, to set proper plate current in each output tube. **Feedback:** 20 db, constant. **Damping factor:** continuously variable from 0.5 to 10 by front-panel calibrated control. **Tubes:** 12AU7, 12AX7, 12BH7, 2-6550; 4 silicon power-supply rectifiers and 1 selenium bias-supply rectifier. **Dimensions:** 11⅞ in. deep by 9⅛ high by 14¼ wide. **Weight:** 43½ lbs. **Price:** $109.95. **MANUFACTURER:** The Heath Company, Benton Harbor, Mich.

The W-6M is Heath Company's newest power amplifier kit. Their W-5M, although an excellent amplifier, is rated at 25 watts — hardly enough to compete in the high-power race now in progress. Everyone has been waiting with interest to see what Heath would produce in the 50 to 100-watt power output range.

The W-6M has been worth waiting for; it will supply 70 watts of very clean, stable power over the entire range from 20 to 20,000 cps, with plenty to spare, and it is not difficult to build. Its component parts are of high quality, and are operated conservatively. It is a truly fine amplifier and, even if you count your hours of construction time as work, a very good investment.

The input section is basically that of a stabilized Williamson amplifier. Rather than driving the output stage directly, however, the push-pull voltage amplifier stage is connected to a 12BH7 cathode follower, which furnishes direct low-impedance drive to the 6550 Class-AB output stage. This means simply that the output stage operates conventionally in Class A at low and intermediate power levels, but that it can be driven much harder than a standard Williamson using the same output tubes. The maximum undistorted power output is far greater because of this, and the overload point is reached less suddenly. Fixed bias is used, individually adjusted for each tube by controls on the front panel. A meter (also on the front panel) can be switched to indicate plate current in each output tube; the bias controls are adjusted to match each reading to a red line scribed on the meter. By this method, unmatched output tubes can be balanced perfectly and the bias set to exactly the right value — all without external test instruments. As the tubes age, moreover, they can be kept in balance until they deteriorate so badly that replacement is necessary. This metering system is, in effect, a tool with which a nontechnical owner can keep the most critical section of his amplifier operating at peak performance indefinitely.

A variable damping control, calibrated directly in damping factor from ½ to 10, is supplied. This calibration is valid for all three speaker load impedances. An equal range of damping factors for all speaker loads is achieved in an unusual way: the speaker or speakers, whatever their total impedance, are connected to a single pair of output terminals. A polarized impedance-selector plug is then inserted into the appropriate one of four receptacles marked 4, 8, and 16 ohms, and 70-volt line. The proper value of current-feedback resistor is selected in each of the first three positions to obtain the correct range of damping factors. As the damping factor control is turned, the ratio of current feedback to voltage feedback is changed; but both feedback loops are negative, and the total feedback remains constant. Therefore, the gain, distortion, and frequency response of the amplifier remain unchanged for a resistive load. This is not true of many damping-factor control circuits in use. In the 70-volt line position of the impedance selector plug, incidentally, the damping factor control is inoperative; it should be left at the "10" setting.

Four long-life silicon rectifiers are used in the power supply, replacing a vacuum-tube rectifier. They not only provide longer trouble-free service, but give better regulation under heavy loads. Operating power for a preamplifier-control unit is available at an octal receptacle on the back panel; the AC power leads are also brought out to this receptacle for external on-off switching. One switched and one unswitched AC outlet are furnished. If an external power switch is not used, the appropriate pins of the octal receptacle must be connected together.

The instruction manual is complete and unambiguous, with large pictorial diagrams and step-by-step wiring directions to guide the novice in assembling his W-6M. Parts identification information, trouble-shooting hints, soldering instructions, a table of normal voltages, and a remarkably detailed 10-page section giving normal-performance test results round out the manual. It is no exaggeration to say that this manual alone makes it possible for the completely inexperienced to build the W-6M successfully.

Our construction time was just about 10 hours, working slowly and carefully. The only difficulty we encountered after we turned on the amplifier was a blown fuse; one of the 12BH7 cathode resistors had shorted to the chassis,

The Heathkit W-6M 70-watt power amplifier.

grounding the bias for one of the output tubes. Turning the resistor slightly fixed that. When replacing a fuse, by the way, use a slow-blow type — the initial surge of current that occurs in the power supply when the amplifier is turned on after a previous warm-up is likely to blow out a fast-acting fuse.

In our bench tests we found that the W-6M exceeded all its specifications easily except that for noise and hum. We measured it as 87 db below 70 watts, rather than the specified 88db! Even that, of course, is negligible and inaudible with your ear more than a foot away from an average speaker. Distortion was so low that we couldn't even meas-

Continued on page 166

to the satisfied perfectionist...

JBL

Congratulations. Traditionally, the high fidelity enthusiast is a restless seeker after perfection, constantly changing, altering, trading... But the man who owns JBL Signature loudspeaker components is different. He has reached a condition of serenity, confident that further search would be superfluous. Our records show that most JBL Signature owners have previously owned other speakers. The man who uses a JBL Signature D130 knows he has the most efficient fifteen-inch extended range loudspeaker available — the only one made with a four-inch voice coil. He knows that he can employ the D130 as a superb low frequency unit when he progresses to the ultimate excellence of a JBL Signature two-way divided network system by adding either an 075 or 175DLH high frequency unit. With an acoustical lens he knows he has the only completely successful solution to the problem of high frequency beaming. And the man who owns a Hartsfield knows he possesses the most desirable loudspeaker system ever made. The man with a JBL Signature loudspeaker enclosure in his living room possesses an exquisite piece of cabinet work — a permanent home furnishing accessory — as well as a meticulously engineered acoustical enclosure. Yes, you owners of JBL Signature loudspeaker components are to be congratulated... on your taste, judgment, and foresight. You still own the finest ever made.

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Continued from page 164

ure it below 5 watts. The damping factor control setting made no significant difference in distortion with normal loads.

Transient performance was excellent at both extremes of the frequency range; it was impossible to make the amplifier unstable with any combination of DF control setting and load reactance or magnitude. The sound was beautifully clean and tight throughout the entire spectrum. Compared directly with a fine 40-watt amplifier, on a direct-radiator speaker of average efficiency in a 14-by-16-foot listening room, the W-6M was noticeably superior on certain types of music. On large choral works for example, the 40-watter often clipped peaks when the W-6M did not, and this was at realistic — not excessively loud — levels.

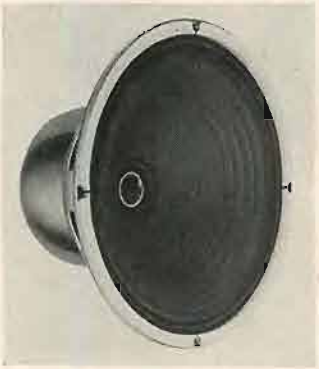
We can say unreservedly, without any "for the money" qualification, that the W-6M is one of the best power amplifiers you can buy. — R.A.

GE Woofer, Tweeter, and Crossover

SPECIFICATIONS (furnished by manufacturer): **A1-403 WOOFER — Frequency range:** 40 to 1,500 cps. **Rated power:** 25 watts program; 50 watts peak. **Impedance:** 8 ohms. **Crossover frequency:** 1,500 cps. **Magnet weight:** 14.5 oz, Alnico 5. **Dimensions:** 12⅜ in. diam. by 7 deep. **Price:** $29.95. **A1-404 TWEETER — Frequency range:** 1,500 to 15,000 cps. **Rated Power:** 25 watts program. **Impedance:** 8 ohms. **Crossover frequency:** 1,500 cps. **Dimensions:** 4⅜ in. diam. by 2½ deep. **Price:** $18.95. **A1-421 CROSSOVER NETWORK — Impedance:** 8 ohms in and out. **Crossover frequency:** 1,500 cps. **Power rating:** 20 watts continuous. **Attenuation characteristic:** 12 db/octave to woofer, 6 db/octave to tweeter. **Dimensions:** 4¼ in. high by 3½ wide by 4½ deep, over-all. **Price:** $13.95. **MANUFACTURER:** General Electric High Fidelity Section, Fazio Bldg., Old Liverpool Rd., Liverpool, N. Y.

These speaker units from GE are a first-class object lesson to the high-fidelity shopper who is sometimes tempted to put too much stress on published specifications and price scaling. Both the woofer and tweeter are what can unreservedly be called budget-priced, and their specifications are certainly modest in view of the number of "20 to 20,000-cycle" speakers listed in catalogues. But in this particular case, both the prices and the specifications are misleading in an unfortunate direction; these are much better speakers than one would be led to believe.

The woofer, which bears a superficial resemblance to GE's popular 1201 full-range unit, is a 12-incher with a concentrically corrugated cone, corrugated paper edge suspension,



The A1-403 woofer's frequency response cuts off sharply above 1,500 cps, so it does not require an external crossover network.

and a 1½-inch voice coil. Its measured free-air resonance is around 60 cycles, its efficiency is fairly high, and its bass characteristic seems better suited to horn loading or bass reflex cabineting than to infinite baffling. The most unusual thing about the A1-403 woofer, though, is its built-in crossover. The woofer itself is *acoustically* designed to give fairly steep rolloff above 1,500 cycles, so it does not require an electrical crossover network to supply low-pass filtering action. This, I feel, is an excellent idea, not only because of the resulting cost saving, but also because the lack of an inductance between the woofer and amplifier allow the latter's full damping factor to be utilized, for maximum control of the woofer cone. GE has carried this approach a step further by thoughtfully adding the tweeter half of a crossover network to the speaker itself. There are two pairs of input connectors to the A1-403: one pair for the leads from the amplifier, and the other for connection to an external tweeter. The tweeter output is connected in series with a 5 mfd capacitor, which gives a crossover at a measured 3,000 cycles into the GE tweeter. Surprisingly enough, the "hole" in the response that would be expected to occur when the woofer is cut off at 1,500 cycles

The GE cone tweeter and crossover network.

and crossed into the A1-404 tweeter at 3,000 cycles, is not noticeable in listening tests. This is because the tweeter's *acoustic* output actually rises from 3,000 down to 1,500 cycles. This maintains its linear output to the requisite 1,500-cycle point where the woofer takes over.

The tweeter itself is a 3-inch cone unit with a protective perforated metal grille mounted across it. The tweeter's efficiency is almost identical to that of the woofer, so when used together, they are refreshingly neutral in sound, and very highly listenable. With the woofer installed in a properly tuned bass-reflex enclosure, its audible frequency response below 1,500 was smooth to around 500 cycles, with a minor response dip from there to 200, and essentially smooth response from 200 down to 40. Cutoff was sharp below 40, and doubling was audible but insignificant throughout the low bass range. By ear test the tweeter showed a very slight rise in response above 3,000 cycles, its output began to diminish gradually above 7,000 cycles, and cutoff was rather abrupt above 12,000 cycles.

On musical material, the GE two-way system sounded very well balanced, notably lacking in shrillness, and generally of high musical quality. Blending between the two drivers was excellent, and the over-all impression was of smoothness, detail, and cleanness. Bass definition was quite good, but neither frequency extreme was, of course, as well represented as in more ambitious (and costlier) systems. At the price, though, the GE woofer and tweeter are going to be hard to beat for all-around listenability.

The A1-421 crossover network is designed to enable the A1-404 tweeter to be coupled with other makes of 8-ohm woofer. According to my measurements, it provides 6 db/octave crossover below 3,000 cycles for the tweeter, and 12 db/octave above 1,800 cycles for the woofer. The slow tweeter crossover combines with the tweeter's characteristics to give an effective 12db/octave 1,500-cycle attenuation.

The DC resistance of the series inductance in the woofer section of the GE crossover was measured at 0.7 ohms, which is low enough to preserve most of the amplifier's damping factor. — J.G.H.

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Music offers its greatest pleasures to those who participate in the making of it. Your pleasure—playing a CONN Organ—will add greatly to the pleasure your hi-fi system is now bringing into your home.

But can you play an organ? A little piano technique is a help, but not at all necessary. The simplest of music, expressed in the inherent tonal beauty of the CONN, sounds rich and satisfying—relaxing at the touch of one stop tab—stimulating at the touch of another.

The CONN Minuet here pictured has two 44-note manuals, a 13-note pedalboard, built-in hi-fi speakers, and 23 voice and coupler controls. Styling by Raymond Loewy is "modified traditional," and the choice of finishes includes mahogany, walnut, limed oak and maple. The price of the Minuet is under $1500.

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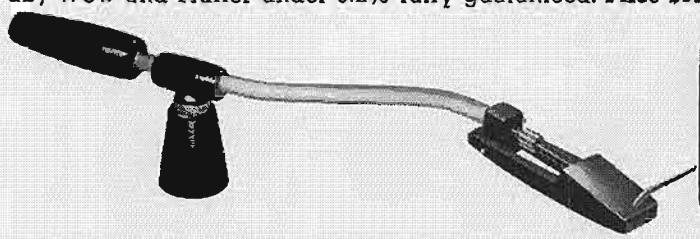
Completely new, with specs and design features by I/S, clean, modern styling by Noel Martin and magnificent precision workmanship in the tradition of the world-famed Japanese cameras. Definitely superior to anything in its price range. We honestly believe you can't buy a better, more dependable turntable for high fidelity use at any price! **Styling** – Satin black motor plate, mustard yellow mat, red speed selector control, aluminum adjustment control. **Speeds** – 16, 33.3, 45, 78. Magnetic adjustment for perfect speed accuracy. **Stroboscope** – Neon-illuminated with observation window. **Motor** – New patented condenser-type 4 pole, with extra winding. Runs smoother, cooler, with less flux leakage than ordinary turntable motors. Superior to some hysterisis motors. **Foolproof Rim Drive** – Silent, no gears to rumble, no belts to stretch. **Turntable** – Die cast aluminum, machined, balanced. Wt. 4 lbs. **Motorplate** – Heavy die cast aluminum, can't warp or bend. 14.5" x 14.5". Built-in Level Bubble. **Conservative Ratings** – S/N -40 db, Wow and Flutter under 0.2% fully guaranteed. **Price $65.**



New I/S Tone Arm

Model I/S/12. Completely new, patented design by Charles Boegli. Lateral viscous damping soaks up resonances, reduces skidding or groove jumping. Extremely low vertical inertia reduces record and stylus wear; permits safe use of cartridges with low vertical compliance; easily tracks warped records. Adjustable horizontal static balancing reduces effect of floor vibration, aids perfect tracking. Plays 16" records, takes all standard cartridges. **Price $22.95.**

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part 2

A Hi-Fi Primer

by John H. Newitt

Part I of this series, designed for readers without technical knowledge or acquaintance with high-fidelity techniques, discussed the fundamental building blocks that comprise a basic high-fidelity system. This second installment treats their relationship to the essential facts of sound and hearing, in order to provide some explanation of their functioning in the reproduction of high-fidelity sound. Such an understanding is necessary if the reader is to select and combine components for optimum performance.

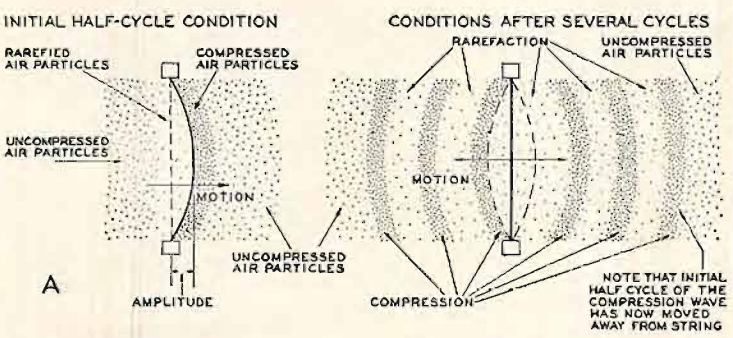
SOUND. Sound is simply a mechanical disturbance of air particles. For convenience, one might think of air as an elastic or jellylike mass that shakes as a loosely knit whole when a disturbance is set up in it. When the string of an instrument is plucked, it will oscillate rapidly back and forth and gradually will come to rest. As it does so, the sound that it produces gradually will die away. The intensity (amplitude) of the sound at any particular moment is directly dependent upon the distance (amplitude) of the string movement. The sound intensity therefore diminishes as the vibrating string loses its energy. We can readily realize that small amplitudes of vibration will disturb the air mass less than large ones. When our vibrating string has finally come to rest, the system has given up all of its mechanical energy in order to produce sound. The string must be plucked (mechanically charged, so to speak) before it again can produce sound.

Sound takes time to travel, as may be seen in Fig. 2-1 A. The whole jellylike mass does not vibrate at once when initially disturbed. Actually the propagation of sound starts at the point of disturbance and works outwardly in all directions until the whole mass is finally in vibration. Air particles do not adhere to each other, but each pushes against its neighbor (as one billiard ball upon another) to propagate a sound *wave*. This wave travels through the air mass just as an ocean wave is propelled through water. Wave movement, then, represents a transfer of energy from one place to another through some medium — air in the case of sound waves.

Since the sound wave results from friction between air particles and since this friction produces greater dissipation of the original sound energy as more particles are involved in transfer to a distant point, the intensity of sound diminishes as we get farther from the point of disturbance. Were it not for this frictional dissipation we should hear all sounds continuously all around the earth.

The disturbance that creates sound is brought about by the compression and rarefaction (decompression) of the air particles. Air particles will crowd together and become *compressed* as pressure is increased; they will spring apart and become *rarefied* as soon as pressure is decreased. Our vibrating string therefore will compress particles directly in its path and will decompress them as it moves away from them. After compression, air particles have a natural tendency to spring back to their former position, an elastic tendency making convenient and reasonably accurate the jellylike analogy previously referred to. Each compression action is directly followed by a rarefaction action which in turn is followed by another compression action as the wave travels through the air. One complete sound wave is comprised of one compression action and one rarefaction action. Fig. 2-1 B graphically depicts the action of a sound wave.

Sound Intensity. One of the most easily recognizable characteristics of sound is its intensity (or, subjectively speaking, loudness). A large mechanical disturbance will obviously create an intense sound wave since it represents a sizable displacement of air particles. It then follows that a large displacement of air particles would cause a large disturbance in our ear drums (if we were close to the source of the disturbance) and this would produce the effect of a loud sound. These two terms *Continued on page 171*



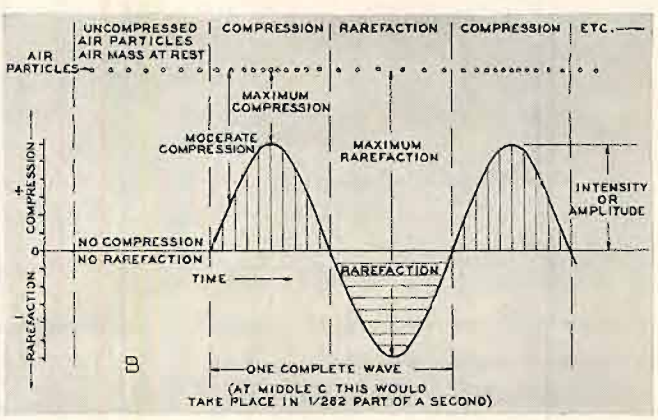


Fig. 2-1A, above: how a sound wave is produced. A vibrating string or diaphragm compresses the air particles in its path, and rarefies them in back. Fig. 2-1B, right: graphic picture of a sound wave.

Why you need every feature of these

NEW UNIVERSITY FOLDED-HORN ENCLOSURE KwiKits

MODEL KEN-12

Because . . . in performance, mechanical design, construction and ease of assembly, these new KwiKits are unquestionably the *very finest* enclosure kits—at any price!

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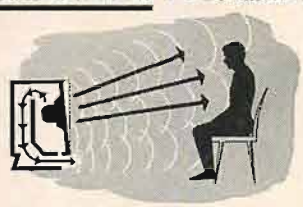
KEN-15 For 12"/15" speakers & systems 18½"D x 29"W x 35¼"H — $59.50 USER NET

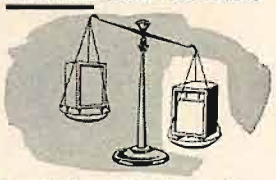
Adapter for mounting 12" speakers in KEN-15 — $1.50 User Net

ROOM-BALANCED PERFORMANCE



KwiKit acoustic design and tilted baffle combine direct speaker radiation and compensated rear horn loading in a way that blends bass, middle and treble ranges perfectly . . . for *uniform* response throughout the listening areas of a room.

HEAVIER CONSTRUCTION



Heavy ¾" first grade, fully cured lumber for top, bottom, sides and back . . . *not* flimsy ½" wood commonly used in "kits." Bigger, sturdier — *as much as 30% heavier* than others in the same price class. Eliminates spurious resonances so detrimental to achieving richer, cleaner bass reproduction.

PRECISION MECHANICAL DESIGN

Exterior and interior elements, even the cleats, fit snugly within close tolerance "rabbeted" grooves. Gluing and screwing of each piece results in reliably air-tight, permanent joints. No nails used. No pencil markings necessary. Mitering and plenty of glue blocks and bracing for truly rigid construction.

PLACE ANYWHERE IN ROOM

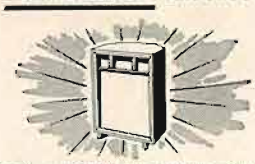
Underside view shows how advanced design, self-contained folded horn extends to the *front* of the cabinet, projecting low frequencies out into the room . . . not back into a corner, splashed against the walls. Small slot in base is resistively controlled vent which equalizes woofer diaphragm excursions in compression chamber. KwiKits are therefore independent of room furnishings, shape or placement and can be used against a flat wall, in a corner . . . even up in the air!

FOOLPROOF ASSEMBLY

All pieces are pre-cut and pre-drilled . . . *engineered* to go together quickly. All you need is a screwdriver! Baffle board is pre-cut . . . blank plugs and adapters supplied for easy installation of additional components as your system expands.

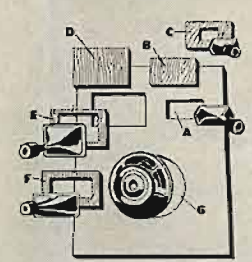
Your KwiKit includes all required hardware, plastic wood, glue, sandpaper, Tufflex insulation, easy-to-follow instructions *and* . . . special attention is given to packaging of KwiKits to insure safe, intact delivery to your door.

PROFESSIONAL RESULTS



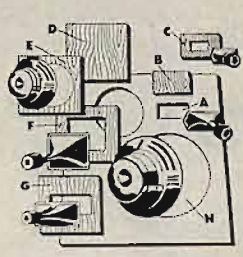
There's no end of decorative treatment you can give your KwiKit enclosure. Genuine Korina veneer is same as used in fine furniture, and provides a beautiful finish. Decorative front mouldings have been designed to complement and enhance your present decor. Exquisite, textured grille fabric is equally at home in settings of any period and is acoustically correct to prevent high frequency attenuation.

KWIKITS . . . THE PERFECT COMPLEMENT FOR P.S.E.*



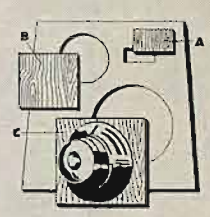
A—Hole cut out for HF-206.
B—Blank plug supplied when tweeter isn't used.
C—Adapter supplied cut out for UXT-5.
D—Blank plug supplied.
E—Adapter supplied cut out for 4409.
F—Adapter supplied cut out for H-600 horn.
G—Takes 312, UXC-123, Diffusicone-12, UXC-122, Diffaxials, 6200, 6201 wide-range speakers and C-12W woofer.

MODEL KEN-12
takes any 12" wide-range or woofer cone speaker and any tweeter or mid-range speakers.



A—Hole cut out for HF-206.
B—Blank plug supplied when tweeter isn't used.
C—Adapter supplied cut out for UXT-5.
D—Blank plug supplied.
E—Adapter supplied cut out for C-8W or Diffusicone-8.
F—Adapter supplied cut out for 4409.
G—Adapter supplied cut out for H-600 horn.
H—Takes 315-C, 6303, Diffusicone-15, Diffaxials, and C-15W, C-63W woofers.

MODEL KEN-15
takes any 15" wide-range or woofer cone speaker and any tweeter or mid-range speakers.



A and B—Blank plugs supplied.
C—Takes 312, UXC-123, Diffusicone-12, UXC-122 Diffaxials, 6200, 6201 wide-range speakers and C-12W woofer.

MODEL KEN-15
takes any 12" wide-range or woofer cone speaker when 12" adapter board (optional) is used.

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REMEMBER . . . if you like to build your own and save money too, the KwiKit is made to order for you . . . SEE YOUR DEALER TODAY!

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LISTEN *University® sounds better*

The 1958 Recital II
Model TA-120

The Original Festival, Model D-1000
Introduced in 1953

NOW and THEN

It wasn't too long ago that high fidelity was the exclusive property of the devoted few. In four short years, however, dramatic developments in technology and product design have stimulated tremendous public interest. Today — high fidelity is the new family entertainment center.

When the original Harman-Kardon Festival (*see above*) appeared, it created genuine excitement. Here was a significant new approach to high fidelity—an instrument unique in electrical design and exciting in its styling. The Festival was the first complete quality high fidelity system on a single chassis. It sparked the trend away from complicated "machinery type" instruments to the handsome coordinated units so popular today.

As most high fidelity products, the first Festivals were produced with conventional hand wiring. The precision printed wiring of the new Recital II (*see above*) contrasts sharply with the earlier maze of wires and parts.

Printed wiring, pioneered and proved in the U. S. Guided Missile and Earth Satellite programs — locks each critical component in its one best position and thereby assures exact reproduction of the engineer's design. Because this process virtually eliminates the human variable in production, each Recital II conforms to the laboratory standard in every detail. The opportunity for complete inspection provided by this technique is further guarantee of reliability and trouble-free performance. *The Recital II is guaranteed for one year from purchase date.*

Comparison of our two units reflects other significant advances. In a handsomer, more functional chassis, the Recital II incorporates a 20 watt amplifier, as did the original Festival, but with the exclusive, Controlled "H" circuitry, it operates almost 100% more efficiently. It actually creates less heat than a 10 watt amplifier of conventional design.

The Recital II includes greatly improved tone controls plus a host of additional features such as a speaker selector switch for multiple speaker systems, rumble filter and equalized high gain tape input. The FM tuner is more sensitive and more stable — the AM tuner is vastly improved.

The American Society of Industrial Designers recently selected the Recital II for official U.S. display at the Milan Triennale, world's most important exhibit of industrial design.

Further dramatic evidence of progress is its price. During a period when the price of high fidelity products has increased an average 12%, the Recital II, for $189.95, costs almost 10% less than the original Festival.

In short, today's Recital II provides more useful operating features, vastly improved performance and sensible price in a distinguished design.

Other fine features of the Recital II include: Automatic Frequency Control to insure accurate tuning automatically; sensitive AM with automatic volume control and built-in ferrite antenna; dynamic loudness contour control to provide precise balance for your own hearing characteristics; enormously effective bass and treble tone controls to adjust for the acoustics of your room, and selectable record equalization to assure correct reproduction of your entire library. Enclosure and control panel are finished in brushed copper, the knobs and control frame in matte black. The Recital II is 14-3/4" wide x 3-5/8" high x 10-15/16" deep. Simply plug in a suitable loudspeaker and record player and a high fidelity system of incomparable performance and unique good looks is yours.

The Recital II Price is $189.95
Slightly higher in the West

P.S. Harman-Kardon's new Festival II, the Model TA-1040, is today's leader in single unit high fidelity receivers. It includes a magnificent preamplifier, an AM-FM tuner which rivals theoretical perfection and a 40 watt hum-free, distortion-free power amplifier.

FREE: *Beautiful, new fully illustrated catalogs. Describe complete Harman-Kardon component and package lines, include information on high fidelity and guides on how and where to buy high fidelity. Send for your copies to Dept. H-10 Harman-Kardon, Inc., Westbury, N. Y.*

harman kardon

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Continued from page 162

it is used with different arms. In a good arm, the Grado cartridge resonates at about 6 cycles, and at 10 cycles is 2.5 decibels above the 1,000-cycle reference level.

In a less satisfactory arm, this resonance may occur at a higher frequency and may be more severe, and even though extremely low frequencies cannot be reproduced as steady tones, they can and will color the over-all sound. Therefore, a good pickup arm is just as important as a good pickup cartridge.

Heathkit W-6M Power Amplifier

SPECIFICATIONS (furnished by manufacturer): a high-power amplifier with built-in output tube balancing facilities. **Rated power:** 70 watts continuous; 140 watts peak. **Frequency response:** ±0.5 db, 6 to 70,000 cps, at ½ watt; ±0.25 db. 20 to 20,000 cps, at 70 watts. **IM distortion:** less than 0.1% @ 5 watts; less than 1% @ 70 watts. **Sensitivity:** 1.1v input produces 70 watts output. **Outputs:** 4, 8, and 16 ohms, and 70-volt line output. **Auxiliary power:** power available for preamplifier, with provision for external AC switching. Two AC power outlets, one switched and one unswitched. **Hum and noise:** 90 db below 70 watts. **Tube balancing:** front-panel meter, switch, and bias adjustments, to set proper plate current in each output tube. **Feedback:** 20 db, constant. **Damping factor:** continuously variable from 0.5 to 10 by front-panel calibrated control. **Tubes:** 12AU7, 12AX7, 12BH7, 2-6550; 4 silicon power-supply rectifiers and 1 selenium bias-supply rectifier. **Dimensions:** 11⅞ in. deep by 9⅛ high by 14¼ wide. **Weight:** 43½ lbs. **Price:** $109.95. **MANUFACTURER:** The Heath Company, Benton Harbor, Mich.

The W-6M is Heath Company's newest power amplifier kit. Their W-5M, although an excellent amplifier, is rated at 25 watts — hardly enough to compete in the high-power race now in progress. Everyone has been waiting with interest to see what Heath would produce in the 50 to 100-watt power output range.

The W-6M has been worth waiting for; it will supply 70 watts of very clean, stable power over the entire range from 20 to 20,000 cps, with plenty to spare, and it is not difficult to build. Its component parts are of high quality, and are operated conservatively. It is a truly fine amplifier and, even if you count your hours of construction time as work, a very good investment.

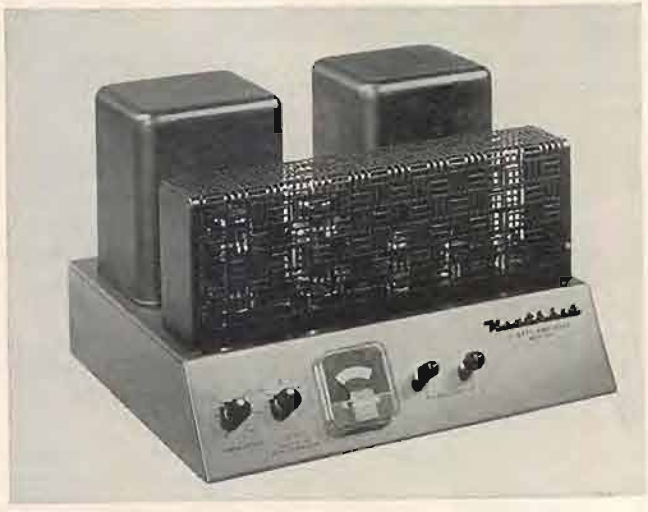
The input section is basically that of a stabilized Williamson amplifier. Rather than driving the output stage directly, however, the push-pull voltage amplifier stage is connected to a 12BH7 cathode follower, which furnishes direct low-impedance drive to the 6550 Class-AB output stage. This means simply that the output stage operates conventionally in Class A at low and intermediate power levels, but that it can be driven much harder than a standard Williamson using the same output tubes. The maximum undistorted power output is far greater because of this, and the overload point is reached less suddenly. Fixed bias is used, individually adjusted for each tube by controls on the front panel. A meter (also on the front panel) can be switched to indicate plate current in each output tube; the bias controls are adjusted to match each reading to a red line scribed on the meter. By this method, unmatched output tubes can be balanced perfectly and the bias set to exactly the right value — all without external test instruments. As the tubes age, moreover, they can be kept in balance until they deteriorate so badly that replacement is necessary. This metering system is, in effect, a tool with which a nontechnical owner can keep the most critical section of his amplifier operating at peak performance indefinitely.

A variable damping control, calibrated directly in damping factor from ½ to 10, is supplied. This calibration is valid for all three speaker load impedances. An equal range of damping factors for all speaker loads is achieved in an unusual way: the speaker or speakers, whatever their total impedance, are connected to a single pair of output terminals. A polarized impedance-selector plug is then inserted into the appropriate one of four receptacles marked 4, 8, and 16 ohms, and 70-volt line. The proper value of current-feedback resistor is selected in each of the first three positions to obtain the correct range of damping factors. As the damping factor control is turned, the ratio of current feedback to voltage feedback is changed; but both feedback loops are negative, and the total feedback remains constant. Therefore, the gain, distortion, and frequency response of the amplifier remain unchanged for a resistive load. This is not true of many damping-factor control circuits in use. In the 70-volt line position of the impedance selector plug, incidentally, the damping factor control is inoperative; it should be left at the "10" setting.

Four long-life silicon rectifiers are used in the power supply, replacing a vacuum-tube rectifier. They not only provide longer trouble-free service, but give better regulation under heavy loads. Operating power for a preamplifier-control unit is available at an octal receptacle on the back panel; the AC power leads are also brought out to this receptacle for external on-off switching. One switched and one unswitched AC outlet are furnished. If an external power switch is not used, the appropriate pins of the octal receptacle must be connected together.

The instruction manual is complete and unambiguous, with large pictorial diagrams and step-by-step wiring directions to guide the novice in assembling his W-6M. Parts identification information, trouble-shooting hints, soldering instructions, a table of normal voltages, and a remarkably detailed 10-page section giving normal-performance test results round out the manual. It is no exaggeration to say that this manual alone makes it possible for the completely inexperienced to build the W-6M successfully.

Our construction time was just about 10 hours, working slowly and carefully. The only difficulty we encountered after we turned on the amplifier was a blown fuse; one of the 12BH7 cathode resistors had shorted to the chassis,



The Heathkit W-6M 70-watt power amplifier.

grounding the bias for one of the output tubes. Turning the resistor slightly fixed that. When replacing a fuse, by the way, use a slow-blow type — the initial surge of current that occurs in the power supply when the amplifier is turned on after a previous warm-up is likely to blow out a fast-acting fuse.

In our bench tests we found that the W-6M exceeded all its specifications easily except that for noise and hum. We measured it as 87 db below 70 watts, rather than the specified 88db! Even that, of course, is negligible and inaudible with your ear more than a foot away from an average speaker. Distortion was so low that we couldn't even meas-

Continued on page 166

to the satisfied perfectionist...

JBL

Congratulations. Traditionally, the high fidelity enthusiast is a restless seeker after perfection, constantly changing, altering, trading... But the man who owns JBL Signature loudspeaker components is different. He has reached a condition of serenity, confident that further search would be superfluous. Our records show that most JBL Signature owners have previously owned other speakers. The man who uses a JBL Signature D130 knows he has the most efficient fifteen-inch extended range loudspeaker available — the only one made with a four-inch voice coil. He knows that he can employ the D130 as a superb low frequency unit when he progresses to the ultimate excellence of a JBL Signature two-way divided network system by adding either an 075 or 175DLH high frequency unit. With an acoustical lens he knows he has the only completely successful solution to the problem of high frequency beaming. And the man who owns a Hartsfield knows he possesses the most desirable loudspeaker system ever made. The man with a JBL Signature loudspeaker enclosure in his living room possesses an exquisite piece of cabinet work — a permanent home furnishing accessory — as well as a meticulously engineered acoustical enclosure. Yes, you owners of JBL Signature loudspeaker components are to be congratulated... on your taste, judgment, and foresight. You still own the finest ever made.

For the best sound available today — and in the foreseeable future — write for the name and address of the Authorized JBL Signature Audio Specialist in your community. He is standing by to fulfill your dream of verbatim reproduction.

"JBL" means **JAMES B. LANSING SOUND, INC.**

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Continued from page 164

ure it below 5 watts. The damping factor control setting made no significant difference in distortion with normal loads.

Transient performance was excellent at both extremes of the frequency range; it was impossible to make the amplifier unstable with any combination of DF control setting and load reactance or magnitude. The sound was beautifully clean and tight throughout the entire spectrum. Compared directly with a fine 40-watt amplifier, on a direct-radiator speaker of average efficiency in a 14-by-16-foot listening room, the W-6M was noticeably superior on certain types of music. On large choral works for example, the 40-watter often clipped peaks when the W-6M did not, and this was at realistic — not excessively loud — levels.

We can say unreservedly, without any "for the money" qualification, that the W-6M is one of the best power amplifiers you can buy. — R.A.

GE Woofer, Tweeter, and Crossover

SPECIFICATIONS (furnished by manufacturer): **A1-403 WOOFER — Frequency range:** 40 to 1,500 cps. **Rated power:** 25 watts program; 50 watts peak. **Impedance:** 8 ohms. **Crossover frequency:** 1,500 cps. **Magnet weight:** 14.5 oz, Alnico 5. **Dimensions:** 12⅜ in. diam. by 7 deep. **Price:** $29.95. **A1-404 TWEETER — Frequency range:** 1,500 to 15,000 cps. **Rated Power:** 25 watts program. **Impedance:** 8 ohms. **Crossover frequency:** 1,500 cps. **Dimensions:** 4⅜ in. diam. by 2½ deep. **Price:** $18.95. **A1-421 CROSSOVER NETWORK — Impedance:** 8 ohms in and out. **Crossover frequency:** 1,500 cps. **Power rating:** 20 watts continuous. **Attenuation characteristic:** 12 db/octave to woofer, 6 db/octave to tweeter. **Dimensions:** 4¼ in. high by 3½ wide by 4½ deep, over-all. **Price:** $13.95. **MANUFACTURER:** General Electric High Fidelity Section, Fazio Bldg., Old Liverpool Rd., Liverpool, N. Y.

These speaker units from GE are a first-class object lesson to the high-fidelity shopper who is sometimes tempted to put too much stress on published specifications and price scaling. Both the woofer and tweeter are what can unreservedly be called budget-priced, and their specifications are certainly modest in view of the number of "20 to 20,000-cycle" speakers listed in catalogues. But in this particular case, both the prices and the specifications are misleading in an unfortunate direction; these are much better speakers than one would be led to believe.

The woofer, which bears a superficial resemblance to GE's popular 1201 full-range unit, is a 12-incher with a concentrically corrugated cone, corrugated paper edge suspension,

The A1-403 woofer's frequency response cuts off sharply above 1,500 cps, so it does not require an external crossover network.

and a 1½-inch voice coil. Its measured free-air resonance is around 60 cycles, its efficiency is fairly high, and its bass characteristic seems better suited to horn loading or bass reflex cabineting than to infinite baffling. The most unusual thing about the A1-403 woofer, though, is its built-in crossover. The woofer itself is *acoustically* designed to give fairly steep rolloff above 1,500 cycles, so it does not require an electrical crossover network to supply low-pass filtering action. This, I feel, is an excellent idea, not only because of the resulting cost saving, but also because the lack of an inductance between the woofer and amplifier allow the latter's full damping factor to be utilized, for maximum control of the woofer cone. GE has carried this approach a step further by thoughtfully adding the tweeter half of a crossover network to the speaker itself. There are two pairs of input connectors to the A1-403: one pair for the leads from the amplifier, and the other for connection to an external tweeter. The tweeter output is connected in series with a 5 mfd capacitor, which gives a crossover at a measured 3,000 cycles into the GE tweeter. Surprisingly enough, the "hole" in the response that would be expected to occur when the woofer is cut off at 1,500 cycles

The GE cone tweeter and crossover network.

and crossed into the A1-404 tweeter at 3,000 cycles, is not noticeable in listening tests. This is because the tweeter's *acoustic* output actually rises from 3,000 down to 1,500 cycles. This maintains its linear output to the requisite 1,500-cycle point where the woofer takes over.

The tweeter itself is a 3-inch cone unit with a protective perforated metal grille mounted across it. The tweeter's efficiency is almost identical to that of the woofer, so when used together, they are refreshingly neutral in sound, and very highly listenable. With the woofer installed in a properly tuned bass-reflex enclosure, its audible frequency response below 1,500 was smooth to around 500 cycles, with a minor response dip from there to 200, and essentially smooth response from 200 down to 40. Cutoff was sharp below 40, and doubling was audible but insignificant throughout the low bass range. By ear test the tweeter showed a very slight rise in response above 3,000 cycles, its output began to diminish gradually above 7,000 cycles, and cutoff was rather abrupt above 12,000 cycles.

On musical material, the GE two-way system sounded very well balanced, notably lacking in shrillness, and generally of high musical quality. Blending between the two drivers was excellent, and the over-all impression was of smoothness, detail, and cleanness. Bass definition was quite good, but neither frequency extreme was, of course, as well represented as in more ambitious (and costlier) systems. At the price, though, the GE woofer and tweeter are going to be hard to beat for all-around listenability.

The A1-421 crossover network is designed to enable the A1-404 tweeter to be coupled with other makes of 8-ohm woofer. According to my measurements, it provides 6 db/octave crossover below 3,000 cycles for the tweeter, and 12 db/octave above 1,800 cycles for the woofer. The slow tweeter crossover combines with the tweeter's characteristics to give an effective 12db/octave 1,500-cycle attenuation.

The DC resistance of the series inductance in the woofer section of the GE crossover was measured at 0.7 ohms, which is low enough to preserve most of the amplifier's damping factor. — J.G.H.

"Do it yourself"...on a CONN ORGAN

Music offers its greatest pleasures to those who participate in the making of it. Your pleasure—playing a CONN Organ—will add greatly to the pleasure your hi-fi system is now bringing into your home.

But can you play an organ? A little piano technique is a help, but not at all necessary. The simplest of music, expressed in the inherent tonal beauty of the CONN, sounds rich and satisfying—relaxing at the touch of one stop tab—stimulating at the touch of another.

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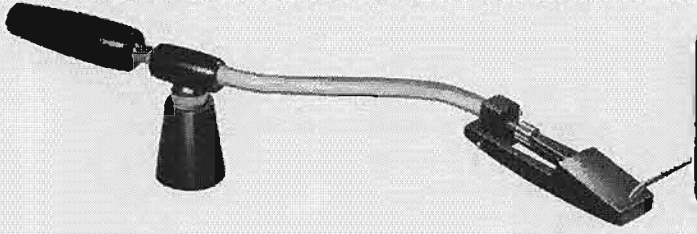

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part 2

A Hi-Fi Primer

by John H. Newitt

Part I of this series, designed for readers without technical knowledge or acquaintance with high-fidelity techniques, discussed the fundamental building blocks that comprise a basic high-fidelity system. This second installment treats their relationship to the essential facts of sound and hearing, in order to provide some explanation of their functioning in the reproduction of high-fidelity sound. Such an understanding is necessary if the reader is to select and combine components for optimum performance.

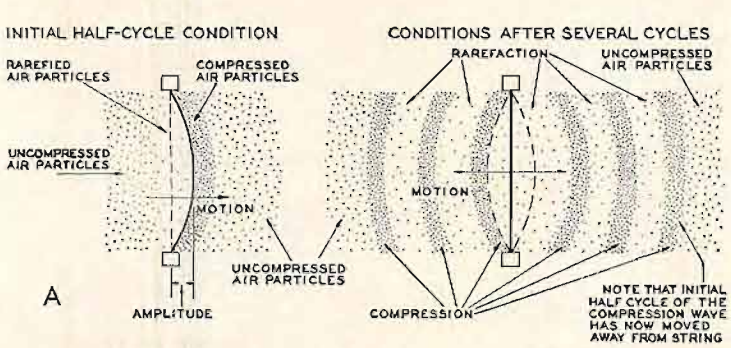
SOUND. Sound is simply a mechanical disturbance of air particles. For convenience, one might think of air as an elastic or jellylike mass that shakes as a loosely knit whole when a disturbance is set up in it. When the string of an instrument is plucked, it will oscillate rapidly back and forth and gradually will come to rest. As it does so, the sound that it produces gradually will die away. The intensity (amplitude) of the sound at any particular moment is directly dependent upon the distance (amplitude) of the string movement. The sound intensity therefore diminishes as the vibrating string loses its energy. We can readily realize that small amplitudes of vibration will disturb the air mass less than large ones. When our vibrating string has finally come to rest, the system has given up all of its mechanical energy in order to produce sound. The string must be plucked (mechanically charged, so to speak) before it again can produce sound.

Sound takes time to travel, as may be seen in Fig. 2-1 A. The whole jellylike mass does not vibrate at once when initially disturbed. Actually the propagation of sound starts at the point of disturbance and works outwardly in all directions until the whole mass is finally in vibration. Air particles do not adhere to each other, but each pushes against its neighbor (as one billiard ball upon another) to propagate a sound *wave*. This wave travels through the air mass just as an ocean wave is propelled through water. Wave movement, then, represents a transfer of energy from one place to another through some medium — air in the case of sound waves.

Since the sound wave results from friction between air particles and since this friction produces greater dissipation of the original sound energy as more particles are involved in transfer to a distant point, the intensity of sound diminishes as we get farther from the point of disturbance. Were it not for this frictional dissipation we should hear all sounds continuously all around the earth.

The disturbance that creates sound is brought about by the compression and rarefaction (decompression) of the air particles. Air particles will crowd together and become *compressed* as pressure is increased; they will spring apart and become *rarefied* as soon as pressure is decreased. Our vibrating string therefore will compress particles directly in its path and will decompress them as it moves away from them. After compression, air particles have a natural tendency to spring back to their former position, an elastic tendency making convenient and reasonably accurate the jellylike analogy previously referred to. Each compression action is directly followed by a rarefaction action which in turn is followed by another compression action as the wave travels through the air. One complete sound wave is comprised of one compression action and one rarefaction action. Fig. 2-1 B graphically depicts the action of a sound wave.

Sound Intensity. One of the most easily recognizable characteristics of sound is its intensity (or, subjectively speaking, loudness). A large mechanical disturbance will obviously create an intense sound wave since it represents a sizable displacement of air particles. It then follows that a large displacement of air particles would cause a large disturbance in our ear drums (if we were close to the source of the disturbance) and this would produce the effect of a loud sound. These two terms *Continued on page 171*



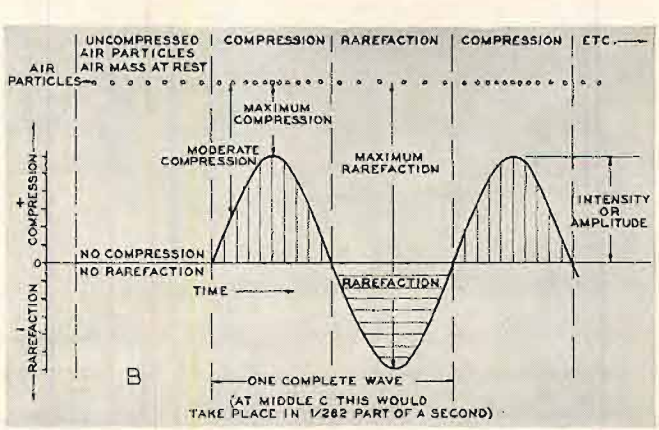


Fig. 2-1A, above: how a sound wave is produced. A vibrating string or diaphragm compresses the air particles in its path, and rarefies them in back. Fig. 2-1B, right: graphic picture of a sound wave.

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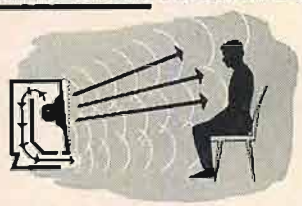

KwiKit acoustic design and tilted baffle combine direct speaker radiation and compensated rear horn loading in a way that blends bass, middle and treble ranges perfectly . . . for *uniform* response throughout the listening areas of a room.

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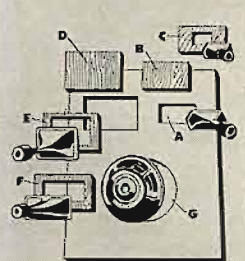
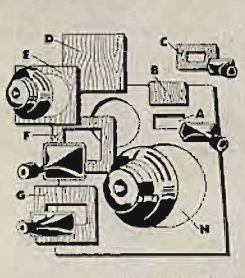


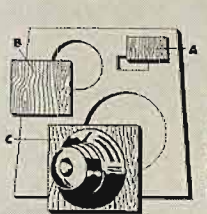
A—Hole cut out for HF-206.
B—Blank plug supplied when tweeter isn't used.
C—Adapter supplied cut out for UXT-5.
D—Blank plug supplied.
E—Adapter supplied cut out for 4409.
F—Adapter supplied cut out for H-600 horn.
G—Takes 312, UXC-123, Diffusicone-12, UXC-122, Diffaxials, 6200, 6201 wide-range speakers and C-12W woofer.

MODEL KEN-12
takes any 12" wide-range or woofer cone speaker and any tweeter or mid-range speakers.



A—Hole cut out for HF-206.
B—Blank plug supplied when tweeter isn't used.
C—Adapter supplied cut out for UXT-5.
D—Blank plug supplied.
E—Adapter supplied cut out for C-8W or Diffusicone-8.
F—Adapter supplied cut out for 4409.
G—Adapter supplied cut out for H-600 horn.
H—Takes 315-C, 6303, Diffusicone-15, Diffaxials, and C-15W, C-63W woofers.

MODEL KEN-15
takes any 15" wide-range or woofer cone speaker and any tweeter or mid-range speakers.



A and B—Blank plugs supplied.
C—Takes 312, UXC-123, Diffusicone-12, UXC-122 Diffaxials, 6200, 6201 wide-range speakers and C-12W woofer.

MODEL KEN-15
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should be clearly differentiated: the intensity of a sound is its physical, objective strength; the loudness is its subjective strength as interpreted by a listener. The two correlate only roughly.

Frequency. Frequency is just what the name implies. In relation to sound, it is the number of complete sound waves generated in the period of one second. A sound wave, as explained above, represents a complete compression and rarefaction cycle. Since the unit of time is understood, the exacting terminology of "cycles-per-second" is often simply referred to as "cycles." For example, when middle C is struck on the piano, the activated string will make exactly 262 complete excursions during the period of one second if the instrument is in tune. Middle C therefore is said to have a frequency of 262 cycles. High key notes are high in frequency and low key notes are low in frequency. This terminology corresponds in both musical and technical discussion. The frequency range for various instruments is shown in Fig. 2-2.

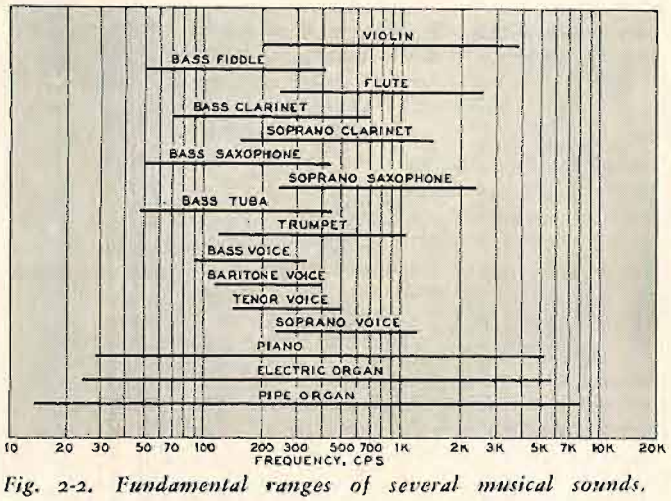

Fig. 2-2. Fundamental ranges of several musical sounds.

Harmonics and Timbre. A harmonic is the same thing as an overtone. In the case of middle C, 262 cycles is the fundamental and 524 cycles is the second harmonic (one octave above). Harmonics are integral multiples of the fundamental frequency, whereas octaves represent a 2:1 difference in frequency. When a fundamental note is struck on most musical instruments, the major part of the energy is developed at the fundamental but a smaller amount is developed at the second harmonic (one octave above) and a still smaller amount is developed at the third harmonic with ever decreasing amounts at the higher harmonic points. In some instruments, of course, the fundamental is lower in amplitude than some of the harmonics. From a practical standpoint, all harmonic energy that contributes to the timbre of an instrument is contained in the first few harmonics directly above the fundamental. A high-fidelity system therefore has to pass only the nearby harmonics. The high order harmonics have so little energy that it makes little difference whether they are present.

Timbre is richness of tone and is dependent directly upon the amount of harmonic energy present when a note is played. A piano at middle C is fundamentally 262 cycles and so is a violin at middle C. The piano sound at middle C is distinct from the violin sound due to a difference in the relative harmonic energies produced by each instrument. We hear the composite sound (the fundamental plus the harmonics) and thereby learn to recognize various instruments by their characteristic timbre. An organ has a great number of strong harmonics and therefore has a very rich tone (high timbre). A piccolo, by contrast, has very little, if any harmonic content and therefore is called a pure-tone instrument. Other instruments fall somewhere between these extremes. A pure tone is not generally considered pleasant for continuous listening, and this perhaps explains why there are many organ solos and very few piccolo solos. A musician will often resort to the use of vibrato (a slow variation in pitch) to effect an increase in timbre and will thereby enhance the pleasing quality of the produced sound.

It is clear that we will need a reproducing system that will pass all the important harmonics of our instruments if realism is to be preserved. If our amplifier is lacking in high-frequency response, for example, some of the harmonic content of certain instruments could be removed and they would sound unnatural. Such a condition constitutes a loss in fidelity. Loss of timbre is not the sole cause of low fidelity but it can be a serious contributor.

If we were to look at a graphic picture of a complex waveform (the composite of a fundamental and several harmonics), we should notice that it has a fairly irregular and bumpy contour compared with the relatively smooth contour of the pure-tone (fundamental only) waveform. The irregularity of the complex waveform is caused by the many high-frequency variations (fast variations), whereas its over-all rising and falling characteristic is determined by its low-frequency (slowly changing) fundamental. Fig. 2-3 illustrates such a situation. If we were to send our complex wave through an amplifier that would not pass anything above the fundamental frequency, the harmonics which go to make up the complex waveform would be removed and only the pure-tone fundamental would emerge. Likewise, if the tones from two different high-timbre instruments playing the same note in the same octave were sent through such an amplifier, they would produce an identical sound at the output of the system. Not only would both fundamentals be indistinguishable from each other but the emerging sound would not be recognizable as belonging to either instrument; the output would be simply a pure-tone piccolo note!

The need for exactly reproducing the fine variations of the complex wave now can be realized. The degree of accurate reproduction as the wave passes through the many blocks of our system is one measure of its over-all fidelity. Normally, we think of a high-fidelity system as being relatively even in response (amplitude) over a frequency range of 20 to 20,000 cycles per second. Very few people can hear much beyond 15,000 cycles and many can not hear this high. In order to preserve the waveform characteristics on the fine parts of the complex wave it is generally advisable to have a frequency-response characteristic in our equipment which to a comfortable extent exceeds that of the human ear. This rather complex subject will be taken up in a later article.

Distortion and Interference. It is evident, from our previous discussion, that where waveform distortion occurs to

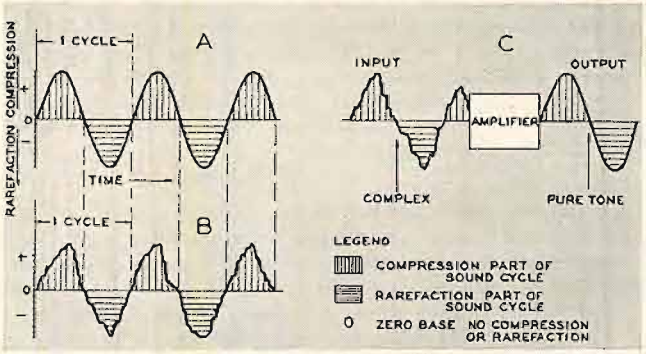

Fig. 2-3. A pure-tone (fundamental only) waveform is shown at A. At B is shown the same fundamental frequency with harmonics added, to make a complex tone. C depicts what happens to the complex waveform when it is passed through an amplifier that responds only to the fundamental frequency; such an amplifier would be said to have poor high-frequency response. Example is exaggerated, of course, for clarity.

an appreciable degree, the resulting sound will be audibly altered because it will not be identical to the original sound pattern picked up by the microphone. This is true regardless of the cause of the distortion. In passing through the many elements of a sound system, an electric waveform is subject to distortion from numerous sources, any one of which can seriously affect the resultant fidelity. The elimination of upper-frequency components caused the distortion discussed above. Any factor which adversely affects the relative original amplitudes for those components is termed frequency distortion. Distortion also can come about by the *addition* of unwanted energy to the complex wave, as well as the removal of energy from it. This is called *harmonic distortion* — the result of the generation of unwanted energy at harmonic frequencies; this "addition" can upset the normal pattern of the overtones and can detract from the realism of the over-all result.

Frequency distortion is the more tolerable form, since it is simply unequal amplification of certain frequencies in relation to other ones. Certain instruments can maintain reasonably correct harmonic relationships between the fundamental and the overtones even with frequency distortion present in the amplifier. Such an instrument might, however, be out of balance with some others in the orchestra. The aural effect of frequency distortion is much a matter of the individual listener's taste, since some people like heavy bass response while others like heavy treble response. Harmonic distortion, by contrast, usually makes the instruments themselves sound unrealistic and certainly is to be avoided. Since the over-all balance caused by frequency distortion (improper adjustment of tone controls) is subjective and since it is easy to correct in a good system, it is a matter for the listener's own consideration.

Another particularly serious form of distortion is called *intermodulation distortion* (IM). This will occur in an amplifier when harmonious tones beat together (react on one another) to produce an unharmonious result. Since the cause of this distortion is also the cause of harmonic distortion, amplifiers having very low amounts of intermodulation distortion will usually have low amounts of harmonic distortion as well. Distortion at full power output is the important factor to look for in equipment. It is relatively easy and inexpensive to get low distortion at low power.

Transient (impulse) distortion can adversely affect the realism of reproduced music. This effect is sometimes referred to as "hangover." A sudden transient, such as a sharply rising part of a signal waveform, can temporarily "upset" operating conditions within an amplifier, generating spurious voltages within the amplifier or loudspeaker system if provision against such an occurrence has not been taken in design. Hangover may be noticed in a poorly performing amplifier by a fuzziness (audible distortion) directly following periods of heavy orchestral sound. Hangover may occur in the loudspeaker as well as in the amplifier. If a sudden impulse is applied to the loudspeaker, it can be "shocked" into oscillation if it is not properly damped.[1] A single electrical pulse should move the speaker diaphragm in and out only once; but if the speaker is not damped (either electrically or mechanically or by both means), it may continue to vibrate several times of its own accord after the exciting pulse has passed. This additional motion (hangover) of course constitutes distortion since it generates unwanted sound waves. With a properly damped loudspeaker, it is possible to distinguish the sound of a bass fiddle from that of a bass drum. With an undamped speaker, one low-frequency sound will produce much the same sound as any other low-frequency sound since they both set up the same hangover action in the loudspeaker. The average jukebox is typical of this type of response since all that is wanted is a very loud low-frequency "boom." Hangover distortion in a loudspeaker occurs mostly at and around the low frequency resonant point of the speaker; in an amplifier it can occur at any frequency.

Phase distortion can affect the over-all response, and particularly affects the cleanness of staccato passages. Phase distortion is directly related to the frequency response of the amplifier, and an amplifier having a very wide frequency response will have good phase response (low-phase distortion) over a large part of its range. If the phase response is poor, the high-frequency components of a complex wave will traverse the amplifier in a different length of time from the low-frequency components. This will cause an effective displacement of the high-frequency components in relation to the low-frequency fundamental, obviously distorting the complex waveshape and causing an audible effect of "blurring" or fuzziness.

Another form of unwanted distortion could be more accurately described as interference, which is usually encountered in the form of hum and noise. Hum, in a well-designed amplifier, should be inaudible at the normal listening distance when the gain control of the system is well advanced. In any electronic amplifier, there is a certain basic noise level present. It is imperative that the signal supplied to the amplifier be of sufficient magnitude to "ride" comfortably above this level so that noise will not be audible at the loudspeaker even when the softest passages are played. This relation of the signal and its interference may be expressed technically as the signal-to-noise ratio and, needless to say, it should be fairly high under all operating conditions. In this respect, a factor of considerable importance is the dynamic range of the amplifier. If we set a value comfortably above the noise level which will be our minimum input value, this signal level will in turn constitute some definite value of output in a given amplifier. The dynamic range, then, is the available range (or ceiling) above this minimum output value; technically it is the ratio of maximum to minimum output.

If we attempt to get too much output from low power amplifiers by simply putting strong signals in, we will exceed the upper limits of the amplifier and the result will be clipping of the upper excursions of the waveform with very serious and very noticeable distortion. This effect is shown in Fig. 2-4. It is characteristic of very low-power amplifiers to distort before a suitable volume level is reached. As a test, turn the volume of a radio set on full and note the distortion. A hi-fi amplifier will far exceed this volume without distortion. Most good amplifiers are designed to have very little distortion up to their *Continued on page 176*

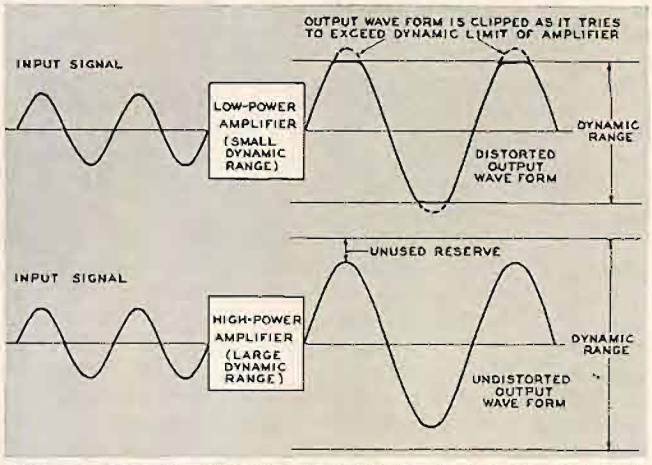

Fig. 2-4. Two identical signals applied to low-power and high-power amplifiers. The signal is too large for the low-power unit, causing it to overload and distort. The high-power amplifier handles its signal easily, with a safety margin; output signal is undistorted.

[1]Damping is the reduction of "overshoot." In an automobile, the shock absorbers "damp" the oscillating action of the car body and the springs which occur as sudden bumps are encountered. Damping stabilizes the situation so that only one up-and-down action is experienced per bump (impulse).

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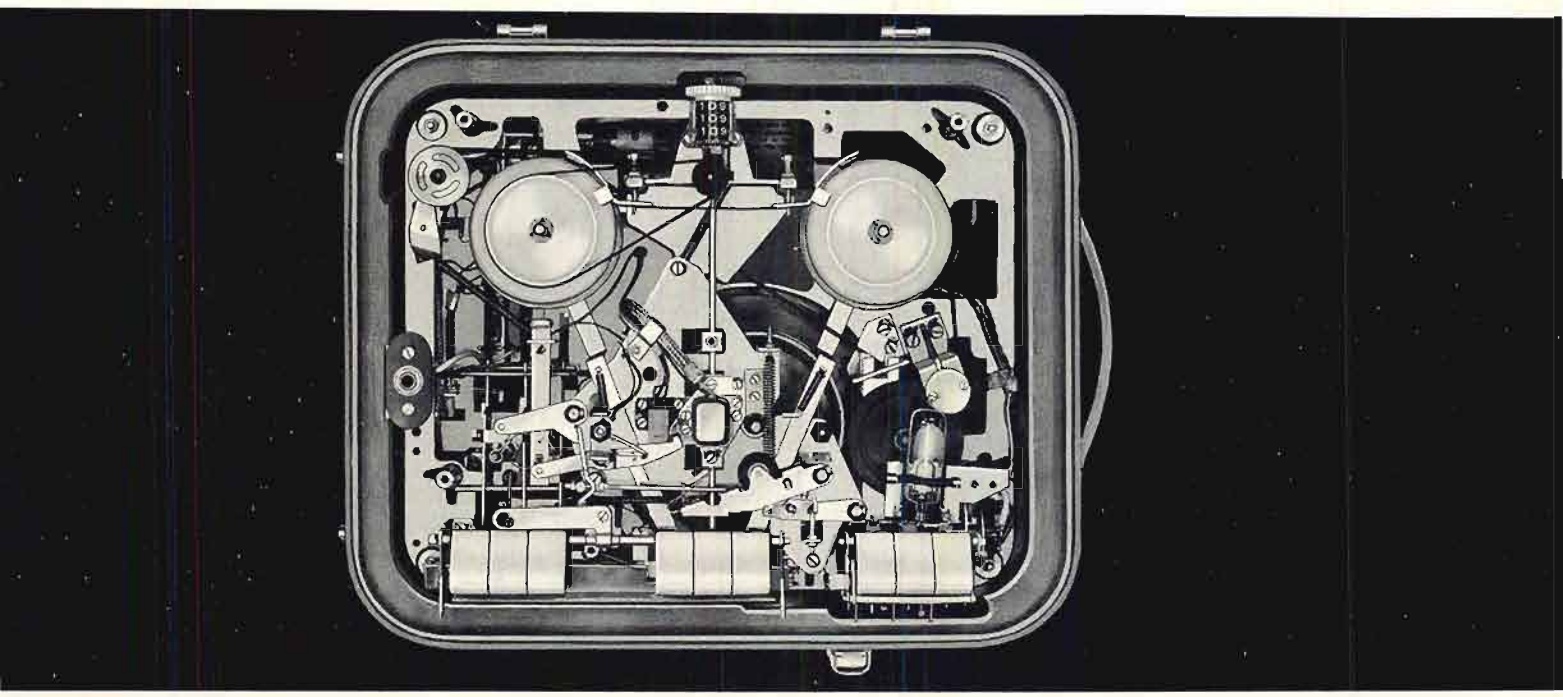

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The three-speed dual-track Norelco 'Continental' was specifically designed by Philips of the Netherlands, world's largest electronics concern outside of the United States, to be the finest self-contained, single-case, portable tape recording and playback system ever offered to recordists, high-fidelity enthusiasts and music lovers.

Nothing has been spared by the world-renowned Philips engineering teams to make the 'Continental' the most advanced and versatile instrument of its kind in mechanical design, electronic circuitry and construction. Three speeds, rather than just the conventional two, have been incorporated to insure maximum versatility and economy in both speech and hi-fi music recording. At each speed – 1⅞, 3¾ and 7½ inches per second – the Norelco 'Continental' compares favorably in performance with other machines operating *at the next higher speed.* This is due primarily to the special Philips magnetic head with an air gap of only 0.0002 inches, which makes possible extended high-frequency response even at the slower speeds. The built-in loudspeaker is of the world-famous Norelco twin-cone, wide-range design, with extra-powerful magnet.

Impressive as its specifications may be, the Norelco 'Continental' was designed, however, to be used and to be listened to – not to be read about. Its actual numerical specifications were determined by measuring it *after* it sounded good enough, handled tape gently enough, and ran smoothly and reliably enough to satisfy the uncompromising Philips engineers.

The data below are therefore offered as examples of factual description and painstaking, conservative laboratory measurement, rather than advertising claims. Read them, if you are interested –but better yet, operate and listen to the Norelco 'Continental' for a while, and forget about specifications. Five minutes of actual use will demonstrate to you more forcibly than five pages of decibel figures and intermodulation percentages *how a Norelco tape recorder is built!*

Norelco® 'CONTINENTAL'

(Model EL3516)

Tape Speeds:	7½, 3¾ and 1⅞ inches per second
Tracks:	Dual
Frequency Response:	40 to 16,000 cps at 7½ ips; 50 to 8,000 cps at 3¾ ips; 60 to 4,500 cps at 1⅞ ips
Signal-to-Noise Ratio:	54 db
Wow and Flutter:	0.2% at 7½ ips; 0.3% at 3¾ ips; 0.35% at 1⅞ ips
Volume Indicator:	Magic eye (Type EM-81)
Loudspeaker:	5-inch twin-cone
Controls:	Piano-key pushbuttons
Fast Forward and Reverse:	Less than 2 minutes for 1200' of tape
Automatic Stop:	At end of reel with metalized tape
Program Indicator:	Built-in
Inputs:	1 radio/phono; 1 microphone
Outputs:	1 for external speaker; 1 for external amplifier
Microphone:	High-impedance dynamic
Tubes:	EF-86, ECC-83, EL-90, EZ-90, EM-81, (one of each)
Line Voltage:	117 volts AC @ 60 cycles
Power Consumption:	55 watts
Dimensions:	15¾" x 13" x 8"
Weight:	Approx. 30 lbs.

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LA-41 **43.50** LESS CAGE

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The Lafayette Music-Mates have all of the features required of a fine high-fidelity system. Brilliantly engineered, beautifully styled and moderately priced, the Music-Mates are matched in performance, decor and size. Units are finished in attractive dark maroon and gold. Size 13½" W x 5⅞" D x 4-3/16" H.

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This deluxe amplifier utilizes new premium quality EL84 tubes in push-pull. Distortion less than 1%. Frequency reponse 20-20,000 CPS ± .5db. Has separate bass, treble and volume controls, plus loudness control. 5 input channels with tape and record equalization. Noise minimized by hum adjustment control and rumble filter switch. For use on shelf or custom mounting.

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A sensitive, selective, stable FM-AM tuner. Temperature compensated oscillator and AFC action assure freedom from drift and "locking-in" of a program. Armstrong circuit with Foster-Seeley discriminator employs 6 tubes plus matched pair crystal diodes plus rectifier. Superior hum and distortion specifications assure excellent reception. AFC defeat for tuning in weak stations. Built-in FM and AM antennas. For use on shelf or custom mounting.

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HF-179—Complete Phono System.....Net **119.50**

PK-300 TURNTABLE, PK-90 TONE ARM AND G.E. CARTRIDGE WITH GENUINE DIAMOND AND SAPPHIRE STYLI. **72.50**

PK-300

ILLUMINATED BUILT-IN STROBOSCOPE & VIEWER — **COMBINATION DEAL**

PK-90

LICENSED UNDER CBS U. S. PATENT NO. 2676806

LATEST IMPROVED MODEL PK-300 TRANSCRIPTION TURNTABLE

New 3-speed instrument with built-in stroboscope and viewer for exact speed determination, and magnetic brake for instantaneous speed variation. Precision engineered to meet professional standards for wow, rumble and flutter content. Heavy 12" cast aluminum rim-driven turntable. Variable speed control permits adjustment of each speed within ± 7% using efficient frictionless magnetic brake. Heavy-duty constant speed 4-pole induction motor freely suspended and isolated by shock-mountings to eliminate vibration transferral. R-C filter network suppresses "pop" in speaker. Truly a delight for the connoisseur. Size: 13½" x 14" and requires 2¾" clearance above and 3¾" below motorboard. For 110-130V and 60/50 cycle AC. Power consumption 12 watts. Handsome hammertone gray finish. Shpg. wt., 20 lbs.

PK- 300 .....Net **49.50**

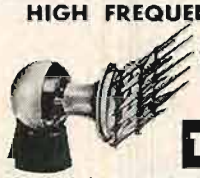
PK-90 VISCOUS-DAMPED TONE ARM

This transcription arm assures dependable and stable operation, utilizing the "floating action" principle of "viscous-damping." The arm is supported at a single point by a pivot and jewel bearing having negligible friction. Damping is accomplished by a silicone fluid occupying the gap between a ball and socket. This damping control permits high compliance and negligible tracking error, and prevents damage to either record or stylus should the tone arm be accidently dropped. Low frequency resonance, skidding and groove-jumping are likewise minimized. The tone arm accepts all records up to 16" and accommodates virtually all hi-fi cartridges by means of precisely engineered adapters which simplify installation and provide proper stylus pressure.

This tone arm is a quality companion to the PK-300 with matching finish. Shpg. wt., 2½ lbs.

PK-90 .....Net **11.95**

HIGH FREQUENCY TWEETER WITH ACOUSTIC LENS



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DIRECT IMPORTATION MAKES THIS PRICE POSSIBLE!

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- FREQUENCY RESPONSE FROM 2000 CPS TO BEYOND AUDIBILITY
- LOUVERED ACOUSTIC LENS FOR UNIFORM SOUND DISPERSION
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- PRICED EXCEPTIONALLY LOW

New high frequency tweeter featuring a louvered acoustic lens for uniform sound dispersion and capable of handling up to 25 watts of distortion-free power. The directional tendency of high frequency notes is overcome by the natural wide dispersion angle of the short horn and the acoustic lens which disperses and radiates the high notes smoothly throughout the entire listening area. The lens is detachable for panel mounting, with a separate base for the tweeter furnished for external mounting where desired. Aluminum voice coil has 16 ohms impedance. Size: 4¼" long x 3" diameter, lens extends 2½". Requires a crossover network, preferably one with a level control, such as the LN-2. With full instructions. Shpg. wt., 5 lbs.

HW-7 .....Net **14.95**

3 WAY CROSSOVER NETWORK

Carefully designed and engineered to Lafayettes own specifications. Insertion loss is well below the acceptable minimum. Crossover is at 350 and 5000 cycles. Permits full enjoyment of any 3 way system. Properly balances woofer-mid range speaker and tweeter inputs. Complete with 2 continuously valuable "presence" and "brilliance" controls for tonal adjustment and full instructions. 8"L x 3¼"H x 2¾"W. Shpg. wt., 7 lbs.

LN-3 .....Net **14.95**

LAFAYETTE HI-FI LP TEST RECORD

Ideal for audiophile who is building a bass reflex speaker enclosure, or wants to check the components already in use. Two-side, 12" LP record covers cartridge and stylus test, turntable rumble test, average and minimum recording levels, stylus and tone arm resonance check, equalization checks, sound effects, tuning bass reflex enclosures, and a group of delightful music box selections. Specially recorded with painstaking care at 33⅓ RPM, and master cut on a mechanism that produces the quietest grooves in the industry. Complete with instructions for use and colorful protective envelope. Shpg. wt., 1 lb.

PR-10. Hi-Fi Test Record .....Net **2.25**

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HI-FI PRIMER

Continued from page 172

full power output rating, but it must be remembered that when one operates an amplifier very near to its maximum capability one is in or very near a moderate distortion region and is skirting the edge of high distortion. A slight increase in volume or input signal will get one right into the heavy distortion range. For this reason it is most advisable to plan to operate an amplifier well below its maximum output level. Thus sudden increases in level can be handled without appreciable distortion and there will be no chance of program volume increases inadvertently running into the moderate or high-distortion region of the amplifier. In essence this amounts to a recommendation for purchasing an amplifier somewhat more powerful than one's normal needs may require.

The ear itself must be considered in this question of sound reproduction, too, since it is the receiver of the generated sound. Not only do our collective ears hear differently, but an individual's hearing characteristics may vary from day to day and will vary considerably with sickness, injury, and age. The general effect of aging is to cause a loss of sensitivity to the upper frequencies.

The ear is reasonably sensitive to loudness and extremely sensitive to pitch. It should be noted at this point that loudness and pitch are the *subjective* effects, respectively, of intensity (amplitude) and frequency of the sound wave. The terms are not synonymous since pitch will vary with loudness in the low-frequency range (below 1000 cycles), and very appreciably so below 200 cycles with high-volume operation. The ear is most sensitive in the middle-frequency range and tends to be less sensitive in the upper and lower ranges. This effect, in turn, varies with loudness; the loss at the extremes of the range is greater at low volume than at high volume. To compensate for this factor one would add treble and bass boost to his system at low volume. Volume controls are available which automatically boost the bass and treble response at low volume settings.

The ear is subject to harmonic generation when the ear drum is driven too hard. The ear itself is comprised of three major parts: the outer ear which collects the sound, the middle ear which has a mechanical diaphragm that will move under the influence of sound waves, and the inner ear which acts as a transducer for the brain. By overdriving the diaphragm of the middle ear, we can generate distortion just as would be the case with any transducer device. A diaphragm obviously has certain limits of excursion; when driven too hard, it will not make the excursion demanded by the exciting waveform and distortion will inevitably result. Nonlinear response (distortion) is inherent in many devices which are operated beyond their designed limits. Nonlinearity occurs when one tries to drive an amplifier too hard, with a resultant depression of the peaks of the output waveform (see Fig. 2-4).

Flattening of the peaks of a waveform amounts to the generation of much unwanted harmonic energy. Harmonic and intermodulation distortion are brought about by nonlinearity and can thus occur within the ear no matter how good or perfect the system is up to such a point. If we remember that a fairly wide dynamic range is involved in musical reproduction, we normally will not want to operate our volume at too low a level since we can then easily lose the very soft passages below the noise level of the system. We also do not want to operate the system at too high a level, risking the possibility of distortion in both the system and in the ear. The best volume setting would seem to be one that brings in the soft passages at a level audible above the noise level. Under such conditions, the very loud passages will cause minimum distortion within the ear itself.

Another interesting aural effect is masking. The presence of a high-intensity tone tends to mask one of lower intensity. If one plays a phonograph record, one will notice that on heavily instrumented passages or those with high-frequency sounds, the noise level will not be discernible since it will be masked by the high-intensity music.

The better high-fidelity systems are so designed that between musical passages hum and noise are inaudible. This condition is, however, difficult to achieve when the phonograph is in operation and is certainly not possible with older records or with many low cost modern records, though scratch filters help greatly. A reasonably good hi-fi system will, however, permit an absolutely "dead" background between musical passages of live material. The masking effect applies to ambient noise (such as street sounds) as well as noise within the system; in these cases one may need to raise the volume level of his system to mask the interference. Though amplifiers, transducers, and other system elements produce greater distortion at higher levels, the ear itself tolerates more distortion at high levels than low levels. Still, it always is better to try to reduce the ambient noises and to listen at a relatively low-volume level in the interests of minimizing over-all distortion.

Future articles in this series will discuss some of these factors in greater detail, will attempt to define what "high fidelity" is, and will consider the particular requirements of various kinds of listeners.

THE FISHER
FM-AM Tuner • Model 80-R

■ Renowned as the finest and most advanced FM-AM Tuner available, the 80-R justifies its reputation by performing where others fail. ■ Two meters, for micro-accurate tuning. ■ FM sensitivity of 1½ microvolts for 20 db of quieting ■ Less than 1 microvolt sensitivity for AM. ■ Separate front ends for FM and AM. ■ Adjustable selectivity for AM and variable AFC for FM. ■ Inputs for 72 ohm and 300 ohm balanced antenna. ■ Super-smooth flywheel tuning. ■ Shielded and shockmounted. ■ Multiplex and cathode follower outputs.

THE FISHER
FM-AM Tuner • Model 80-T

■ Unequaled, the 80-T is the most advanced FM-AM Tuner with complete professional audio control facilities. ■ Employs identical FM-AM circuits as the 80-R. ■ The first tuner-control chassis with a separate tape head playback preamplifier (with NARTB equalization.) ■ Preamplifier-equalizer can be used with lowest level magnetic cartridges. ■ Six record equalization settings. ■ Separate Bass and Treble Controls. ■ Four inputs. ■ Cathode follower outputs to recorder and amplifier.

THE FISHER
Master Audio Control • Model 80-C

■ Containing features found only in professional studio consoles — the Master Audio Control matches any power amplifier. ■ Provides professional phono and tapehead equalization. ■ Full mixing and fading facilities for from two to five channels. ■ Seven Inputs. ■ Two cathode follower outputs. ■ Preamplification and equalization directly from tape playback head. ■ DC filaments for non-measurable hum level. ■ Self-powered.

THE FISHER
30-Watt Audio Amplifier • Model 80-AZ

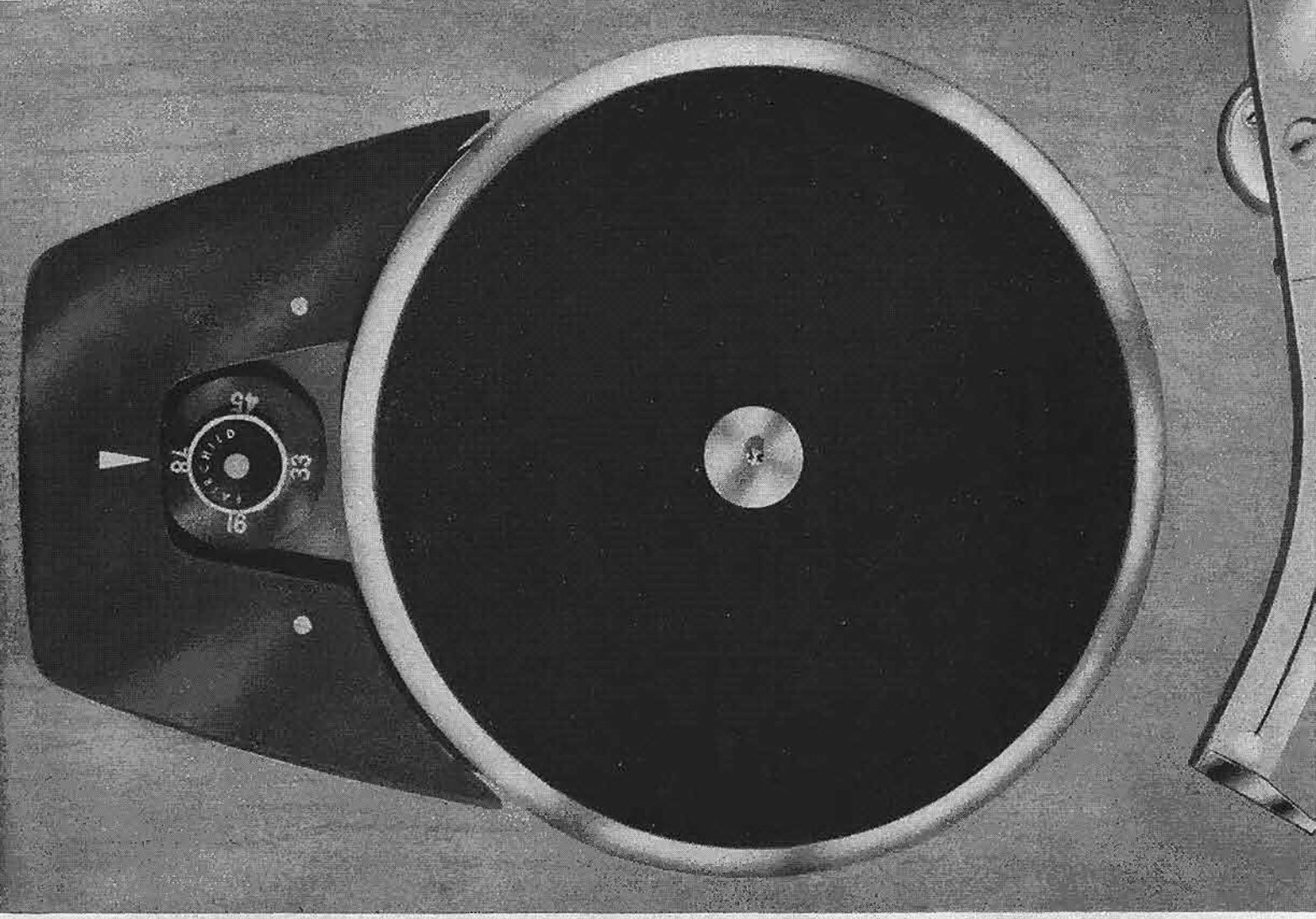
■ Incomparable FISHER amplifier with more clean watts per dollar than any amplifier in its class. ■ Less than ½% distortion at 30 watts. ■ Uniform response within 1 db from 10 to 50,000 cycles. Exclusive Z-Matic indicator conveniently mounted on panel. ■ Hum level better than 95 db below full output. ■ Damping factor of 26. ■ Outputs for 4, 8 and 16 ohms.

Let your ear be the judge!

THE DOMINANT FACTOR affecting the choice of high fidelity equipment is the sensitivity of your ear to the nuances of sound reproduction. Does the performance of a particular unit seem pleasing to your ear? Does its output faithfully simulate the musical sounds you would hear in the concert hall? The truest index to the success of FISHER units in meeting these personal criteria is found in one simple truth—they are by far the best-selling high fidelity equipment in the quality field the world over—from the royal palaces of Siam and Iran to music-loving American homes. Broadcast stations, too, have turned to FISHER equipment for their obviously critical requirements, both on the score of quality and reliability.

THE FISHER Master Audio Control is the most flexible equipment of its kind, with features ordinarily found only in broadcast and recording studio consoles. The high reserve power handling capacity of THE FISHER 30-watt amplifier will meet your every need. THE FISHER 80-T and 80-R are the only FM-AM tuners with 2 meters for micro-accurate tuning. FISHER high fidelity components such as these are created with an uncompromising adherence to the highest standards of quality. Combined with FISHER's twenty years of world leadership in high fidelity, they are your assurance that when you acquire FISHER equipment you will experience the dual pleasure of sterling performance and trouble-free ownership.

Write for specifications. **FISHER RADIO** Corporation • 21-25 44th Drive • Long Island City 1, New York



SHOWN WITH FAIRCHILD ARM AND CARTRIDGE

ELECTRONICS TAKES OVER ACHIEVES UNPRECEDENTED TURNTABLE PERFORMANCE

NEW FAIRCHILD E/D

The only high fidelity turntable system
using an Electronic Drive to select and control speed

Exciting, brilliantly engineered, the new Fairchild E/D brings the precision and accuracy of electronics to a component that has always been regarded as a strictly mechanical device.

Gone are the intricate mechanical linkages of the conventional turntable — the step-pulleys, cams, rubber wheels, etc. And gone with them are the principle causes of turntable distortion.

The new Fairchild E/D achieves an almost incredible quality of performance. Completely independent of power line variations. its speed is precisely regulated and controlled by means of an electronic power source. Rumble, wow and flutter are virtually non-existent. There isn't a trace of distortion or noise to mar the flawless reproduction of the finest modern recordings.

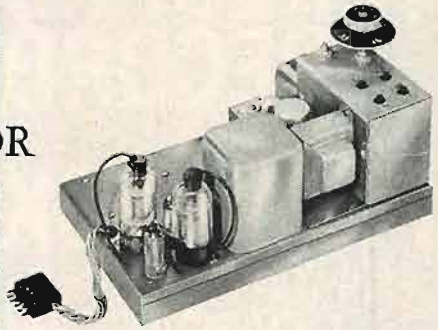
THE MOST IMPORTANT SINGLE ADVANCE EVER MADE IN TURNTABLE DESIGN

Never before has there been a turntable of such precision and quality of performance. Through the combined, effective use of modern electronics and acoustical filtering techniques, Fairchild engineers have succeeded in isolating, and virtually eliminating all of the principle causes of turntable distortion. Here are some of the quality-contributing factors:

— precision machined, Densite-damped cast aluminum turntable coupled to a
— hysteresis-synchronous motor by means of a
— specially designed, 2-stage belt drive which
— reduces motor-to-table transmission of noise and vibration by more than 40db.
— speed is selected, controlled and regulated electronically to an
— accuracy and constancy of ±0.15%
— regardless of variations in power line voltage and frequency.

HOW IT WORKS...

In conventional turntables and in record changers the motor operates at one speed. Changes in turntable rpm are effected mechanically — by step-pulleys, gears, cams, rubber wheels, and other moving parts. **In the new Fairchild E/D turntable speed is changed by changing the speed of the motor.** And the speed of the motor is changed by altering the frequency of the operating current.



THE ELECTRONIC CONTROL-REGULATOR

is a variable frequency, voltage-regulated oscillator-amplifier with an unusually high order of stability. It can be operated from any AC power line from 85 to 135 volts without regard to frequency. It can be operated with DC, using a simple AC converter, and from storage batteries with an ordinary vibrator-type inverter. The quality and stability of the output are the same in all instances.

The ECR is connected directly to, and operates the turntable motor. It delivers current at any one of four frequencies: 30, 60, 81 and 141 cycles. With the turntable speed selector set for 16⅔ rpm, the ECR output frequency is 30 cycles. At 33⅓ rpm, the frequency is 60 cycles — and so on through 45 and 78 rpm. Each speed also has its own electronic vernier control of ±5%.

THE TURNTABLE UNIT

consists of the hysteresis motor, the belt transmission, the turntable, and the enclosure for the Electronic Control-Regulator, all mounted on a unitized chassis. Without the ECR, the Turntable Unit is a complete, high quality, single speed 33⅓ turntable, and can be operated directly from a 60-cycle power line. The Turntable Unit can, in fact, be purchased separately, and the ECR obtained at a later date. It is easily mounted in the enclosure with an ordinary screwdriver.

FAIRCHILD E/D *performance ratings surpass all industry standards*

RUMBLE CONTENT	100% better than NARTB standards
FLUTTER CONTENT	100% better than NARTB standards
SPEED REGULATION	100% better than NARTB standards

(These ratings surpass specified standards for primary professional recording equipment.)

FAIRCHILD E/D Complete 4-speed system	$186.50
TURNTABLE UNIT Single speed 33⅓ rpm turntable less ECR	99.50
ELECTRONIC CONTROL-REGULATOR (ECR)	94.00
HARDWOOD BASE (shock-mounted) walnut, mahogany or korina	31.50

Visit your Fairchild dealer for an exciting preview of the new 'E/D'. Descriptive literature now available.

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Discover this new world of "living sound" that goes beyond high fidelity...

Sterecorder

THE FIRST COMPLETE STEREOPHONIC RECORDER AND PLAYBACK IN ONE COMPACT UNIT

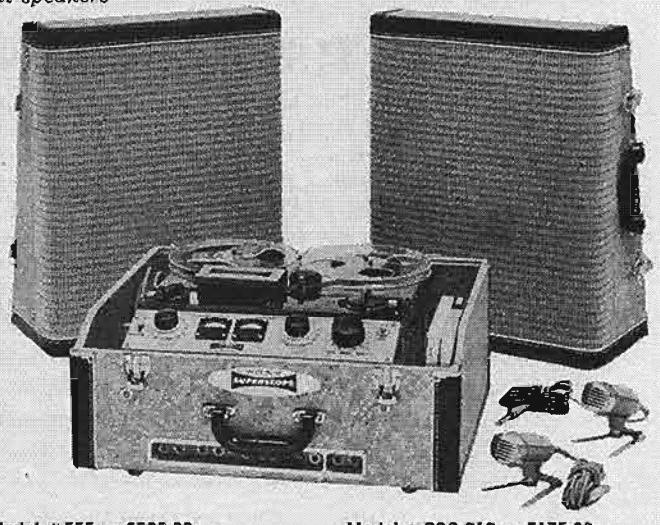
$525.00

nothing else required but speakers

For the first time, you can actually *record,* as well as hear, the breath-taking realism of stereophonic sound... *with one, low-cost unit.* This new STERECORDER system creates "living sound" by exactly reproducing on tape the depth and direction of the original performance.

Designed for home, studio, or office use. Easily portable, mounted in distinctive leather and vinyl case.

See and hear the new STERECORDER. Write for free information and address of nearest dealer.



Model ±555...$525.00
The self-contained stereophonic recorder and playback unit mounted in portable case. Includes 2 completely matched pre-amplification channels / 2 completely matched power-output amplification channels / 2 matched F38 Sony high impedance, dynamic microphones / hysteresis synchronous drive motor / a 4" x 6" monitor speaker / and many professional features.

Model ±PSC 212...$175.00
Two acoustically matched **James B. Lansing Signature** 12" speakers (Model D123) in separate enclosures... or $60.00 for Model ±PSC 100, enclosures without speakers. Speaker enclosures combine to form matching carrying case.

SONY SUPERSCOPE Sterecorder

Some franchises still available, contact: Superscope, Inc. Audio Electronics Division 780 Gower St. Hollywood 38, Calif.

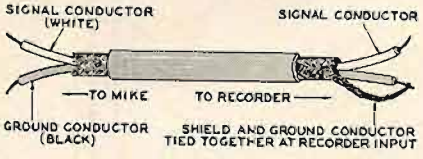
AUDIO FORUM

Microphone Cables

SIR:

Several times I have seen questions from your readers concerning the problem of hum when using long extension cables with high-impedance microphones.

A few years ago I had to use a mike extension cable 40 feet long, between my Pentron tape recorder and its crystal microphone. I used single-conductor shielded cable and, sure enough, when I connected it to my microphone and



tape recorder and made a recording, I had a full-fledged hum problem.

I took the extension back to the store where I had purchased it, and they exchanged it for a two-conductor shielded cable and told me how to wire it up. (See diagram). That ended my hum problem.

I would like to recommend this idea to any recordist who owns high-impedance microphones and does not wish to pay the high cost of mike transformers and low-impedance microphones.

It is true that the long cable will attenuate some highs when using a non-crystal microphone, but for voice recording this would not be too important. With crystal mikes, there would not even be any highs loss — just a slight loss of output.

All in all, this appears to me to be an excellent and inexpensive solution to the problem, especially for those applications where the utmost in high-frequency response is not necessary.

Lawrence A. Rose
Dorchester, Mass.

Compatibility

SIR:

I have heard a lot lately about so-called compatible hi-fi components, and would like to find out exactly what makes one component compatible with another.

Paul Bertrand
Cincinnati, Ohio

Nearly all high-fidelity components introduce some coloration into reproduced sound. A compatible or "balanced" set of components is one whose colorations are equal and opposite, so that they tend to cancel each other's sound.

For instance, of two pickup cartridges, one may be bright and spectacular-sounding while the other may be subdued and "sweet." If the brilliant cartridge is used with a brilliant-sounding loudspeaker system, their respective colorations will be additive, resulting in strident, piercing sound. This would be an incompatible combination.

If, however, the subdued-sounding pickup is used with a bright loudspeaker, their colorations will cancel one another, giving sound which is essentially neutral and which adds little to the original recorded sound. These components would, thus, be mutually compatible.

Since colorations are generally more pronounced in lower-priced components, compatibility is most important when assembling budget-priced high-fidelity systems. And since the tendency is for most moderate-priced components to sound bright, either the speaker or the pickup in such a system should be selected for its relative lack *of brilliance.*

What to Do about Mildew?

SIR:

Here in Florida during the summer months the air is very humid, and I notice that our records are mildewing badly. This is of some concern to us, as the collection is quite valuable.

Would you kindly let me know just how to remove this mildew? Our home is not air-conditioned, and I have no provision for removing humidity from the room in which the records are stored, although I could put them in a closet with a dehumidifier. But first, the mildew will have to be removed.

Mrs. H. R. Laws
Miami, Fla.

Mildew can be removed from records and jackets by wiping them with a soft cloth moistened with a mild soap solution.

As for its future prevention, we can't think of anything except storage in a dehumidified environment, as you suggested. Perhaps some of HIGH FIDELITY'S *readers have better ideas, and if so, we'd appreciate hearing from them.*

Impedance Matching

SIR:

I want to use two woofers and a tweeter in a system I plan on building, but all

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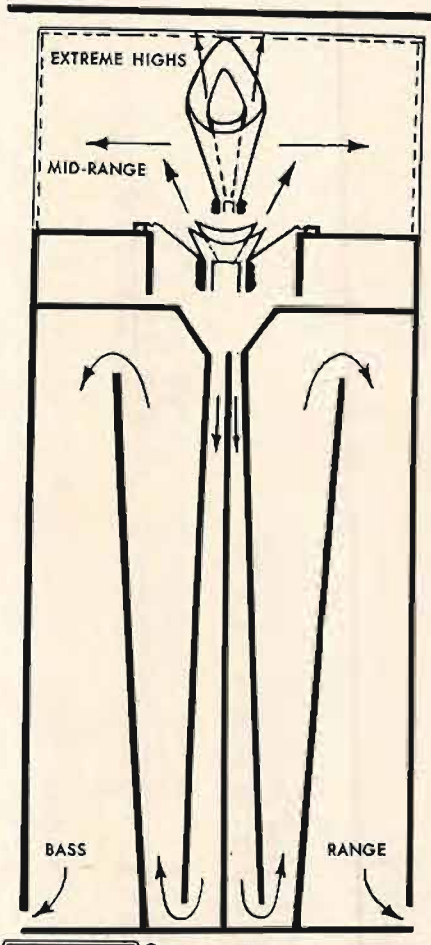

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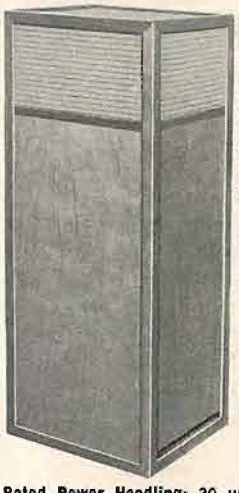

a new combined horn and direct-radiator system having uncolored transient response, superb damping, and non-directional sound distribution. Includes built-in LC dividing network and balance control.

Frequency Response: essentially flat 45-20,000 cps; useful response 30-40,000 cps.

Rated Impedance: 16 ohms.

Efficiency: can be driven satisfactorily from good amplifiers having a power output as low as 10 watts.

Rated Power Handling: 30 watts integrated program material.

Dimensions: 36" high, 15¼" wide, 11½" deep. Weight 45 lbs.

Finishes: hand-rubbed mahogany, walnut, or blonde.

Price: $129.95 net

If you appreciate the difference between artificial "hi-fi" and truly natural sound, listen to the EICO New Standard Speaker System at your local distributor. For complete data, write for free Bulletin HX-10.

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AUDIO FORUM

Continued from preceding page

three speakers are 8-ohm impedance. How would I hook the speakers up? If the speakers must be mismatched, I would like the matching error to give me more bass, rather than less.

If I used two 16-ohm woofers and hooked them in parallel, could I match them with an 8-ohm tweeter and use a conventional 8-ohm crossover?

Harry Boyer
Millington, Tenn.

If you were to connect your 8-ohm woofers in parallel with one another, and use them and your tweeter with an 8-ohm crossover network, your mismatch on the woofers would tend to give you slightly increased bass response, and some loss of bass definition.

Of course, if you were to use two 16-ohm woofers in parallel, you would obtain an impedance of 8 ohms in both your woofer and tweeter channels, so the matching would be correct all over the range, and the system could be used with an 8-ohm crossover network.

SIR:

I am confused about loudspeaker impedance matching, and since I do a lot of experimenting with multiple-speaker systems, I would appreciate it if you could give me some general rules pertaining to impedance matching.

John McLeod
San Mateo, Calif.

For practical purposes, loudspeakers which function over the same frequency range may be considered as pure resistance values, so the resistance formulas will apply when matching their impedances.

When two or more loudspeakers are connected in series, their combined impedance is the total of all their individual impedances.

$$Z_x = Z_1 + Z_2 + Z_3, \text{ etc.}$$

When two or more speakers of identical impedance are connected in parallel, their combined impedance is equal to their individual impedance, divided by the number of paralleled speakers.

$$Z_x = \frac{Z \text{ (impedance of each speaker)}}{N \text{ (number of speakers)}}$$

When two or more speakers of different impedance are connected in parallel, their combined impedance is equal to the reciprocal of the sum of the reciprocals of their individual impedances.

$$Z_x = \frac{1}{\frac{1}{Z_1} + \frac{1}{Z_2} + \frac{1}{Z_3}, \text{ etc.}}$$

When two or more speakers are operated through a crossover network, with the speakers carrying different ranges of the audio spectrum, the impedance presented to the amplifier in any frequency range is equal to the impedance of the speaker handling that range. Thus, a three-way speaker system using 8-ohm speakers for bass, middle, and upper ranges will present an 8-ohm load to the amplifier. If, however, the upper and middle range speakers are 8 ohms, and the woofer section is comprised of two series-connected 8-ohm speakers, the amplifier will "see" 16 ohms throughout the bass range, and 8 ohms above that. So perfect matching cannot be achieved with that speaker system, unless the woofer is connected through a separate 16-ohm low-pass filter and fed by the amplifier's 16-ohm tap.

If a compromise is necessary, it is usually best to match to the bass range and accept some mismatch in the middle and upper ranges.

Stereophonic FM

SIR:

With reference to your answer to the letter from Edgar E. Thompson of Hicksville, N.Y. ("Audio Forum," June 1957), it might be in order to point out that this station has been broadcasting stereophonic concerts on two independent FM channels since 1954. Stereophonic tapes — commercially recorded as well as station-produced — have been used, and several live studio concerts have been broadcast stereophonically.

Our channels are KPFA, at 94.1 MC, and KPFB, at 89.3 MC.

Erwin Goldsmith
Berkeley, Calif.

We stand corrected. Thanks for bringing your facilities to our attention. We are just sorry we can't receive transcontinental FM in the Berkshires.

Compliance and Mass

SIR:

What are the nature of, and the significance of, compliance and moving mass in a phono pickup?

William L. Gorham
Troy, N. Y.

The compliance of a pickup is the measure of the freedom with which its stylus moves from side to side (lateral compliance) or up and down (vertical compliance). It is expressed as the distance in centimeters that the stylus is deflected by a force of 1 dyne, so a compliance rating of 5×10^{-6} cm/dyne will represent a more free-moving stylus assembly than will a rating of, say 1×10^{-6} cm/dyne.

Continued on page 184

Tuners—first to achieve under one microvolt sensitivity for 20 db FM quieting; increases station range to over 100 miles. Other important features include the new "Feather-Ray" tuning eye, AFC switch, fly-wheel tuning, level control and cathode-follower output. Model S-2000 FM-AM Tuner $139.50 net . . . Model S-3000 FM only tuner $99.50 net.

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The "King of Instruments"—an Aeolian-Skinner organ installation.

The sound of the organ is one of the most difficult to reproduce, because of its wide tonal and dynamic range, and because of the large amount of fundamental energy that appears at extreme bass frequencies.

At a recent public demonstration, staged by the Audio League at St. Mark's Church, Mt. Kisco, N. Y., the recorded sound of an Aeolian-Skinner organ (from stereo tape) was instantaneously alternated with that of the "live" instrument. The reproducing equipment selected included four AR-1 speaker systems. Here is some of the press comment on the event:

The Saturday Review *(David Hebb)*

"Competent listeners, with trained professional ears, were fooled into thinking that the live portions were recorded, and vice versa.... The extreme low notes were felt, rather than heard, without any 'loudspeaker' sound..."

AUDIO *(Julian D. Hirsch)*

"Even where differences were detectable at changeover, it was usually not possible to determine which sound was live and which was recorded, without assistance from the signal lights.... facsimile recording and reproduction of the pipe organ in its original environment has been accomplished."

audiocraft

"It was such a negligible difference *(between live and recorded sound)* that, even when it was discerned, it was impossible to tell whether the organ or the sound system was playing!"

The price of an AR-1 two-way speaker system, including cabinet, is $185.00 in mahogany or birch. Descriptive literature is available on request.

ACOUSTIC RESEARCH, INC. 24 Thorndike St., Cambridge 41, Mass.

AR-1

AUDIO FORUM

Continued from page 182

The moving mass, or effective stylus mass, of a pickup is indicative of the "weight" imposed by the stylus on the groove walls when the groove is trying to vibrate the stylus rapidly back and forth. It is distinguished from tracking force in that moving mass is important only at high-recorded frequencies, whereas tracking force is constant regardless of the groove motion. The effect of increasing the mass of a moving body is to increase its inertia, so that more energy is required to start it moving, and more is required to stop it or to change its direction. The mass of a phono stylus determines how readily it is able to change direction, in response to rapidly undulating groove motion, so the higher the mass, the less easily will the stylus track high frequencies.

Lateral compliance determines how easily a pickup will track recorded bass tones, while lateral mass determines how easily it will track recorded high frequencies.

Vertical compliance and mass combine to determine how easily the pickup will handle high frequencies (particularly in inner record grooves), and they also affect the audibility of needle talk or "chatter" from loudly-recorded discs.

Baffling Questions

SIR:

I have noticed that some horn enclosure designs have the rear of the cone operating into a relatively small airtight space, and this somehow does not seem right. I know that an infinite baffle is supposed to have a certain minimum volume, and that smaller volumes will raise the resonant frequency of the speaker. But the enclosure behind the woofer in these horn systems seems much smaller than an infinite baffle should be.

Is there another principle involved here, or what?

Major Elmer C. Gall, Jr.
APO, New York, N. Y.

The relatively small airtight enclosure at the rear of the speaker in some horn enclosure designs is for the purpose of adding acoustical damping and stiffness to the cone.

The effective loading imposed by a horn on its driver speaker diminishes rapidly below the nominal design cut-off frequency of the horn, so there must be some means of preventing the undamped cone from "taking off" and going into free vibration when excited by extreme sub-bass tones. One way of doing this is to use a fairly stiff cone suspension, in a horn enclosure in which the rear of the speaker opens into the air. Another way is to use a small cavity

of confined air, in conjunction with a woofer having an extremely low free-air cone resonance.

The loss of deep bass that results from housing the average woofer in a small infinite baffle is not due to resonance of the enclosed air itself, but is a result of the enclosed air's stiffness acting on the cone and raising its natural resonant frequency. The size of the enclosure thus determines the percentage increase in the speaker's resonance, so if the speaker is designed initially with a very low free-air resonance, its resonance when installed in a small cabinet may not be any higher than the free-air resonance of a speaker designed for an initially higher cone resonance frequency.

A speaker for use in a horn enclosure such as you described should have a very low free-air resonance. Then when it is backed up by the sealed rear enclosure, its resonance will still be low enough to produce deep bass from the horn, and it will have sufficient acoustical loading to prevent severe overshoot when fed with signals pitched below the horn's cutoff.

SIR:

I have a Jensen Tri-Plex speaker system mounted in the wall between my living room and a coat closet, and despite the fact that it uses a 15-inch woofer, I just can't seem to get full bass reproduction.

I know it is not a matter of balance adjustment, because even with the mid-range and super-tweeter balance controls turned fully off, the sound from the woofer is thin and hollow. I have had my amplifier and preamplifier checked, and my pickup cartridge (a Pickering Fluxvalve) is new. The speaker opening is four feet from the corner of its wall, and if I made a mistake in locating it, I don't think I want to be told about it. My wife is a music-hater and spends half of her time telling me that high fidelity is a hobby reserved for half-wits and people who don't know the value of a dollar. She gave me a hard time when I cut a hole in the living room wall, and if she finds out I should have put the hole in a different place, my life won't be worth living.

So please break the news gently. Did I put the speaker in the wrong place, or could something else be the cause of its thin bass response?

Name witheld
New York 17, N. Y.

Your system and your wall baffle are probably both all right; they are simply incompatible. Jensen recommends the use of bass-reflex or horn enclosures with their loudspeakers, so you may either have to install your speaker system in an enclosure better suited for it, or replace the woofer with one designed specifically for use in infinite baffle installations. Otherwise, it may be possible to obtain sufficient bass compensation, from the bass tone control in your preamplifier, to fill out the low end of your present speaker system in its wall mounting.

SIR:

I would like some information about loudspeaker enclosures.

I just purchased a 15-inch coaxial speaker, and have been hunting around for a suitable enclosure. I see many attractive looking units advertised in catalogues, but they are all shapes, sizes, and types, and I don't see how *all* of them could suit my speaker.

Is there any way in which I can tell which enclosure would best complement my speaker, or doesn't it really matter that much?

John R. Dunn
Cambridge, Mass.

It certainly does matter! Your speaker enclosure will have a profound effect on the bass performance of your speaker, and should ideally be designed and built specifically for that particular speaker.

Your best (and safest) choice would be an enclosure that your speaker's manufacturer builds or recommends for your model of speaker.

As an alternative to this, determine the type *of enclosure that the speaker manufacturer recommends (infinite baffle, horn, or resonant enclosure), and then select one of these for its constructional ridigity and its size. If you use a reflex enclosure, you will require a cabinet of about 8 cubic feet capacity for your speaker, and should tune it by means of instruments, following the procedures described elsewhere in this month's "Audio Forum." Lacking instruments, set the cabinet's resonance to give bass that is full without being boomy.*

Failing Output Tubes

SIR:

I have a 50-watt Dynakit power amplifier equipped with EL-34 output tubes. On two occasions thus far, one of the output tubes has burned out, despite the fact that I was using matched pairs in the output stage. The pair I am presently using seems to be holding out all right, but I wonder how long it will be before one of *these* lets go.

Can you tell me what might cause such short tube life, and also suggest what might be done to remedy this trouble?

Torleif Meloe
Blauvelt, N. Y.

Most cases of short output tube life in Dynakit amplifiers have been traced to incorrect adjustment of the amplifier's

Continued on page 187

AR-1

WHEN the AR-1 speaker system first made its appearance on the hi fi market, our published specifications were sometimes greeted with skepticism; for a speaker to perform as claimed, particularly in such a small enclosure, was contrary to audio tradition.

Now, two years later, the AR-1 is widely accepted as a bass reference standard in both musical and scientific circles There is general understanding of the fact that, due to the patented **acoustic suspension** design, the small size of the AR-1 is accompanied by an advance in bass performance rather than by a compromise in quality.

AR-2

The AR-2 is the first application of the acoustic suspension principle to a low-cost speaker system. Prices are $89 in unfinished fir cabinet, $96 in mahogany or birch, and $102 in walnut.

We would like to suggest, as soberly as we invite comparison between the AR-1 and **any** existing bass reproducer, that you compare the AR-2 with conventional speaker systems which are several times higher in price. No allowances at all, of course, should be made for the AR-2's small size, which is here an advantage rather than a handicap from the point of view of reproducing quality.

Literature is available on request.

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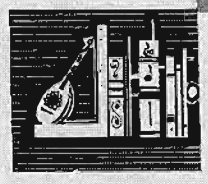

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AUDIO FORUM

Continued from page 185

bias potentiometer. This adjustment is rather critical, and the manufacturer has found that some inexpensive volt meters on the market are inadequate for this purpose.

There have also been frequent instances where one of a pair of initially matched output tubes has developed higher-than-normal current emission after a few hours of break-in, resulting in shortened life for that tube. Such a "runaway" tube can be detected by viewing the amplifier in a darkened room and noting the difference in reddish glow on the plates of the tubes. The one that glows most brightly is drawing the most current.

To help remedy this imbalance, and to allow more accurate bias adjustment, the Dyna Company is now making available at low cost a precision 12-ohm resistor and instructions for inserting it in series with the output tube cathodes.

Stereo Tape Tracks

SIR:

In a stereophonic tape playback system, which tape track carries the right-hand channel, and which carries the left-hand channel? I'm trying to set up a system using a separate stereo tape deck (Viking), but I can't decide which channel is which.

Donald M. Smith
Winnipeg, Manitoba
Canada

The industry standard for stereo track designations is as follows: With the tape traveling from left to right, its coated side facing away from you, the left-hand track is at the top of the tape, the right-hand track at the bottom.

For half-track monaural tapes, the program is recorded on the upper half of the tape.

Tape Head Maintenance

SIR:

How often should I clean the heads on my tape recorder, and how should I go about doing this when it is needed?

Also, how often is a recording head likely to need demagnetizing?

Richard Roland
Detroit, Mich.

The heads and guide surfaces of a tape recorder should be cleaned with a cotton swab dipped in isopropyl alcohol, after about every five hours of use unless experience indicates that a different cleaning schedule is called for.

For minimum residual hiss level, recording and playback heads should be demagnetized about every twelve hours. It is never necessary to demagnetize an erase head.

SIR:

I seem to be getting too much hiss from the magnetic tapes I listen to. Could this be caused by a defective playback head, or is something else wrong?

I would appreciate any suggestions.

Joel Feigenbaum
Astoria, L.I., N.Y.

Excessive hiss from a tape recorder can be caused by a magnetized recording head, DC leakage from the recording amplifier to the record head, distortion in the ultrasonic bias waveform, or noise in the early amplifier stages.

If the hiss is present when the recorder is running in the Play mode, without *any tape loaded onto it, the hiss is originating in an early amplifier stage. If it is present only when the tape is moving past the heads, it is being caused by one of the other possibilities mentioned. If tapping the record/playback head with the wooden part of a lead pencil, when the recorder's volume control is turned up high, produces a clicking sound, the head is magnetized. It should be treated with one of the special degaussers available for that purpose. A magnetized head my be caused by a previous tape overload, imbalance in the bias waveform, the presence of DC current through the head, or just normal usage.*

Other possibilities are that your recorder is boosting treble when playing back (the obvious cure . . . turn the treble control down slightly), or that you are playing commercially recorded tapes that were simply recorded with too high a hiss level.

Reflex Port Tuning

SIR:

Could you please advise me as to how I should go about tuning the port in a bass-reflex enclosure?

Jerry Berk
Dallas, Tex.

The most accurate method of tuning a bass-reflex enclosure involves using an audio oscillator and an AC voltmeter. Connect the oscillator to the amplifier, connect a 5- to 10-ohm resistor in series with the speaker system, connect the AC voltmeter across the speaker, and adjust the amplifier volume and meter voltage range selector to give about a half scale meter reading at comfortable listening level. Now sweep the oscillator through the range from 20 to about 200 cycles. Two sharp peaks will be observed on the meter, indicating impedance peaks from the speaker itself and from the enclosure resonance. Now adjust the reflex port until both peaks

Continued on next page

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AUDIO FORUM

Continued from preceding page

are of the same amplitude (i.e., until the meter rises to the same reading at both frequencies). This is the correct port adjustment. For improved smoothness in bass response, the port may be covered with varying thicknesses of burlap or similar material until the meter peaks have been reduced in sharpness and amplitude.

A less accurate method, but one which is fairly satisfactory, is to connect the speaker leads to a flashlight battery in series with a door-bell-type push button, and tune the reflex port until the system gives the same kind of click when the push button is pressed and released.

Finally, and least accurate, is to adjust the port purely by ear, until the bass reproduction from musical material is full without being boomy.

Long Speaker Cables

SIR:
Is the capacitance between the wires in a long cable from a power amplifier to a speaker system likely to be detrimental to quality?

W. A. Fairburn, Jr.
Ojai, Calif.

As long as you use a power amplifier having good high-frequency stability characteristics, you should not encounter any problems due to the capacitance of the speaker cable.

Some loss of effective amplifier damping may, however, be noticed unless you use low-resistance leads for your speaker cable. Standard house wiring cable would be best for this application.

Balanced Output Tubes

SIR:
I recently broke one of the EL-34 output tubes in my amplifier. Should I buy a matched pair of these tubes, or do you think that just replacing the broken tube will be enough? Is a factory matched pair of output tubes worth the price difference? Please advise.

Robert Downing
Fayetteville, N. C.

If your amplifier is new, it should not be necessary to replace both of its output tubes at once.

If, however, it has been in use for some time, you would do best to replace both tubes. It is not really necessary to purchase matched pairs, although it may slightly improve performance, so you may wish to do so despite the difference in cost.

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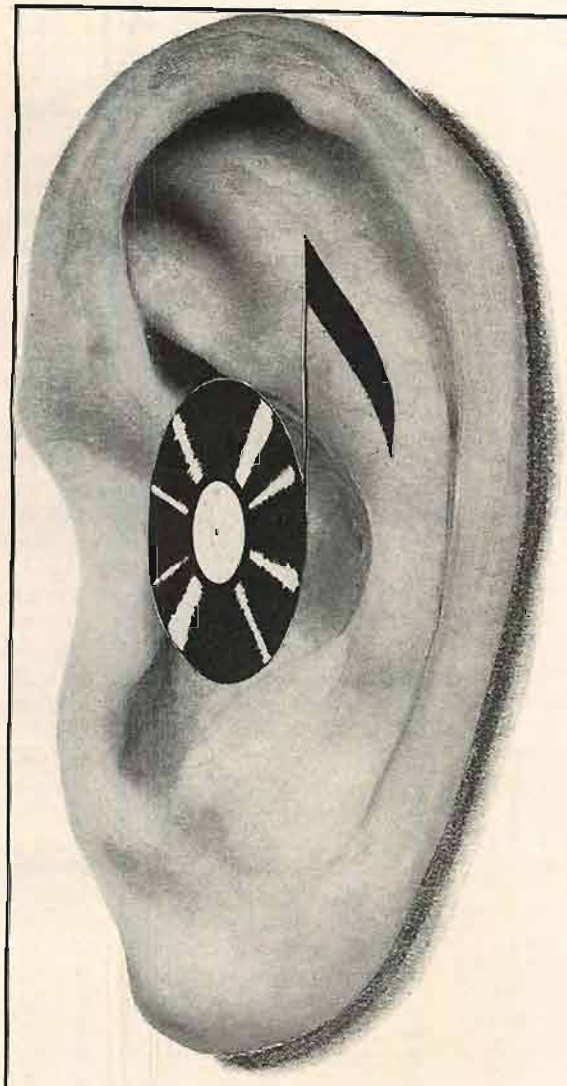

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$12.95 — The Duotone Sapphire "Safety 5" — packed 5 precision-matched sapphires to the box. This selection of matched sapphires will give you an average year of unmatched listening pleasure and complete safety, provided you check them as directed with the 75-power miscroscope included with the needles. Actual tests prove that on the more popular priced phonographs with average tone arm weight, Sapphire Needles will not break down record groove walls — or damage fidelity of records — as sapphires are less abrasive and tend to be self-polishing. The perfect answer to those who worry about record wear and *not* needle wear. Packed to give you a year's enjoyment. Comes complete with 75-power microscope and test chart that shows how to test needle in cartridge. Plus Reminder Guarantee Card. Full $17.50 value for only $12.95.

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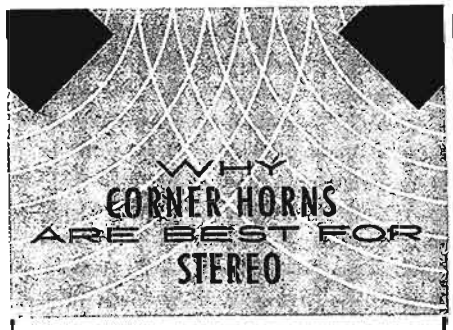

by JOHN EARGLE
Klipschtape Division

Stereophonic applications of corner horn speakers enjoy the same advantages found in monophonic installations. The extremely directional high frequencies are dispersed uniformly throughout the room without the dead spots which result from wall placement with its requirement of 180° radiation. And room resonances, accentuated by wall placement, are sharply reduced by corner placement.

At the bass end, mirror images and impedance characteristics of room corners greatly increase the radiation of low frequencies.

It is true that stereophonic sound, heard over a pair of restricted range wall-type speakers might be spectacular at first hearing. But, as you listen and develop considered opinions, you will realize that stereo makes just as stringent demands upon the accuracy of loudspeakers as does the most critical monophonic reproduction.

Corner placement increases effective room size and reverberation effect when a single corner horn is used, and the effect is doubled in stereophonic reproduction adding greatly to realism. In this way the usual defect of too close a placement of speakers is overcome.

When a curtain of sound is the object in stereo, the wide separation afforded by corner speaker placement makes possible the use of a center channel derived from the two sound tracks (a technique to be presented to the Audio Engineering Society in October.) This same technique renders the reproduction of a small ensemble with substantial accuracy and realism.

Corner speakers, when designed for smooth frequency response and uniform 90° horizontal polar radiation, with or without a center channel, produce perfect separation and provide maximum listening area where the stereophonic effect prevails.

The speaker systems produced by Klipsch and Associates have demonstrated their superiority in stereo reproduction in environments ranging from a small living room to a large auditorium. For further information on stereo installations of corner horns, Write:

KLIPSCH & ASSOCIATES
HOPE, ARKANSAS

Builders of the authentic KLIPSCHORN and SHORTHORN corner horn speaker systems.

THE OPERATOR

Continued from page 55

Nazi years; Westerman had also, Fischer said, protected Fischer's own partly Jewish wife. But no one had any comparable words for Karajan.

Upon landing in New York, Karajan went directly into a hospital for treatment of what his concert agency called a virus infection, and was not accessible to the press. The night of the first New York concert, two hundred pickets and forty policemen appeared outside Carnegie Hall. Inside, the capacity audience bent over backward to welcome the visitors, applauding the orchestra when it came onstage, applauding the concertmaster's entrance, and greeting Karajan with an ovation before he had yet lifted his baton in America. Even more ardent demonstrations followed the music, and the critics were agreed as to the orchestra's and its brilliant conductor's manifest excellences. The following day, at the insistent urging of André Mertens, who had booked the American tour, Karajan faced his first American press conference, characteristically attired in grey flannels, blue polka-dot foulard tie, and brown suede shoes.

To the first question, Karajan snapped, "I have nothing to say about politics. I came here as a musician." The reporters persisted. At length Karajan said that he had willy-nilly become a Party member — "automatically" — when he signed his Aachen contract in 1934, since that post was a municipal one. A little later, with the reporters increasingly determined to get *some* sort of political statement out of him, and with André Mertens displaying mounting agitation, butting in to help translate (oddly, in view of Karajan's command of English), and all but formulating the reply to one reporter's question, Karajan was prevailed upon to utter these words: "Of course I was not sympathetic to that {the Nazi} regime." This would seem a pretty feeble statement. Clearly Karajan was rattled, which may have some bearing on the question of whether he knew his Aachen story was untrue or if his memory played him false.

Once and for all, to set the record straight: Herbert von Karajan joined the Nazi Party not in Aachen but in Salzburg, and not in 1934 under pressure but on April 8, 1933, only two months and eight days after Hitler came to power. He was assigned membership card number 1,607,525. He paid his dues for that month but, before the end of April, he left to return to Germany, which caused a small administrative snarl, since he did not actually pick up his membership card. However, back in Ulm, he got this straightened out on May 1, 1933 and received another card, number 3,430,914. These facts are on record in the master file of the Nazi Party in the Document Center of the United States Mission in Berlin, and would seem rather more reliable than Herbert von Karajan's memory.

Apparently Karajan's Party membership did terminate in 1942, before the war's end. In that year Karajan married his second wife (his first had been an Aachen singer), Anita Gutermann, the beautiful daughter of a once wealthy thread-manufacturing family, who was one-fourth Jewish and therefore unacceptable to Karajan's Party comrades. This marriage was, for a Party man, both inconvenient and defiant, but Karajan stuck by his action with characteristic stubbornness and even arrogance. His career's martyrdom to the Nuremberg Racial Laws, however, did not tax him for long: records at the Berlin Documents Center show that the following summer — June 23, 1943, to be precise — none other than Propaganda Minister Joseph Goebbels himself sent out a personal order for Party zealots to lay off Frau von Karajan's family tree. From then on, Karajan had no more trouble — until, of course, the war ended and the Third Reich collapsed.

BACK IN BERLIN, after an American tour which was a major artistic victory for both Karajan and his orchestra, April 5, 1955 was a day of triple celebration. It marked Karajan's first concert back in Berlin with the orchestra, and they were welcomed home from America with thunderous applause. Then the city's Senator for Cultural Affairs, before reporters and news microphones, officially and ceremoniously asked Karajan whether he were prepared to accept the orchestra's conductorship "in the glorious tradition of Wilhelm Furtwängler," to which Karajan replied, "With a thousand joys!" It would have been understandable if, during such manifold rejoicing, Karajan had forgotten that it was also his forty-seventh birthday. Actually, he had been assured of his conductorship since March 3, when the orchestra (on tour, in Pittsburgh) had made up its collective mind and voted him its leadership while he lived.

But the Berlin job was for Karajan only a beginning, and Berliners reacted with shock and some resentment when on June 13, less than two months after the signing of the Berlin contract, it was announced that Karajan had agreed also to take on the musical leadership of the Vienna State Opera. Karajan assured everybody concerned — the Berliners, the Viennese (including the Friends of Music), La Scala, the Salzburg Festival, the Philharmonia Orchestra, and EMI, his sole recording outlet — that he was not spreading himself

Continued on page 192

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THE OPERATOR

Continued from page 190

too thin. In latter months, however, his quick cancellation of dispensable engagements has proven that he might, after all, have bitten off more than even he could chew.

Anyone who sees Karajan for the first time in rehearsal has difficulty recognizing the same man in performance. In rehearsal, he wears sports clothes, commonly topped by a turtle-neck cotton jersey with sleeves pulled up, revealing the satiny muscularity and definition of a natural athlete's physique. His left hand stays much of the time in his trousers pocket. He sits on the edge of the rehearsal chair, his lean, masculinely graceful body gently, naturally bending and swaying as he addresses himself to one section of the orchestra or another.

In concert, another Karajan is on the podium. In evening clothes subtly tailored to enhance an exceptionally trim figure, he acknowledges the applause and then stands, his dark, handsome face lowered, eyes closed, baton held in both hands, for long, long, long moments prior to beginning. At last, eyes still closed, he gives the downbeat. Gestures which in rehearsal showed an almost choreographic emotional abandon are now controlled to an absolute, nearly surgical minimum. Elbows are as if tied to his side. His attitude towards the men before him is seemingly as impersonal as if they were stops on an organ. The audience's reaction appears neither to touch nor interest him — in fact, in some of the less "important" cities on his American tours, his refusal to come out for more than a couple of bows after a riotously successful concert gave rise to considerable resentment not only among his listeners but among his musicians as well.

Musicians react in various ways to Karajan. In general he commands respect rather than warmth. He is never guilty of the sort of violent, roof-raising abuse that made Toscanini's rehearsals so vivacious, but neither is he the object of genuine personal love that Toscanini was to his long-suffering men. On the transatlantic stretch of his tours, he has at times traveled in chartered planes with his orchestra, and on such occasions he has made obviously conscious efforts to unbend, even to joke, but there is no real *Kontakt*, as the orchestra men put it. His habit of conducting them always with closed eyes sums up their relationship; the men are left with the discontented, vaguely rejected feeling that their personal identity is denied them, that all they mean to Karajan is this or that voice in the winds or strings or percussion. This closed-eyes habit also leaves them feeling a little handicapped musically for the communica-

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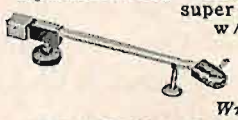

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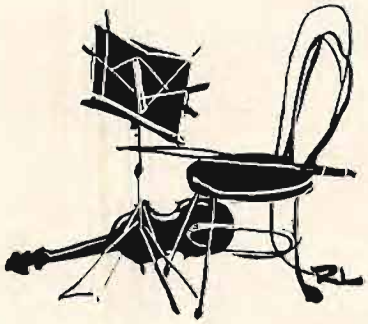
tive, lightninglike glances of most conductors exercise an enormous effect on orchestral players. At one time it was Karajan's habit to keep his eyes closed even when leaving the stage. This moved one old Viennese backstage attendant to remark dryly that *der Herr von Karajan* had better get himself a Seeing-Eye dog unless he was courting a nasty case of barked shins. His absorption in his art was not, however, so total that at one period in Berlin he did not remember to have an attendant meet him offstage between bows with a pair of hairbrushes, to repair labor's ravages upon his coiffure before he faced the audience again.

Karajan's rare times of relaxation also are characterized by the sort of glamour-boy aura more usually connected with movie stars than with conductors. Speed enthralls him. In 1952, when the Allies' ban on private flying hampered him in Germany, Karajan got a pilot's license in Switzerland. He now has little time for this activity, but he manages every year to fly enough to retain his license, and on long tours he sometimes flies himself in a rented plane. The high-powered, expensive Mercedes-Benz 300-SL sportscar hardly was announced before Karajan had his order in. The subject of spark plugs can send him into a passionate flight of rhetoric, and his living quarters, wherever he happens to be, always are piled high with racing-car magazines and manufacturers' brochures. In Tyrol, to which he repairs at least once each winter, he is widely known and respected as a daring alpinist and a skiier of near-championship caliber. In Japan, jujitsu fascinated him, but he was dissuaded from taking lessons by the story of a Hungarian violinist who had recently gone away from Japan with a broken wrist. Another pastime is sailing his fifty-ton yacht, which has a



crew of three. During his moments of diversion, he is usually to be found with his head inside an engine of some sort or other. In relaxation he usually reclines full-length on the floor. One friend said recently, "I've never yet known Herbert to sit on a chair except during meals."

Home is for Karajan largely an abstraction. He has a wide reputation for a sense of double-entry bookkeeping almost as formidable as his musical acuteness, and in June 1951 he calmly had himself made a citizen of little Liechtenstein (*not* Tangier), giving as his reason, when queried, the "unbearable" income taxes he had had to pay as a German. (European humorists say that the main qualification for citizenship in Liechtenstein is the ability to enable about $3,000 in hard currency to change hands.) His "dream villa" in Casablanca once got considerable play in Germany's Sunday supplements, but he has little time to enjoy it; the same is true of a house near Innsbruck, in the Austrian Alps. In Berlin he does not maintain even an apartment, and, in fact, eschews the fashionable Hotel Kempenski on the Kurfurstendamm for the Savoy, which, while less luxurious, is just around the corner from rehearsals and concerts. Karajan is customarily preceded along his grindingly demanding itineraries by a private secretary, André von Mattoni, a paragon of efficiency. When Karajan says simply, "I don't know how I would get along without him," his statement is quite literally true.

If Karajan's relationships with his fellow beings are not marked by warmth or affection, they have nevertheless earned him enormous respect and, as far as one can establish, remarkably few enemies, especially for a man of his position and power. Thirty-four-year-old Wolfgang Sawallisch, whose position in respect to Karajan is roughly equivalent to that once held by the latter in relation to Furtwängler, was invited to see Karajan shortly after the older conductor had signed his Vienna Opera contract. Far from hindering the career of his younger colleague (and, to be truthful, up-and-coming rival: Sawallisch already conducts and records with the Berlin Philharmonic and the Philharmonia), Karajan helpfully advised Sawallisch about his future career and urged him to agree to conduct forty operatic dates in Vienna. "I've invited such men as Dimitri Mitropoulos and George Szell to Vienna," Karajan told him. "With all of us there, keeping one another on his mettle, trying to outdo one another, just think what a standard of performance we can achieve!"

Karajan is known also for his loyalty, and for keeping his word. Much impressed by the abilities of the Aachen Opera's chorus master, Wilhelm Pitz, Karajan told him, "If the day comes when I'm engaged for the Bayreuth Festival, you will be engaged with me." Sixteen years later, when the Bayreuth invitation came, one of Karajan's conditions was that Pitz come, too. The

Continued on next page

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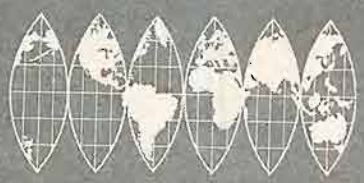

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THE OPERATOR

Continued from preceding page

solidity of Karajan's judgment is attested by the fact that Pitz, despite Karajan's own artistic differences with the Wagner brothers and his subsequent departure from Bayreuth, has trained the famous chorus there every summer since then.

When Karajan says, "One sin I have never been guilty of is that of jealousy," the record backs him up. For him, musical excellence, however achieved, is everything. At certain stages of his career Karajan has achieved it by devious and regrettable routes. For a public accustomed to turning its musical heroes into homely, lovable characters, he is a somewhat frustrating anomaly. Even stiff-necked old Furtwängler had pleasantly human frailties; all Europe used to chuckle about his notorious roving eye. And it is safe to say Clemens Krauss would have stood less high in Viennese affections but for the indestructible rumor that his true father had been an errant Habsburg. In Karajan's case, such humanizing anecdote simply does not exist. He remains aloof, a highly polished precision instrument, a true twentieth-century product. One can excusably wonder to what extent warmth and nobility of musical performance do, after all, reflect inner warmth and nobility of character.

MANHATTAN HOLIDAY

Continued from page 61

embedded in the opposite wall. But every inanimate object accepted the attack with composure. The animate audience in the control room was staggered.

The *pourparler* accompanying Horowitz's two pieces of toast after recording sessions turned to the future when every detail of the present action had been reviewed, questioned, restated, altered, reinstated, and generally inspected for any slight flaw in content or procedure. The future was filled with enthusiasms, foremost of which was the remake of Beethoven's *Moonlight* Sonata, which he first recorded in 1946. Then there were the Tchaikovsky operas *Eugen Onegin*, *Pique Dame*, and *Mazzepa* which were consuming his "between-time" studies, and the scores found stacked on the piano in his library pointed to numerous avenues of interest. But conversation often stuck to the art of Scriabin and the controversial position it holds. Seemingly endless discussion revolved around the similarity between early Scriabin and Chopin; and Horowitz, always eager to demonstrate, would transpose both composers' works to the same key and phrase them together,

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punctuating the illustration with a running comment, a look of surprise, a shrug or a nod of affirmation. It was as if he, too, were merely listening, only his hands performing the complex compositing of the two works. The only conclusion ever drawn was that the essence of Scriabin always shone through, even when the device smacked of Chopin.

Spending only four sessions to complete the recording of these difficult and unfamiliar works was better than par for the course. Horowitz always recorded quickly, however, spending at the most two hours at a solo session and rarely repeating a selection more than once. After the usual "rejection" period during which test pressings, cover, and annotations were repeatedly submitted on daily telephoned instructions, usually at nine sharp in the evening, the record went to press and Horowitz went to work on Beethoven. There were unknown difficulties ahead, but that bright, cool May day when he started gave no hint of them. They say each new album has its own personal set of problems, and this one began to prove the adage after the first playback that day. Horowitz's comment was: "The sound, it's a little bit lousy," and the rest of the day was consumed in revising the recording technique to eliminate the caustic sound of a new piano. When the middle of October arrived and the recording was just being completed, the album had about involved the whole range of problems. Horowitz brooded over the tempo of the first movement of the *Moonlight* all summer. He inspected other *adagio sostenuto* designations throughout Beethoven literature until he found a comparable mood. Finally, he announced one evening, at his summer house in Easthampton, that he would remake the movement, and play it "slowlier." (He had long since unconsciously introduced this word, and now the word "slower" seems a little ineffectual.)

The October recording produced the "slowlier" performance which he described as "so difficult" to play for recording. "In concert, it goes," he added, "but to sustain the tone, keep the accompanying figures even, and hold the thread of musical line — it's a big job."

Two other completely dissimilar areas of interest divided his energies during that summer of 1956: one was a group of Chopin selections to be prepared for the next recording, while the second was an activity with numerous implications — he was composing a concert fantasy on a theme from Bizet's *Carmen*. Among his other distinctions, he is famous for his pyrotechnical transcriptions of familiar works. They were worked out at the piano, usually not written down even after their comple-

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MANHATTAN HOLIDAY

Continued from preceding page

tion, and some, like the Saint-Saëns *Danse Macabre*, exist only as recordings, Horowitz having forgotten most of their intricacies. The original *Carmen* transcription had been one of the earliest of these showpieces, but now he was approaching this simple melody with a "concert composition" in sight. Organizing his thoughts and defining them systematically on paper was a new approach for him, and, among other revelations, he was amazed at the very number of notes he found himself writing down for just a few minutes of music. His efforts have been rewarded by a broad original perspective of this popular melody, rich in descriptive pianistic colorations, eminently suitable for the body of a recital rather than just a sensational encore. It is apparent that it is part of a program that will mark his concert reappearance. By this one gesture, he is indicating that devices which were once an end in themselves will now take their rightful place in the pattern of music. Virtuosity will be as prominent as ever, but it will serve a musical master.

In anticipation of resuming public appearances, he has spent long hours on the stages of Hunter College and Carnegie Hall recording the new Chopin album. Discussion about plans for a return to the stage, which were once dropped quickly, have been freely carried on for a year.. Dates have been spread before him with complete freedom of choice. But the same delicate balance that allows him to retain or alter a tempo according to his feeling of the moment also gives him an instinctive sense of timing. When the right moment comes, and it will be sometime this fall, he will be at the post familiar to millions, performing those works he feels and understands, characterizing each by his unique contribution. There will be differences borne of four years of time but also four years of study, evaluation, and experimentation that must broaden and mature an artist at any stage of his career. He is acutely aware of these four years he has taken away from his audiences, but he has tried to neutralize this loss to some extent by presenting recordings that otherwise would not have been made, by restoring his own strength, and by an honest, devoted effort to expand his musical experience for the future pleasure of his public.

BASSET HORN

Continued from page 63

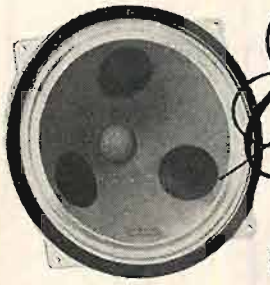
Beethoven; that will always be true." Quite independently of this, the review is also an example of poor reporting; for even if the sonata had made no effect after Mozart, it still was a new piece about which the public at large was entitled to learn a little. It is difficult to suppress the suspicion that Shaw's prejudice against French music, away from the opera, and his undisguised dislike of "Chapelles," their "Maîtres," or any edifice serving the function of the Madeleine, may have interfered with his desire to listen carefully and may have impaired his usual alertness. One would have much preferred an emerald-green howl of rage and some of his lusty rum-tums, titi-pahs, and taran-taras to the kind of genteel and guarded malevolence that lurks in his review and that is usually the appanage of men less exalted by far.

Shaw's suspicion that there was probably more to the artistic life of Paris than he had been able to detect when he had attended some official functions in that city would have been confirmed had he but ventured there more often. A meeting with Debussy or Ravel, or with one of the younger Russians, might have helped steer his imagination away from the belief that musical salvation could come only from Germany. But he did not care much for travel, which is a pity, because in his day not all the mountains came to Mohammed as they do now, when even the untutored can learn all about the earliest in plain chant or the latest in dodecaphony from the jacket of a record. It cannot be deplored enough that Bernard Shaw had given up his assignment a few months before the world première in Paris of Debussy's *Prélude à l'après-midi d'un faune*. Whatever his reactions would have been, they would have added to his music criticism an asset that is sorely missing: a first-hand report about an important new composer and a revolutionary new work.

Alas, the lure of Bayreuth had been too strong to allow for a diversion elsewhere. Curiously enough, his reports from that shrine are disappointing. By and large, one learns from them only that the Germans had rougher voices, cheaper instruments, but much better dragons than the English. It may seem churlish to bring out all this, and Bernard Shaw can surely not be blamed for having chosen to review music during those few years of the nineteenth century when musical creativity had gone underground and was preparing for a counterrevolution. But still, unfair as it may sound, a little luck is an indispensable part of all great achievement; and in order to be "probably the

Continued on next page

The Presence of a Queen



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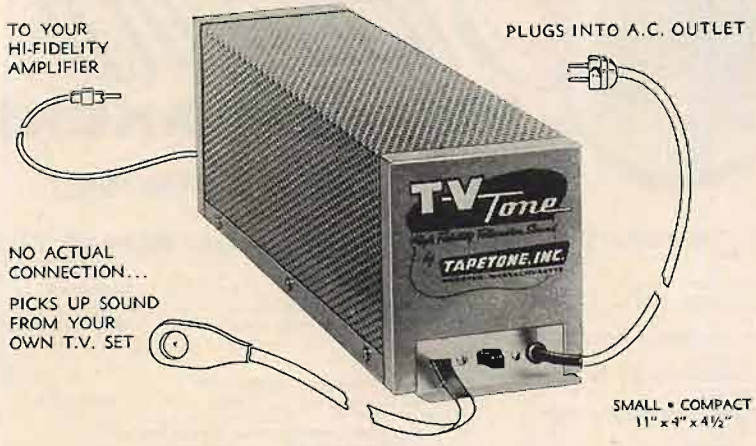

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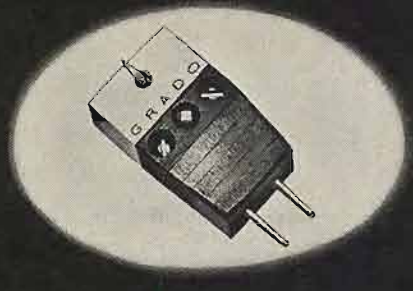

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BASSET HORN

Continued from preceding page

best music critic who ever lived," one has to function at the right time. As a drama critic, Shaw was more fortunate, and one knows how much was added to his prestige by his discovery for England of Ibsen and Strindberg.

It is regrettable that Bernard Shaw did not always keep his promise to the editor who had begged him to avoid all technical minutiae — "*Bach in B minor*," as he would have it. But Shaw was largely self-taught and, like many of his kind, he combined a grand disdain for erudition with the irrepressible desire to prove that he could be as erudite as "many another." His attempts in this respect were not always successful and were responsible for the amateurish overtones perceptible in most of the essays. There are subjects that refuse to be treated summarily and that cannot be dismissed with peremptory and superficial explanations. Discussions on the thematic potential of a leitmotiv, or the laws dividing absolute music and program music, or the merits of opera versus music drama, or then the advantages of one harmonic system over another, cannot take place successfully within the narrower framework of day-by-day reports. By ignoring the complexity of problems of that kind, and by hustling them around according to his needs, Shaw merely succeeded in obscuring his arguments by frequent confusion of aesthetics with technique. This — very clearly — happened when he judged the merits of modal harmony by the works of some academic English composers and concluded, from what he had heard, that only such "professors" would hold with "all this mixolydian stuff." He could not see that the merit of "mixolydian stuff," like any other "stuff," including chromaticism, depended on the men who used it. Mussorgsky and Debussy could have shown him, and so — for that matter — could "the giant of Bayreuth" himself, who had fused modal and chromatic elements in *Parsifal* with no uncertain success.

As a crusader for Wagner and a pious follower of the Liszt-Wagner line, Shaw often maneuvered himself into untenable positions, as is shown by the following: "Stavenhagen . . . played the C minor Concerto of Beethoven. The first movement, which made hardly any effect, is, when properly handled, grand in the old-fashioned way . . . He was more at home in the Liszt Concerto in A — its genuine organic homogeneity being particularly welcome after the formal incoherence of the earlier Work." This is a typical example of sectarian criticism, which in itself is not objectionable, if it can make its point. But in this particular instance it certainly failed to

do so, and we may rest assured that Liszt himself would have set the fiercest family dragons at anyone who suggested to him that he had improved on Beethoven. Of course, it was easier for Shaw to understand the homogeneity of Liszt's newer and well-advertised cyclic form than to see any organic coherence in Beethoven's more subtle constructions. Here was a case when intuition could not substitute for true knowledge and when the assimilation of fashionable lore could not take the place of personal experience.

Among the more extravagant reviews, the following report on an organ recital in a church is a grand evocation of the Victorian age and a fine piece of Wagnerian pamphleteering. As music criticism it is not altogether convincing. Let me quote: "Inside I found some sixty people listening to Mr. John Runciman, who was compelling a loud-mouthed intractable organ to discourse to the following effect: 1. Andante con moto from Beethoven's G minor Symphony, 2. The *Parsifal* Prelude, 3. Bach's Organ Fugue in A minor, 4. The Death March from the *Götterdämmerung*, 5. Mr. Marshall-Hall's Witenagemot Music, 6. Prelude to the third act of *Lohengrin*. This is exactly the right sort of program for an organ recital in a church." Shaw sums up a longish argument in favor of this peculiar list by saying: "he who sticks to Wagner and Bach will eventually get the choicest spirits in the parish into the way of coming to the church and learning something there." It is clear that in this case he was mainly interested in establishing Wagner's respectability in the eyes of churchgoers and at the same time in seizing an opportunity for one of his usual little flings at clerical institutions.

Beside the "mixolydian" and other related subjects, there is one in particular that Bernard Shaw was always a little pedantic about. In his youth he had lived for a while under the same roof with a singer who had taught according to what is known as a "method." Need one say more? This sad experience weighs heavily on some of his criticisms and spreads a good deal of tedium when he discusses the *coup de glotte* or deplores the shortcomings of a voice sadly misplaced "behind the upper teeth." Of course, he may have been doing his duty for a public perhaps thirsting for enlightenment on all such matters.

As a writer of genius and a man born to the theater, Shaw was at his best when his critical faculties were aroused by both looking and listening. His descriptions of operatic performances, or of artists like Emma Calvé and Yvette Guilbert, or his fantastic ramblings about Paderewski are among his most original efforts. He is at his best also as an observer of the human drama; his pathetic

Continued on page 201

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BASSET HORN

Continued from page 199

evocation of Siegfried Wagner, for example, belongs to literature altogether. He was admirable too in his untiring persistence in urging a then musically backward people to broaden its outlook and to establish a reasonable hierarchy of musical values within its consciousness. As a man of stature, he showed a remarkable absence of petty chauvinism. When Anton Rubinstein had written about the "children of Albion" that their ignorance of music was only exceeded by their lack of appreciation, Shaw had replied: "Do not dream to apologize, friend Rubinstein, your remarks may do the children of Albion some good."

As a pure music critic Shaw did suffer, however, from the malady that I once described as "knowing a little too much and much too little." There is, of course, no denying his gifts in the domain of musical journalism, and it is only regrettable that these gifts were not given more time to develop. One is in fact tempted to vary his own famous *mot* about the then fifty-year-old Adelina Patti and to say, applying it to him, that one firmly believes Bernard Shaw was capable of becoming a great music critic. Unfortunately, the indiscriminate adulation his writings on music have received, and of which Mr. Auden's statement is symptomatic, has had a deleterious effect on some of Shaw's self-appointed and less talented successors. Shaw's musical essays — good, bad, or indifferent — are still by Bernard Shaw. They are neither an anthology of derogatory epithets for the use of cranks nor are they a recommended kindergarten for hopefuls in search of overnight fame. By now the tricks are all well worn, the similes are all shopsoiled. And the art of being caustic without being vulgar is still confined to a chosen few.

DURABLE DISKERY

Continued from page 66

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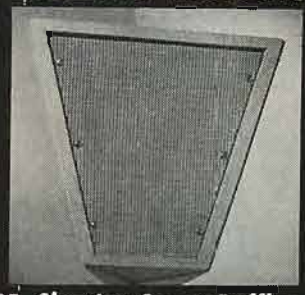

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(Signed) Charles Fowler

Sworn to and subscribed before me this Sixth day of September 1957.

(Seal) Lillian F. Bendross, Notary Public
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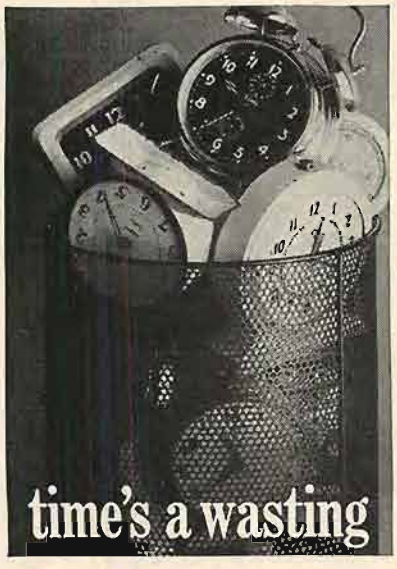

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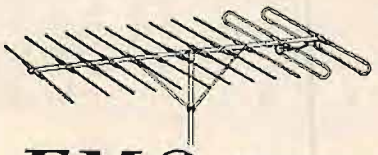
of practically all prewar concert halls, among them the old Philharmonie of Berlin, with its "ideal reverberation." He considers the acoustics of the recording room the decisive element in a record's sound perspective, balance, and presence. In Christ Church at Dahlem, a suburb of Berlin, he found a building which suited him. It is here DGG's Berlin Philharmonic records are made. Sometimes he also uses the Herkules-Saal in Munich and (for the Leningrad Philharmonic) the Vienna Musikverein hall, the acoustics of which he considers outstanding.

All told, in Hanover and the Hamburg offices DGG employs 1,600 people. It makes, now, slightly more than half of all records produced in West Germany. The factory has in operation 120 presses and 136 galvanic baths, including those for nickeling and coppering. The monthly production capacity is now up to three million discs. During 1955, some eighteen million were made, and in 1956 the total reached twenty-four million — a figure not far behind the 1956 Hayes production of a little under thirty million. At present, about 45 per cent of the total consists of 78 rpm, another 45 per cent of 45 rpm, and the remaining 10 per cent of 33s, figures which show the enormous popularity of the seven-inch disc, even for classical music. The proportion among the speeds is shifting rapidly, as everywhere, toward a decrease of the 78-rpm shellac record.

DGG distribution depends, for the most part, on the Siemens offices, which are located in practically every big city of the world. In some countries, special arrangements are made with other firms, as with Decca in the United States. Many of the DGG foreign branches, among them those in France, England, Sweden, Italy, Spain, and Brazil, make recordings of popular music by artists of those countries, for the Polydor label.

Statistics of production and distribution do not, however, suggest the distinguishing character of Deutsche Grammophon. The special DGG approach may be summed up in the word "quality." Nowhere in Europe did I hear this word repeated as much as in Germany. For the DGG people, "quality" is more than a philosophy; it is a real obsession. "We do not intend to sell mere records," was the somewhat paradoxical statement of Dr. Steinhausen. And then he added: "We want to sell music." Elaborating further, he explained: "Our goal is to forget, and to make the listener forget, that the record is a part of a technical process. We are trying to overcome as much as possible the physical materials in order to establish the musical art in its full spiritual integrity. A record cannot be made with technical means alone. It has to be produced, through all its technical processes, with artistic taste. . . ."



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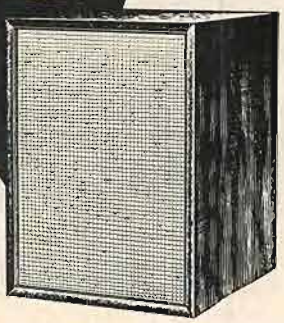

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TAPE OR DISC?

Continued from page 70

graph record manufacturers have always felt that 100% visual inspection and a test playing of every fiftieth pressing provided adequate control of disc quality. It usually does, though ticks and pops are sometimes more prevalent than they should be.

There is no way to inspect visually the quality of a recorded tape, but automatic inspection devices have been invented in abundance. So far as is known, these are not in general use. Since automatic inspection is inherently a rather crude arrangement that guarantees the presence of recording but not its quality, the lack is probably unimportant. We can see, however, that inspection will be a serious problem as recorded tape production expands. Fortunately, the blank tape is much more susceptible to rigorous quality control during manufacture than is the individual biscuit used in pressing discs, so that quality problems in tape duplicating will be minimized.

IT seems that we do not know enough about basic psychoacoustics to be able to evaluate some of the obscure effects enumerated. For those who are allergic to ticks and pops, tape provides an answer. For those who dislike threading tape, discs are ready and waiting. As for others like myself — we have both tape and disc. If anyone objects, editor John Conly and this author are somewhere between International Falls and Rainy Lake.

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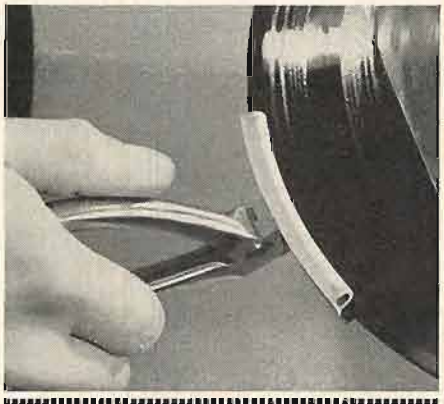

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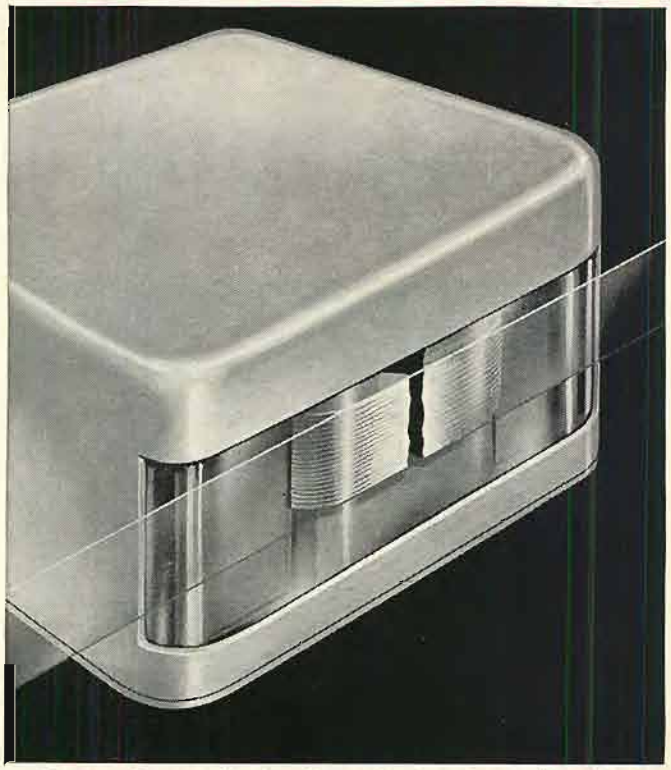
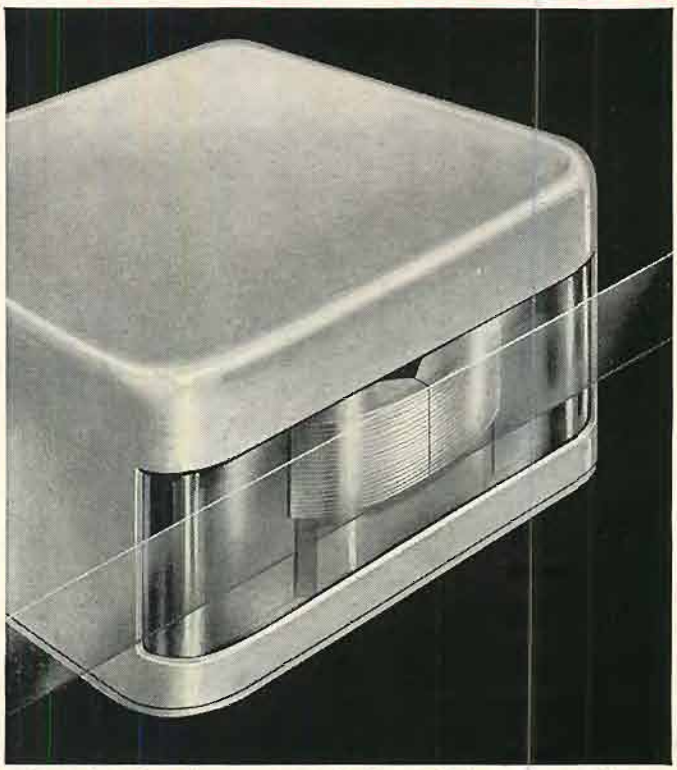


Picture of a recorder head's contact surface, with critical center gap eroded and enlarged by the wearing action of conventional magnetic tape.



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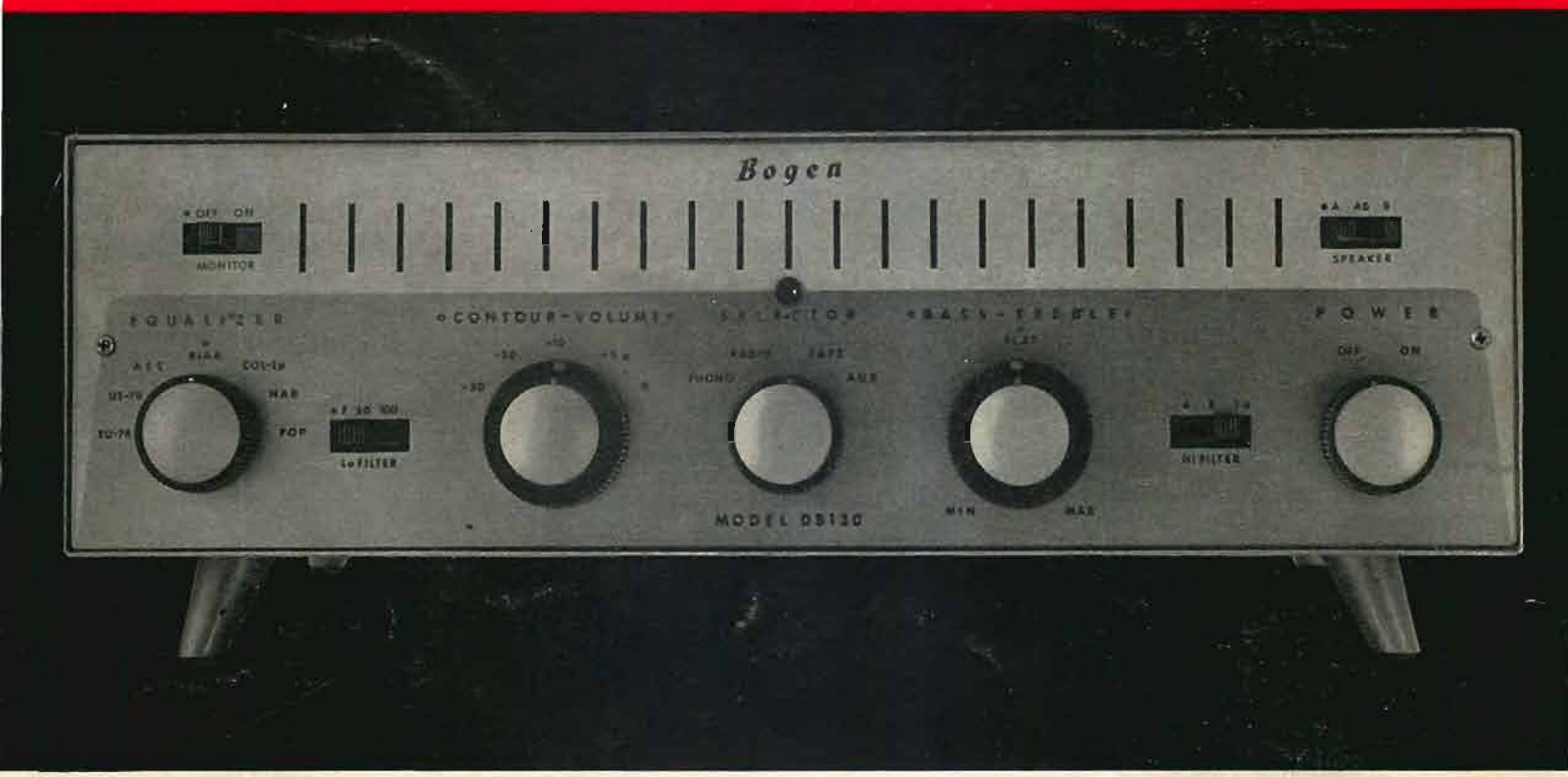

BOGEN DB130 35 WATT AMPLIFIER

There are good reasons why the Bogen DB130 is preferred by most experts. First, it is the only high-fidelity amplifier and pre-amplifier combination rated by all three independent consumer organizations as "best" regardless of price! Second, it is one of the few high-fidelity amplifiers with sufficient undistorted power output to drive the latest type extended-range speakers.

But, judge for yourself . . . read the adjoining specifications, then put a Bogen DB130 through its paces at your local high fidelity shop.

Bogen
HIGH FIDELITY

David Bogen Co., Inc., Paramus, N. J.

SPECIFICATIONS

POWER: 35 WATTS. PEAK: 100 WATTS • FREQUENCY RESPONSE: 15-30000 CPS WITHIN 0.5 DB • DISTORTION: 0.3% AT 35 WATTS • INPUTS: LOW MAGNETIC. HIGH MAGNETIC. HI-FI CRYSTAL. TUNER. TAPE. AUXILIARY (2) • OUTPUTS: SPEAKER(S). TAPE • CONTROLS: POWER (ON-OFF). CONTINUOUSLY VARIABLE BASS AND TREBLE. SEPARATE CONTINUOUSLY VARIABLE LOUDNESS CONTOUR SELECTOR. INPUT SELECTOR (PHONO. RADIO. TAPE. AUX.) 7-POSITION RECORD EQUALIZER. INFINITE DAMPING CONTROL. LO FILTER (FLAT. 50C. 100C). HI FILTER (FLAT. 8KC. 4KC). SPEAKER SELECTOR SWITCH (A. AB. B.) TAPE MONITOR (ON-OFF). AUX ADJUSTER. HUM ADJUSTER • CHASSIS: $115.00 • BLONDE OR MAHOGANY-FINISHED ENCLOSURE: $7.50