

# High-Fidelity

SPRING ISSUE  
VOL. 1 No. 4

Published by Milton B. Sleeper

Price \$1.00

## Symphony No. 3

L. van Beethoven, Op. 55  
(1770 - 1827)

Allegro con brio (♩=60)



Violins I

Violins II

Violas

Cellos

Basses

Flutes

Oboes

Clarinets in Bb



Devoted to the Interests of Audio-philés



**discs or tape**  
 it's **audio** for  
 consistent, uniform  
 quality



**audiodiscs\*** For more than 12 years, Audiodiscs have consistently set the standards for the finest professional performance in instantaneous and master disc recording. Their flawless perfection, wide-range frequency response, extremely low surface noise at all diameters and complete freedom from humidity effects are just a few of the reasons why Audiodiscs are first choice with professional recordists from coast to coast. They know from long experience that they can depend on Audio for the *consistent, uniform quality* that is so essential in modern sound recording work.

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**NEW** Free Handbook on The Fundamentals of Magnetic Recording



This completely new and up-to-the-minute technical manual contains 50 pages of valuable information on basic magnetic principles and tape performance. Professional recordists will find it extremely interesting and helpful — an important addition to their reference files. A request on your business letterhead will bring you a free copy by return mail.

Write to Audio Devices, Dept. H3.



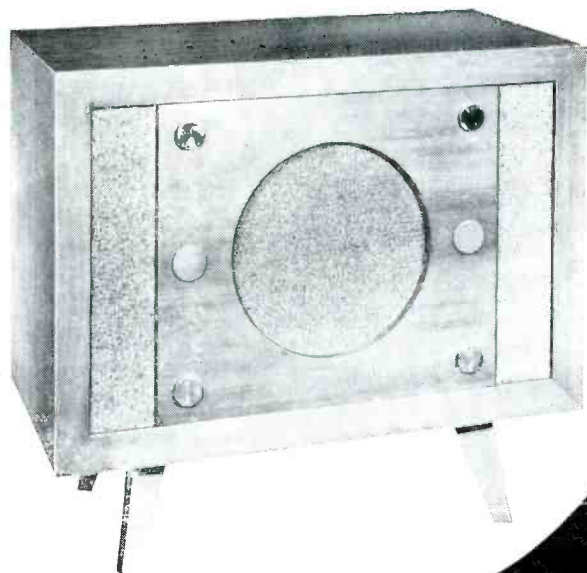
\*Trade Mark

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the perfect setting  
for a fine loudspeaker

# Jensen

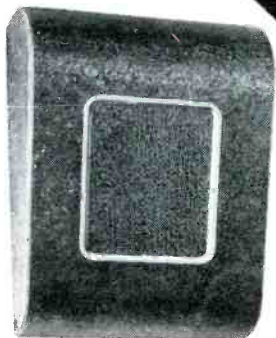
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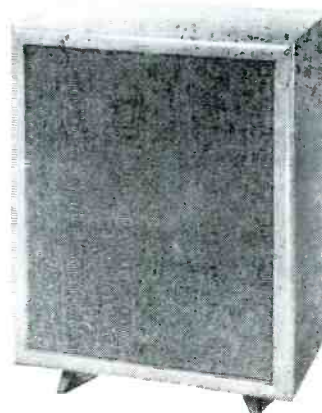


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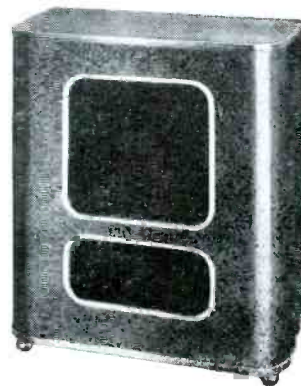


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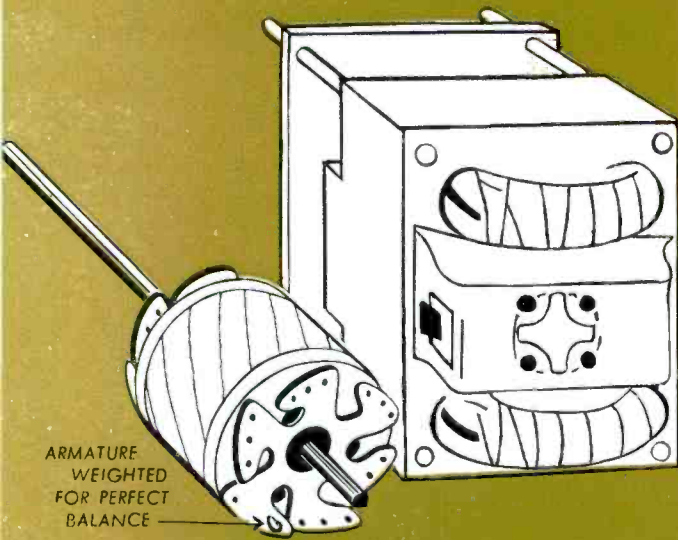


TYPE B BROWN LACQUER FINISH—FOR 10" SPEAKERS



BURTON BROWNE ADVERTISING





★ **4-pole heavy duty motor**  
with armature balanced in operation...

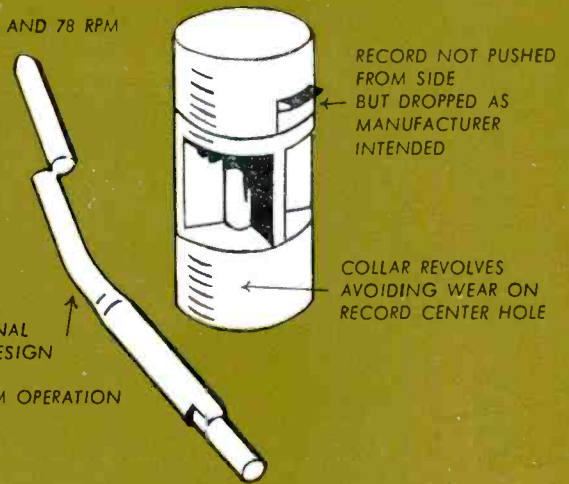
because only a 4-pole motor can eliminate hum induced by stray magnetic fields when sensitive pickups are used and because only a dynamically balanced armature can guarantee genuine rumble-free motor performance.

Of course, the Garrard has a 4-pole motor with dynamically balanced armature, assuring greater smoothness and more even power.

FOR 33 1/3 AND 78 RPM

FOR 45 RPM

GARRARD ORIGINAL BENT SPINDLE DESIGN FOR FOOLPROOF PUSHER-PLATFORM OPERATION

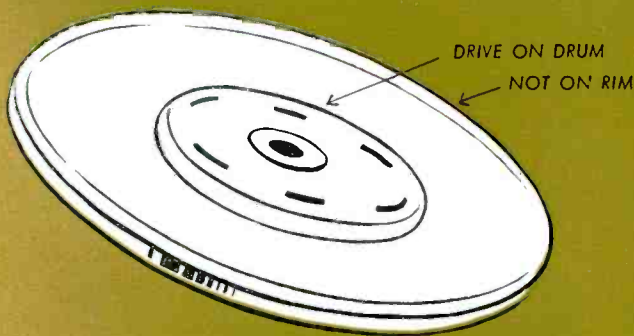


★ **Interchangeable spindles...**  
one for 33 1/3 and 78 rpm; another for 45 rpm

because records should be played as the manufacturers intended, adding to record life and resulting in greater convenience for you. No need to "stock up" and "plug up" with spiders.

Of course, the Garrard provides both spindles. In fact, Garrard was the first record changer to feature the bent spindle design, which has been so widely imitated.

★ **What to look for in a record changer...**



★ **Weighted turntable...**

because only a weighted turntable provides the "flywheel action" which helps to eliminate wows and wavers. When the turntable is driven along a precision-built drum, as in the Garrard, instead of along the rim, as in ordinary changers, you avoid "flutter" and uneven speed.

Of course, the Garrard quality turntable is heavily weighted and scientifically balanced. See for yourself and compare!—Ask to lift and examine the Garrard turntable at any sound department.

**Imitated But Never Equalled**

- HEAVY DUTY SILENT MOTOR • PULL-AWAY IDLER WHEEL
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- TWO INTERCHANGEABLE SPINDLES



RIGID, "JEWEL" PRECISION MOUNTING

UNIVERSAL SHELL FOR VIRTUALLY ALL POPULAR CARTRIDGES

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★ **"Jewel" mounted, non-resonant tone arm**  
with plug-in universal shell...

because tone arm "drag" or poor stylus tracking will damage your records from the very first playing and because a pickup shell which accommodates all the popular crystal and magnetic type cartridges, including Audak, Pickering and GE twist models, will enable you to satisfy your own preferences regarding cartridges.

Of course, the Garrard tone arm is precision-mounted to provide genuine floating response. And Garrard supplies you with 2 universal pickup shells for the cartridge of your choice—now and in the future.

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## AUTHORitatively Speaking

This month's cover is a reproduction of an original drawing and design by the well-known New York artist, Stanley Bate. We liked his portrait of Beethoven so well that we reproduced it again, minus the decorations and in smaller scale, on page 37.

When we heard that Albert Kahn, president of Electro-Voice, had bought a house in the country for himself and his family, we knew that one of two things would happen: either the loudspeaker system would be one of the finest in captivity, or silence would reign supreme and even the TV set would be mutilated by a laryngectomy. Sound won, and won such an overwhelming victory that a 24-in. television screen is but a minor obstruction in the throat of the loudspeaker horn. For details, see page 13.

Ernest Schoedsack, author of the article on tape editing, page 16, is a former motion picture director-producer who has turned his attention from snippets of sight to snippets of sound. He discusses editing from two important points of view: the practical (how to wield the shears) and the esthetic (where to wield them).

One day not long ago, we asked Victor Pomper, assistant general manager of H. H. Scott, what all the knobs on their 210-B amplifier were for. He answered in nine words: tone and volume controls, noise suppressor and range control. When we looked blank and said, "So?", Vic's expanded answer took several hundred words. We continued in our nasty mood, interjecting a "So?" every time he thought he was through explaining . . . until we had extracted the 6-page article which begins on page 19.

On page 25 is a short article telling, with exceptional candidness, the pros and cons of wire versus tape for home recording purposes. The author, C. B. Dale, is in a particularly good position to know the advantages of each type of recording medium, because his company — Webster-Chicago — manufactures both wire and tape equipment.

The article by Gerald Shirley on page 28 will prove slightly terrifying and very helpful. Temporarily, the article befits the man. Shirley is always helpful, but momentarily terrifying. At least, he set up terrifying howls when we sent him the printer's galley of his article for final proofreading. There was nothing wrong with the

*Continued on page 91*

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# High-Fidelity

THE MAGAZINE FOR AUDIO-PHILES

Volume 1 Number 4 Spring 1952

CHARLES FOWLER, Editor

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MILTON B. SLEEPER, Publisher

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# AS THE EDITOR SEES IT

**T**HIS morning, our printer sent us proofs of the cover for this issue of HIGH-FIDELITY. We scrutinized it carefully, as usual, and then the small imprint up on the left hand edge caught our attention: Volume 1, Number 4.

In what has often seemed the course of only a few weeks, a year had rolled by.

A short while ago, the Beethoven cover design was but an idea to be discussed, a thought far from realization. Today, it became reality.

A year ago, HIGH-FIDELITY Magazine itself was but an idea to be discussed. When this issue reaches subscribers, we shall have completed our first year and the idea will have borne fruit in the form of 376 pages of magazine. Thousands of individuals in every country of the world have lent their support to the project.

That we have been able to give many readers what they hoped for is apparent from the letters which continue to pour in, and from the surprisingly large number of what our circulation department calls advance renewals: subscriptions extended before their actual expiration dates.

The cold, statistical index of satisfaction will be the renewal percentage. Already, one-year charter subscriptions are expiring and many readers will be receiving letters which say, in essence, "Well, what do you think? Was it worth what it cost?" The renewal percentage will be the incontrovertible indication of how much, or how little, we have achieved.

Our own feeling is that we still have a long way to go. We feel that we have done much but there is still a great deal more to be accomplished. We are nowhere near achievement of our own ideals and hopes for the Magazine. We have been able to answer many of the questions most often asked, with articles on the particular problem. But, too often, we are obliged to hold over important material for lack of space in any one issue.

**T**HAT brings us to an apology (one of several!) for the small type face which we use for certain material. For instance, C. G. Burke's colossus on Beethoven has been set in 8-point type which, in such a large quantity, is undeniably hard on the eyes. But the dilemma was this: should we publish it all at one time in small type, or should we split it into two or three installments? The small type won, partly because of the great significance of the work as a whole and partly because we are anxious to publish such articles on as many of the great composers as possible. For instance, Mr. Burke's next article will be on Verdi. We want to have this in the Summer issue; if Beethoven had been split, we would have been obliged to hold the Verdi feature until the Fall or Winter issue.

Incidentally, the Beethoven material, had it been printed as a book, in book-size type, would have required approximately 120 pages!

For the same reason — to enable us to publish as much information as possible — we use small type for record reviews and for the run-over material in the back of the Magazine.

We apologize — and hope that readers will not be too unsympathetic with the reasons behind our decisions.

**W**E ALSO want to apologize for our almost total collapse as a correspondent. We sincerely appreciate every letter received, for each is of specific help in preparing editorial contents of maximum interest to the largest number of readers. Each letter *shall* be answered. But when! That is the \$64 question for which we have yet to find an answer. This is one of those things left undone about which we feel the most keen regret. Yet publication of the Magazine, approximately on schedule, must come first . . . and there are still only 24 hours in any one day.

As we gain experience in coping with the myriad problems of this particular publication, as others on our staff become trained in handling these problems, there will be more time for the enjoyment of correspondence. Meantime, we stand in the corner, shamed, and ask forbearance.

**A**LL THIS is looking backwards. Casting a brief glance ahead, we can promise expanding horizons, more and more accomplishments (and fewer things left undone!). The industry continues to grow with astonishing rapidity. There is an increasing awareness of high fidelity on the part of equipment and record manufacturers, reflected by improved products. In our own organization, the hecticness of the first year is subsiding, and a smoothly operating organization is growing out of what, for a while, was little more than chaos, created by an avalanche of overwork of every kind.

On the editorial side, we know more about what readers want. We know better how to secure and prepare material of maximum interest and value. As an example, we are building a notable staff of record reviewers, and are thus able to cover a greater proportion of the LP releases. Another example: a trial balloon in the direction of the Music Between aroused much interest. Hence, Edward Merritt will be back in the next issue with more data on this subject.

We can summarize our outlook for the future by saying, "At last, we're really beginning to roll."

Charles Fowler



*Purity of bass down to 30 cps*

WITH  
THE NEW

KLIPSCH  LICENSED

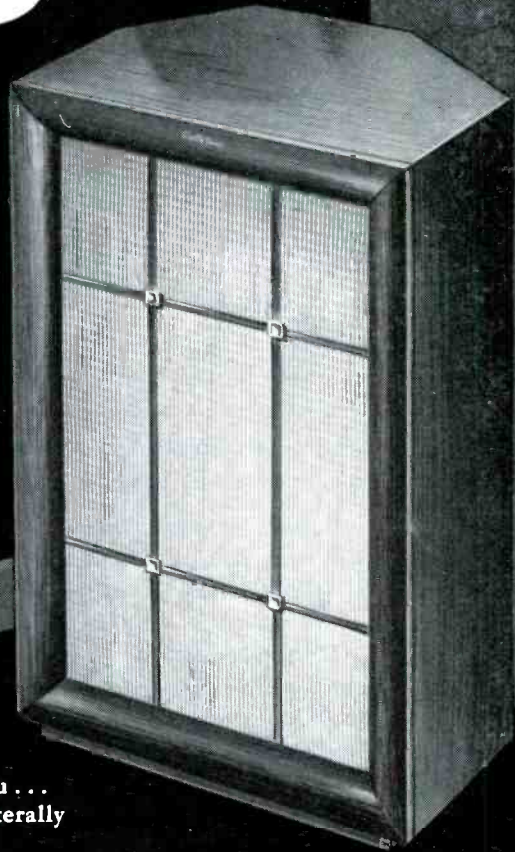
# Royal

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*feel!* This beautiful corner cabinet  
employs the walls of the room as an  
extension of the exponential air load on  
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**The ROYAL—Another E-V First!**

Fits beautifully in any room. Exquisite  
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**The ARISTOCRAT**  
Popular low-cost E-V folded  
corner horn enclosure for  
single 12" full range speaker  
29 1/2" high, 16 1/2" deep,  
19" wide.  
Mahogany. Less Speaker  
List Price . . . . . \$ 99.50  
Blonde. Less Speaker.  
List Price . . . . . \$106.00

## Electro-Voice

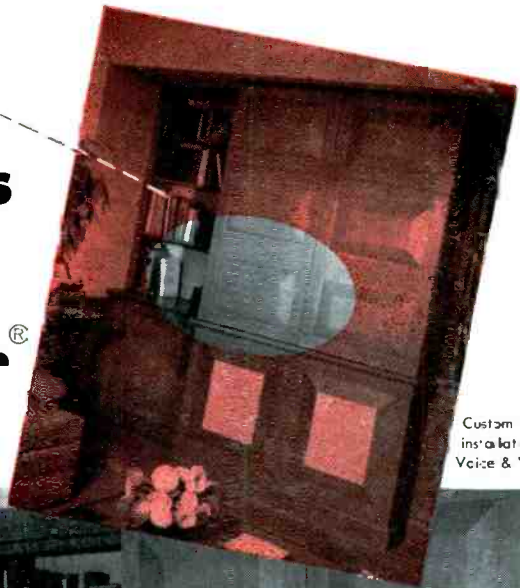
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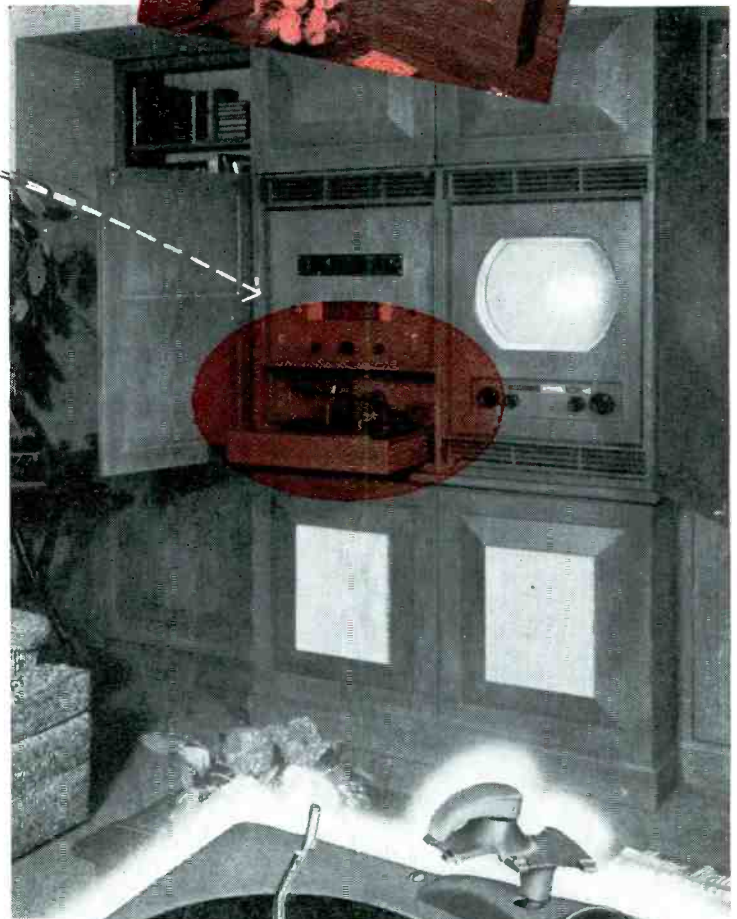
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why it should be  
the new Webcor<sup>®</sup>**



Custom  
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Voice & Vision Inc.

Your hi-fidelity installation deserves those components that provide the "extras" which, when combined add up to 1 pride of ownership and 2 truly fine high fidelity reproduction. The new Webcor 106-27 HF Diskchanger gives you both. The features your installation *must* have to perform at its best are those that are found exclusively in a Diskchanger made by Webster-Chicago.

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- Absolute minimum rumble.
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- Retractable idler wheel eliminates flat spots on drive surfaces.
- Plug-in head takes popular magnetic cartridges.
- Automatic muting switch between records.
- Super electrostatic flock turntable.
- Easiest changer to install.



*If it's made by Webster-Chicago,  
it's **Webcor**  
... and if it's Webcor  
it is the finest*

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## Noted with Interest:

We have been having an interesting and fruitful correspondence with E. D. Nunn, President of the Northern Signal Co. in Saukville, Wisconsin, about his hobby: disc recording. He has established such a reputation for the excellence of his work that he has had to make duplicate pressings for friends and associates — which has resulted in still more requests for copies. At the Audio Fair last Fall, we discussed with Mr. Nunn the possibility of telling readers of HIGH-FIDELITY about his work, and duly warned him that such publicity might swamp him. Here is Mr. Nunn's most recent letter. The only comment we have to make is to him: don't tell us we didn't warn you! — Personally, we are putting in our order for the organ record right now.

"I do not feel in the least that you are intruding upon my privacy — I get such a big kick out of all this research into high fidelity that I am glad to share my results with others — if others can stand them. The only trouble with all this is that my volume of record business is so small that the pressings are almost ridiculously high in cost. I have run out of my original lot of pressings and have reordered in small quantity. The result is that I must sell a 10-in. vinylite pressing (78 rpm.) at \$3.00 net, postpaid. This is absurdly steep but I cannot help it. I have three records of a good jazz band. The six sides are entitled Wolverine Blues, Chimes Blues, Lasus' Trombone, Tia Juana, Pop Goes the Weasel and Sophisticated Lady. Of all those sides, I believe that Pop Goes The Weasel is the most appealing to 'us crackpots'. It is full of rather steep wave fronts and spectacular effects. And above all things, it is not distorted.

I also have an album of three 12-in. 78 rpm. records pressed on vinylite, made of the local Lutheran A Capella Choir. Although these records are less spectacular, they are free from distortion and for those who like A Capella choir music they are good records.

Both types of records are available but judging from my mail this morning, I will have to re-press some of the jazz sides again. Incidentally, the album is being sold at \$6.00 while they last — I could not replace them for this amount, however.

I have just completed work recording a beautiful tracker type pipe organ over in Sandusky, Ohio, but since I have no idea what the market would be, I am a little reluctant to go ahead with the processing."

### Audio is not Radio

Needing a 12SL7 tube in a hurry, we stopped in at a radio repair shop in Great Barrington to get one. "Hm. That don't sound familiar. That a radio tube?" "Sure! There are two of them in the amplifier we're using." "What I thought. Nope. 'Tisn't a radio tube."

And that story reminds us of another, also local, also true. A man with a fine hi-fi system wanted to add a speaker to operate in another room. He called the best service organization in the nearest large community (population 60,000). He

*Continued on page 8*

# WHY WQXR DEPENDS ON G-E HIGH FIDELITY EQUIPMENT



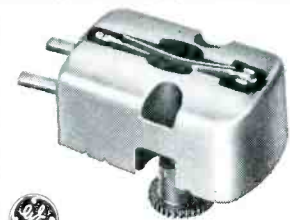
## Professionals Rate G-E Audio Equipment Unsurpassed For Tone Clarity. Home Installations Growing Rapidly

**WQXR**, the radio station of The New York Times, backs up its enviable reputation by using the finest audio equipment available. Elliott Sanger (above), Executive Vice-President of the station, reports:

"Our high standard of quality in record reproduction is maintained by the General Electric Cartridge and Diamond 'Baton' Stylus."

In use at no less than 14 different locations at WQXR, these G-E products help to bring you the remarkable fidelity of sound for which this station is famous.

**Did you know** that you can have G-E equipment like this in your home phonograph or sound system? The cost is reasonable, the enjoyment almost limitless. Ask your G-E dealer. Meanwhile, fill out and mail the coupon for free catalog.



**FAMOUS TRIPLE PLAY CARTRIDGE** — (RPX-050) plays 33, 45, 78 rpm records without changing its position in the arm. Simply depress and turn red button to change stylus, which is replaceable.



**G-E 1201 HIGH FIDELITY SPEAKER**—Frequency response of 50 to 13,000 cycles. Large Alnico 5 permanent magnet, aluminum base voice coil. This speaker is ideal for high fidelity applications.

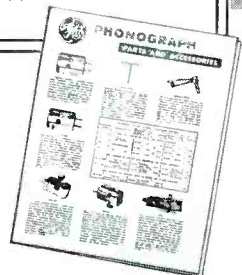
General Electric Company, Section 5422, Electronics Park, Syracuse, N. Y.

Please send me, without obligation, your new full line Phonograph Accessories folder.

NAME \_\_\_\_\_

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CITY \_\_\_\_\_ STATE \_\_\_\_\_



# GENERAL ELECTRIC



# In the home that is wired for magic you'll find a **BROWNING TUNER**

Today, the ether is a treasure house, if you have the key to unlock it. Great music, better than ever before, with all the ultra-fidelity of microwave relay from concert stage to radio transmitter — and an increasing wealth of educational programs, lectures, forum discussions, and the finest performances of the legitimate stage.

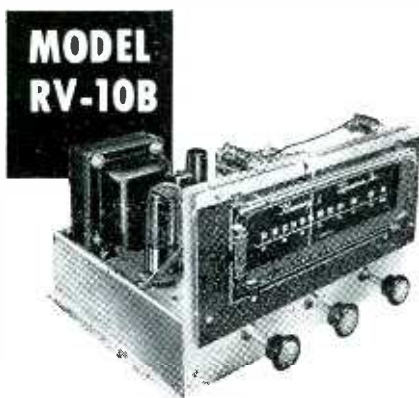


## MODEL RJ-20B FM-AM TUNER

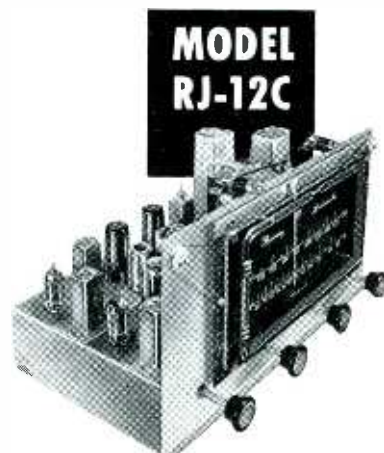
- Armstrong FM circuit; 20 db quieting with 6½ microvolts
- Separate r.f. and i.f. on both bands
- AFC on FM with ON/OFF switch
- AM bandwidth selection, 9 kc. and 4 kc.
- Drift-compensated
- FM audio 15-15,000 cycles ±1½ db.
- 20 db treble and bass boost
- self-contained power supply.

## MODEL RJ-12C FM-AM TUNER

- Armstrong FM circuit; 20 db quieting with less than 10 microvolts
- Separate r.f. and i.f. on both bands
- AFC on FM with ON/OFF switch
- Drift-compensated
- FM audio 15-15,000 cycles ±1½ db
- AM audio 20-6600 cycles ±3 db
- Triple-tuned i.f.



In the perfect comfort and convenience of your own living room, you can have all this — with the complete sense of actual presence which is the foremost requirement for the feeling of true participation. If you have a Browning tuner. And an amplifier and speaker with the required extended frequency response.



## MODEL RV-10B FM TUNER

- Armstrong FM circuit; less than 10 microvolts for complete limiting
- AFC on FM with ON/OFF switch
- 2-stage cascade limiter
- Tuned r.f. stage
- Drift-compensated
- High impedance output.

Learn the full specifications for Browning high-fidelity — write for complete performance curves and data on these models.

In Canada, address:  
Measurements Engineering Ltd.  
Amprior, Ontario.



**BROWNING**  
Laboratories, Inc.  
Winchester, Mass.

## NOTED WITH INTEREST

*Continued from page 7*

had the system in operation when the repair man arrived. The latter listened attentively, then said, "Gee, sure sounds squeaky, don't it? Sure your amplifier is O.K.?" There followed the process of examining equipment stored in bookshelves. "Yeah, that's the trouble. Can't expect to get much of anything out of that amplifier. Tell ya what, I can get a good amplifier over in Springfield. They're not awful expensive; might even get a good second-hand one for about \$35." — What was the amplifier in the bookshelves? A McIntosh.

Ah me!

## Audio (not radio) Goes to College

To counteract the discouraged gloom engendered by the preceding item, we quickly bring to your attention the news that New York University is so aware of the importance of high fidelity that a course of fifteen weekly sessions will be given on "High Fidelity Reproduction of Sound . . . Lectures will include discussion of methods and characteristics, the nature and perception of sound, requirements of good reproduction, loudspeakers and loudspeaker baffling . . . and design of a complete high fidelity system." Thanks, NYU, for restoring our faith in the future.

## FM Station List, Revised

In the preceding issue of HIGH-FIDELITY, we published a list of FM stations in the Country. Although our information had been compiled from the most recent data available from the Federal Communications Commission, there were the customary number of inaccuracies. We are indebted to our readers for catching the errors, as reported in the following letters. We hope other readers will similarly scrutinize the FM station list and advise us of changes and corrections.

I am taking the liberty of calling to your attention some errors in the list of FM stations.

In Washington, D. C.:

- WASH is no longer in the CP stage. It's operating quite well.
- WQQW-FM is now WGMS-FM. It also is no longer a CP.
- WOL-FM is on 98.7 mc.
- WWDC-FM is on 101.1 mc.

In Maryland:

- WMCP is now WWIN-FM.
- WBCC-FM is now WUST-FM.
- WFMD-FM is now on the air.
- WOOK-FM is on the air and has changed to WFAN.
- WGAY-FM has gone off the air.
- WCBM-FM has gone off the air.

As far as good music programming is concerned, WGMS has a full-time good music policy, from 6:30 A. M. to midnight. WWIN has good music from 6:00 to 11:00 P. M. and all day Sunday. WCFM has good music most of its schedule from 5:00 to 11:00 P. M. WASH has good

*Continued on page 87*

## Readers' Forum

SIR:

I enjoyed very much reading HIGH-FIDELITY and found it quite informative in dealing with things interesting to those of us who are building up good high fidelity equipment. Having formerly been a professional musician for about 15 years, I find myself with a champagne ear but, unfortunately, only a beer pocketbook. Like many others, I am trying to build up a good system over a period of time.

I have found it quite discouraging to get good fidelity off records despite all of the special turntables, reluctance cartridges, diamond stylus pickups, good amplifiers, and fancy speakers. Nothing that I have heard will compare with good FM radio or tape recordings at 15 ips.

Since the record companies are now using tapes for making the original recordings before pressing records, and there are many places, like New York City, where full 15,000-cycle FM broadcasts are made daily with good music such as the Sunday NBC Symphony, surely somebody must have available good tape recorded at 15 ins. at a reasonable price. If they don't, looks like somebody is really passing up a bet to get in business.

We also understand that all major radio programs are tape recorded, and possibly some of the radio broadcast companies would consider selling good 15,000 cps. reproductions of the better musical programs

W. H. Adcock

Atlanta, Ga.

SIR:

Thank you for your letter of 15th November and also for the specimen copy of your journal. I have read this with great interest: certainly there is no parallel magazine here in England.

You asked for comments and suggestions. For some time now (a matter of years) I have been puzzled by the very great engineering differences between gramophone records made in your country and those made in England, Germany and Czechoslovakia. There are small differences between the products of the various European firms, too, but, by and large, they retain a sufficient degree of similarity to give fairly good average results without much juggling with complicated tone controls and what I believe you call variable roll-offs.

My own equipment consists of 2 Sugden single-speed motors (one for 33 1/2 and one for 78), an Enock pickup for 78 and a Leak pickup for 33 1/2 (both with diamond stylus), the latest model Enock amplifier and the latest model Mordaunt duplex speaker system. This stuff is all consistently maintained at the highest possible standard of performance and I use it for all my reviews.

It was substantially modified for LP about 18 months ago when Decca introduced these on the English market and I now get fairly good results from the best 33 1/2 records; quite listenable in fact, but not really comparable with the finest modern 78's which will provide realism that is barely

Continued on page 11

# There's tape recording... and there's

# "Magne recording"\*

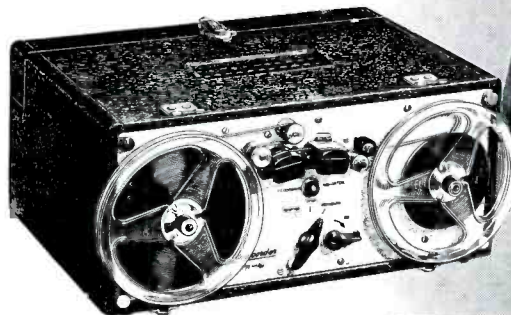
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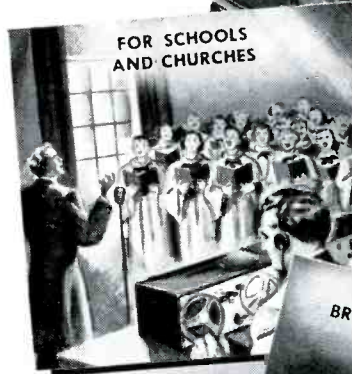
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FOR RESEARCH



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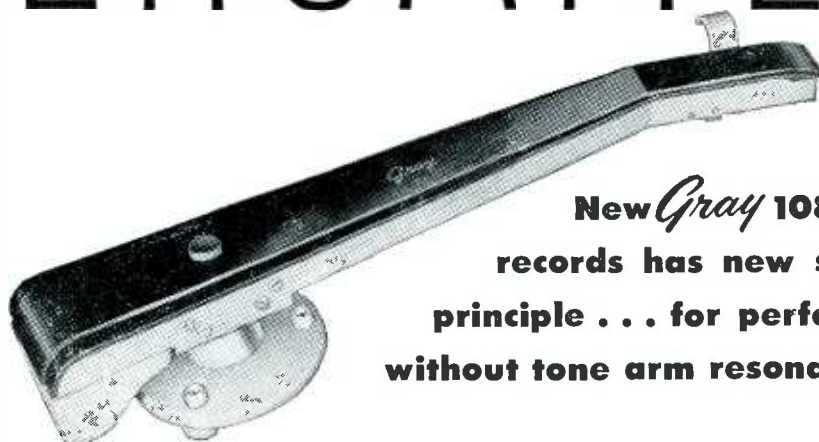
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Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



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**New *Gray* 108-B Arm for all records has new suspension principle . . . for perfect tracking without tone arm resonances**

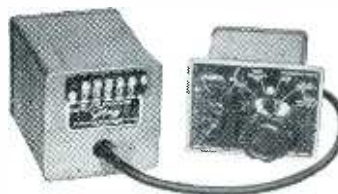
Perfect tracking of records and virtual elimination of tone arm resonances are only two advantages of this versatile, specially-designed arm — the finest yet developed! It satisfies every requirement of LP reproduction, permits instant changing from 78 r.p.m. to LP (micro-groove) or

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#### **106-SP Transcription Arm —**

Assures fidelity of tone for every speed record. Three cartridge slides furnished enable GE 1-mil, 2½ or 3-mil, or Pickering cartridges to be slipped into position instantly, with no tools or solder. Low vertical inertia, precisely adjustable stylus pressure.



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## **GRAY RESEARCH**

**and Development Co., Inc., 16 Arbor St., Hartford 1, Conn.**

Division of The GRAY MANUFACTURING COMPANY—Originators of the Gray Telephone Pay Station and the Gray Audograph



*Walter E. Ottum*  
President

## READERS' FORUM

*Continued from page 9*

distinguishable from the live performance. Some slight, but consistent surface "hiss" is the only telltale.

Now, no matter what I do, I cannot get equally good results from the records made in the U.S.A.; neither on 33 1/3 nor 78 rpm.

Admittedly on LP I have only had experience of one set of American discs — the Haydn Society's set of *Idomeneo* — and I have no idea how these four records compare with your average standard. Certainly they are not as realistic as the best stuff being issued currently here by Decca.

In the matter of 78's: Toscanini's *Traviata* (there is no other possible description!) has just been issued by His Master's Voice, and I can truthfully say I have no recollection of any other release in recent years that was so poisonously unpleasant to listen to. The orchestral sound is dead, the climaxes (both vocal and orchestral) invariably distort and most of the time the singers are too close to the microphone or sing too loudly or both. Of course, I know that not all your 78's are as bad as this; but are there any which sound as good as the best European examples? If so, can you mention one or two, and can you tell me how my machine should be set in order to get the best result from them?

Now this letter is already too long, but perhaps you may find in it the germ of an idea for some sort of clearing of the air regarding European and American recording characteristics. Most of us English reviewers would like to be able to say a good word for your records when they reach us, but usually they sound horrible on our machines. Is this our fault or yours, and if it is ours, what are we to do about it?

Geoffrey Sharp  
Editor, Music Review

Takeley, England

SIR:

This is in answer to your letter in regard to our Masterwork Record Club.

We had our first meeting of around six young men on Sept. 29, 1941. Two of the six, myself and Romain Ruff, are still in the Club. You might say we are charter members. The other two members, or listeners, still with us are Wilbert Hordendorf and Ralph Kroboth. We four are the ones who have been listening to recorded music for two hours one night a week for ten years.

Between the four of us we have some 1,500 records, and have listened to about 7,000 single 10 and 12-in. 78's, as well as 150 LP recordings, plus eleven 45 rpm. records and around 2 hours of tape recordings.

Our library is varied in taste. One chap likes the three B's: Bach, Beethoven and Brahms. One of the others has a lot of Russian music. Another one has a large list of vocal recordings. As for myself, piano and organ are on my list. So you see, we get a good coverage of music for listening. Also have a number of Quartet recordings of the Chamber Music variety.

*Continued on page 79*



# Balanced tone

... from the flashing sunlight  
of Mozart to the storm of  
Shostakovich

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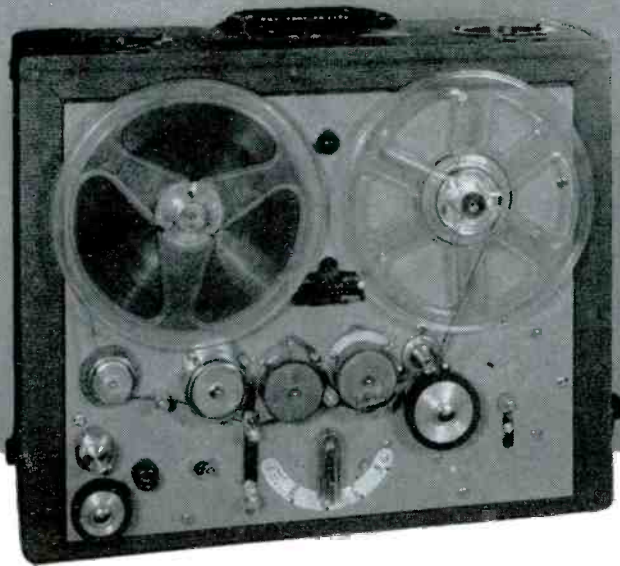
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\* Model PT-920

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# Design for a

# Residence Entertainment Center

By ALBERT KAHN

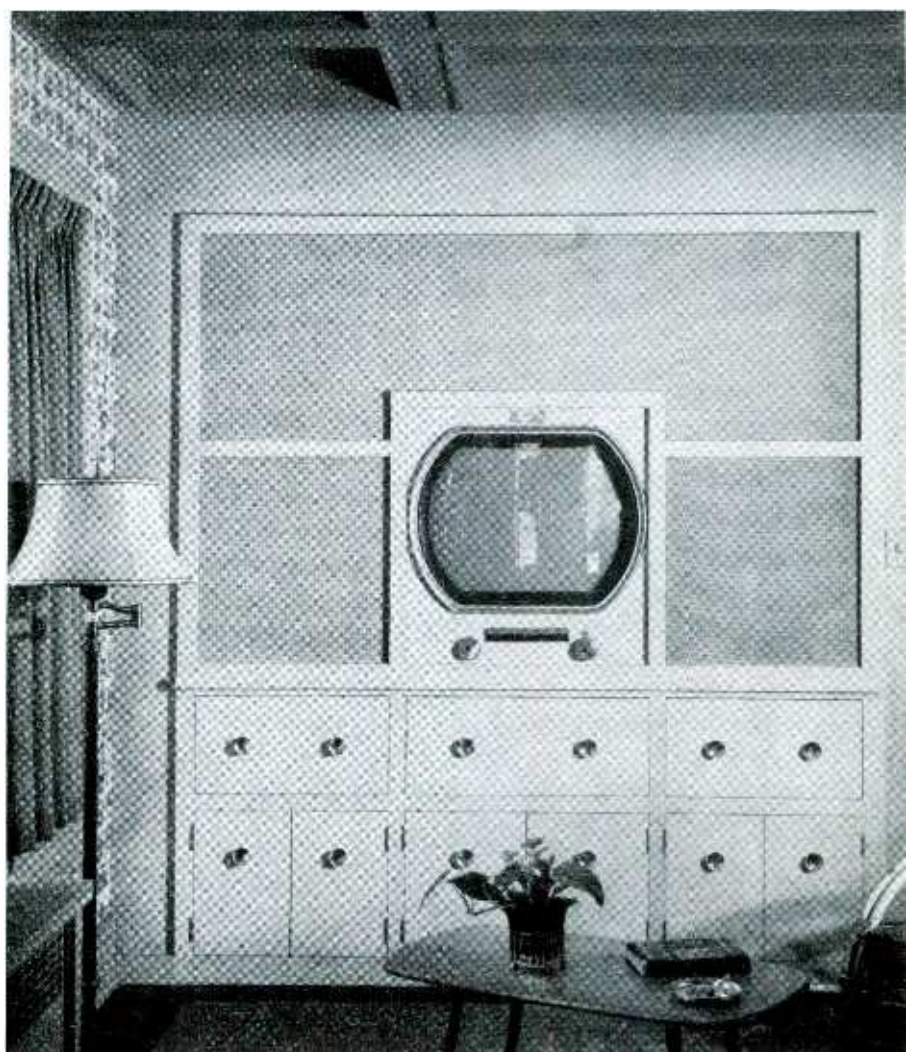
**E**ARLY last Spring, we bought an old house in the country. The house was one of those rambling affairs which has had innumerable additions. The original part was at least 100 years old, and the whole thing looked like a run-down summer hotel from the outside. However, it provided ample room for our family of five, as well as for my personal activities in the fields of amateur radio, photography and high fidelity. It also provided a golden opportunity to make a hi-fi dream come true, for this was one of those rare occasions when designing could be done with virtually no compromise. Even a wife's natural reaction to tearing out a perfectly good wall was averted by a bit of conspiring with our architect, Mr. Roy Worden. With the wall gone, the speaker system could be made *big* — and bigness is a *sine qua non* in high fidelity loudspeaker design because, at low frequencies, we must deal with long wave lengths.

## Our Requirements

Our requirements of the system were numerous and stringent: optimum realism, fidelity, and enjoyment for the whole family. The last was perhaps the most difficult to meet! Having a wife who likes classical music, a teen-age daughter who prefers popular records and TV, and two younger daughters who love children's radio programs and records, I required a system that would be flexible enough to satisfy all their tastes, yet simple enough so that any member of the family could operate it.

*Fig. 1. All equipment for residence entertainment center is built into one end of room. Low frequency speaker horn is 6 ft. wide.*

Although we are not rabid TV fans, TV has become a part of home entertainment. Therefore, it had to be carefully integrated into the system. Musical programs produced with technical excellence such as the Fred Waring show, must be made to live and breathe with complete





realism so that the viewer (and listener) can almost lose himself as he would at a live performance of a musical comedy.

As Howard Souther, the Manager of our Speaker Division, comes from the motion picture industry, this was definitely his assignment. He took over the design of the high fidelity system as soon as the deed to the house was delivered. Fortunately, since we were involved in a lot of remodeling, his recommendation that we knock out a wall and build a structure attached to the house for the speaker didn't adversely affect my marital relations to any great extent!



*Fig. 2. Three drawers, underneath the television screen, house record changer, FM-AM tuner, tape recorder, antenna and amplifier controls, and transcription turntable.*

The room in which our system was to be installed was right off the living room and is now used for general play activities. The floor is asphalt tile — for shuffleboard, dancing and children's parties. Acoustically it is live, but not too live. As the room is done in light woodwork, blonde framing and light grille cloth were selected for the system, Fig. 1.

When a few of us sat around a drawing board, planning the system, we found that all the components were of the type that were readily available from distributors of high fidelity equipment. This assured simplicity of operation and installation, moderate cost and ready availability. Nothing would be gained by going to a laboratory-type installation.

We finally decided on a 24-in. TV screen. It since has proved a wise choice, when a large group is viewing a fight, for example. For smaller groups, a 20-in. screen would certainly be very adequate. The center of the screen is 4 ft. from the floor, so the viewer, from a sitting position, looks up slightly. The sound emanates from *around* the screen with the super-tweeters at the mouth-

level of performers, giving an almost perfect illusion.

An AM-FM tuner was incorporated in one of the sliding drawers, Fig. 2, and has been a popular source of entertainment for the whole family. Strangely enough, we have had an FM receiver for years but, without genuine high fidelity, it was rarely used.

A tape recorder, operatable at 15 ips., was mounted to the rear of the center drawer. This enables me to use tapes dubbed from fine originals which I am now collecting. In addition, I have splendid recordings made from live FM programs. We also use the recorder frequently to check the musical progress of our youngsters and to let them hear their mistakes, in the manner of a football coach who uses movies of last week's game for the same purpose.

Most amplifiers, today, are good and there were a number which we could have selected. We felt that it was desirable to have good compensation for the specific characteristics of different makes of records and for different functions of the system. Several amplifiers have these features, all selling for about \$200.

Under normal conditions, modern record changers are excellent from the standpoint of wow and rumble. However, with a system capable of reproducing efficiently in the realm of 30 cycles and below, a transcription turntable becomes a necessity to gain the full effect of clean bass, unmodulated by rumble. Accordingly, both a changer and a transcription turntable were built in and both are in regular use. The children pile up the changer with popular records, attenuate the bass and they're off. For serious listening, my wife and I usually use the transcription table with the bass control in its normal position.

Our geographical location — 90 miles from Chicago — brings us into a moderate fringe FM and TV area. The antenna shown in Fig. 3 is one that happens to be in use at the moment, although a double "V" has also proved to be excellent.

An Electro-Voice TENNA-TOP booster feeds an E-V model 3100 Distribution System. This, in turn, feeds the 24-in. TV set, the FM-AM receiver and a small-screen TV and FM-AM set in my wife's sewing room.

## Planning the Speaker Installation

A survey of the speaker system location revealed a possible 74 ins. of width, 50 ins. of height, and any reasonable depth up to the end of our lot. A depth of 4 ft., however, would allow some of the theoretically ideal dimensions to be incorporated into the design. These are some of the factors considered:

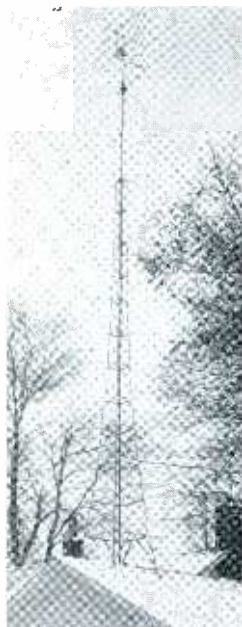
The normal healthy ear can hear 10 octaves. The first three bass octaves have frequencies from 16 to 128 cycles and are the most difficult ones to handle. This is because the reproduction of these frequencies requires the compression and rarefaction of large volumes of air. For instance, the wave length of *second*-octave frequencies averages 25 ft., and a horn to reproduce this should be, theoretically, 6 ft. across the mouth, or one-quarter of the wave length. To hear the *first* octave properly, the mouth size of the horn must be doubled, or 12 ft. across.

Even with all our space, these dimensions just weren't possible. Howard Souther, Lou Hoodwin, the creator of the Hoodwin Horn, and Al Wiggins, the E-V Vice-President in charge of engineering, developed a design which does reproduce the first octave in its entirety. The room is long and narrow — 12 by 30 ft. — and by installing the speaker horn across part of the 12-ft. dimension, the room becomes an extension of the horn. The beginning, or throat, of the horn is directly behind the television chassis, Fig. 4. Two Electro-Voice 18 WK 18-in. units are used as drivers. To save space, the horn then begins to fold on itself until it reaches the face of the wall. At this point the mouth of the horn is approximately 3½ ft. across. This means that the horn, in free space, will reproduce only to the beginning of the third octave.

But — we said that the horn is designed as an extension of one end of the room. The room is of such size as to act as the mouth of the speaker, albeit with some discontinuity at the point of junction. Thus the dimensions and volume of air are correct for the propagation of extreme low frequency sounds.

The discontinuity at the junction of the room and horn lowers the efficiency of the system unless steps are taken to counteract this mismatch. This is accomplished through utilization of a principle first propounded by Paul Klipsch, of corner horn fame. The cavity back of the cones of the two woofers is sealed tightly. It is of such proportions that the weight of the enclosed air, coupled with the resilience of the cones, approximately matches the weight and elasticity of the air far out in

*Fig. 4. For this photograph, the double throat of the low frequency horn has been especially illuminated to show its construction, and the grille covering removed. The woofer horn is driven by two 18-in. speakers. Middle frequencies are carried by the multi-cell horn immediately above the television screen. Two small tweeters add brilliance to the overall sound by extending the range of reproduced frequencies up to the limit of human hearing.*



*Fig. 3. High antenna and TV booster make 90-mile reception possible.*

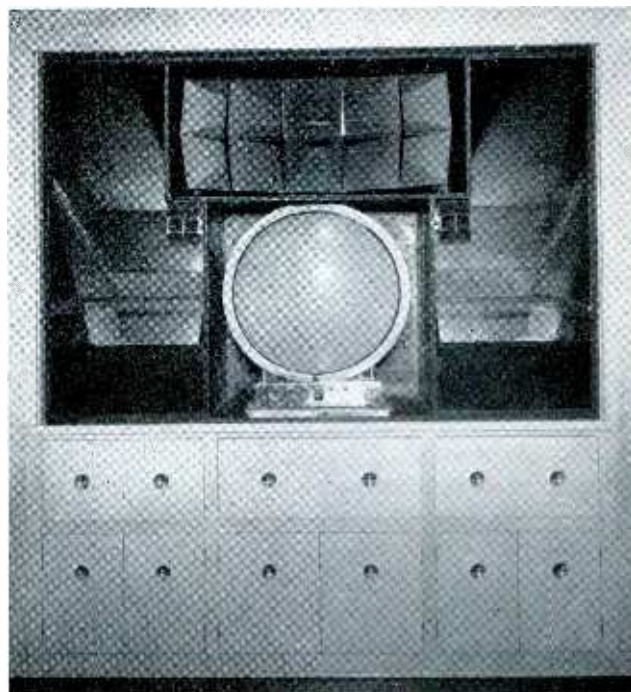
front of the speaker proper. This means that we have what the engineers call a broadly resonant system for the first two octaves. The air compression and rarefaction is augmented in the room horn, and the lowest bass notes are brought up to normal, ear-pleasing intensity.

Low frequency drivers work in the first five octaves very well. The bass frequencies, because of their longer wave length, tend to flow around objects and are non-directional. The mid-range frequencies are assigned to an E-V Model T-40 driver, coupled to a horn composed of ten cells, each pointing to a different section of the room. Thus, the mid-range response also is properly dispersed throughout the listening area. This E-V horn cluster is mounted over the screen and as close as possible to it, to give the illusion of the voices coming directly from the TV screen. This effect is more important, because otherwise the aural-visual discontinuity would be disturbing. Two small Electro-Voice T-10 very-high-frequency drivers are mounted approximately two-thirds screen height, just on a line with the mouth of the artist in a closeup. These units are specially designed to operate in the two upper octaves, and fill in the audible illusion of presence and realism.

## Conclusion

Paul Klipsch dropped in just at the time the system was finished, ready for installation. He listened to one of our widest range tapes and said thoughtfully, "My only criticism is that it is over-engineered." This, from Paul Klipsch, is high praise.

The Residence Entertainment Center has turned out to be a completely satisfying thing to own. Apart from pride in having a system that reproduces splendidly, it has given the family a great deal of pleasure and, I think, contributed to their cultural improvement.





# For the professional touch—

## Edit your Tapes

By ERNEST B. SCHOEDSACK

*If you have tape recording equipment, you are missing half the fun if you don't edit your tapes. Editing can be a simple process of repairing a break or hitching two recordings together or, once the elementary mechanics are mastered, it can be a highly refined art with almost unlimited possibilities. This article describes an arrangement of equipment and a method of editing which simplifies and speeds the mechanical operations of cutting and splicing, and it gives suggestions on the art of tape editing. The author is particularly able to give practical suggestions because he has directed and produced many well-known films, including King Kong and, more recently, Mighty Joe Young. No one knows better the value of editing than a motion picture director!*

AMPLE information is available to the tape recording enthusiast to help him select his machine and make recordings which are technically excellent. While such information is most valuable, it neglects the more liberal and equally fascinating art of transforming these recordings into finished products, ready for the permanent library. This is the art of tape editing: the process of selecting, eliminating, supplementing and arranging recorded material so as to improve its content, continuity and pace.

Skill in the art of editing tape is best gained by experience, but there is also a technique of editing which has to do with the mechanics of the process. This article is for those who would like to begin a study of the art and need guidance in the mechanical process. It is not

for those who regard the tape, just as it comes from the machine, as the finished product and a splice as something to be used only if the tape breaks.

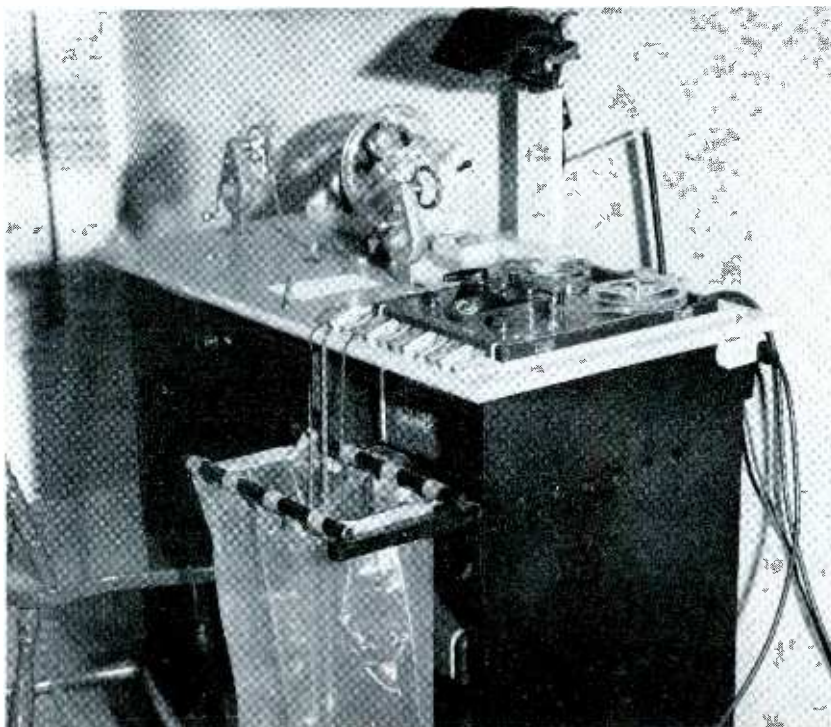
Most people have had all too much experience with looking at long, tiresome reels of 16-mm. amateur film which, had they been cut, titled, and rearranged — that is, *edited* — might have been entertaining instead of boring. Like the motion picture film, almost any tape recording of speech, as well as many recordings of music, can be improved by judicious editing. "Half as long and twice as good" is often as true of tape as of film, for shortening or eliminating overlength or unnecessary material is of equal benefit to both. In any creative medium, a reluctance to discard any part for the improvement of the whole is the mark of the amateur.

While there are many similarities between the editing of tape and film, there is one major difference. The producer of home recordings lacks the excuse of the amateur movie maker for not editing his product: compared to film, the cost of tape is insignificant. There is little waste, for the discarded material can be spliced and reused; supplementary commentary, sound effects and music are not difficult to make and there is no waiting for processing to know their results.

It may be desirable to add spoken catalogue data to musical records, very much as titles are added to film travelogues. Or, a person with sufficient musical discrimination can condense overlength music recordings. Or, since tape can make an actor of anyone, a lot of fun — and very valuable experience — can be had by producing written or spontaneous plays or skits. In the last case, it is only necessary to record and play back each line separately, as many times as necessary to perfect the reading. Then the line or scene is broken out of the reel and identified, ready to be assembled in its proper sequence. Timing of dialogue can be bettered by shortening or lengthening spacing, and unwanted breathing sounds, phrases, and sometimes even single words can be snipped out. Of course, proficiency in speech editing requires practice, for too close cutting will cause the loss of the overhanging terminal vibrations of certain sounds.

The opportunities for comedy are always most tempting. Sequences built up around ad libs and chance remarks, substitute voices cut into recordings of radio programs or commercials, imaginary conversations constructed by intercutting lines picked up at different times — all these make for comedy. Furthermore, they can be embellished with commentary, music and sound effects. The opportunities are a challenge to creative ability, and are limited only by imagination, ingenuity and resourcefulness.

*Fig. 2. Splicing block is located between two film rewinds*



*Fig. 1. Careful layout of equipment in remodeled desk facilitates tape editing*

## The Mechanics of Tape Editing

To facilitate editing, a good working layout is necessary. Basic equipment should include a cutting and splicing board, and a tape playback mechanism so that the tape can be listened to as many times as necessary to locate the exact spot where the cut or splice is to be made. Certain other gadgets, described subsequently, will facilitate the job and make it less laborious.

The editing table shown in Fig. 1 was made from an old kneehole desk. A hole cut in the top allows the recorder<sup>1</sup> to use the space formerly occupied by the upper drawer. The front is left open for the speaker. Ventilation holes are provided in the bottom and sides of the recorder pit. The recorder is protected by rubber cushions on sides and bottom and, since it is not screwed or bolted in place, it can be lifted out whenever desirable.

To the left of the tape recorder are a pair of rewinds for 16-mm. film, such as are familiar to every home movie fan. They are available from retail photographic stores in a variety of styles and prices. They are as essential to editing of tape as they are to the handling of film. With them, tape can be wound back and forth from one reel to another, at a high rate of speed. Also, as the separate cuttings of tape are assembled in their correct sequence, they can be wound onto the final take-up reel.

Splicing with scissors is clumsy and inaccurate, and the splicing block, Fig. 2, is the editor's most important tool. It is fastened in the center of the table between the two film rewinds, which hold the tape assembly reels. Splicing blocks are inexpensive and may be purchased from the larger radio jobbers and from some of the photographic supply houses which carry tape recording equip-

<sup>1</sup>In this case, a Pentron was chosen for its compactness and ease of manipulation.





*Fig. 3. Here is all the equipment necessary for tape editing: two film rewinds, a splicing block, and a tape recorder. Note reel storage rack at the extreme left, and the laundry clips at the right edge to hold the cuttings of tape.*

ment.<sup>2</sup> A time saver is a guide, made from two pieces of angle dural or purchased as part of the block, which directs the razor blade into the angled cutting slot.

A rack for spare reels, a razor blade holder, and a Scotch tape dispenser are located in the handy positions shown in Fig. 3.

For very exact work there should be some provision for accurately spotting or marking the point at which the cut is to be made. The method used will vary with the design of the recorder. If the playback head is exposed, the cut-point is easily located and marked. In the case of the Pentron, and with many other makes which have protective shields over the pole pieces of recording and playback heads, it is not possible to mark the exact spot where the tape is to be cut. Instead, the tape is stopped and a mark made at a known distance from the exact spot. Most often, the mark is made at the edge of the slot in the recording-playback head through which the tape passes.

In this connection it should be brought out that the spot to be cut is located as closely as possible by playing the tape at normal operating speed. The exact location is found by feeding the tape through by hand. When tape is pulled past the playback head slowly, the words on the tape become unintelligible but the moment of silence between two words can be found — and that is the spot where the cut should be made.

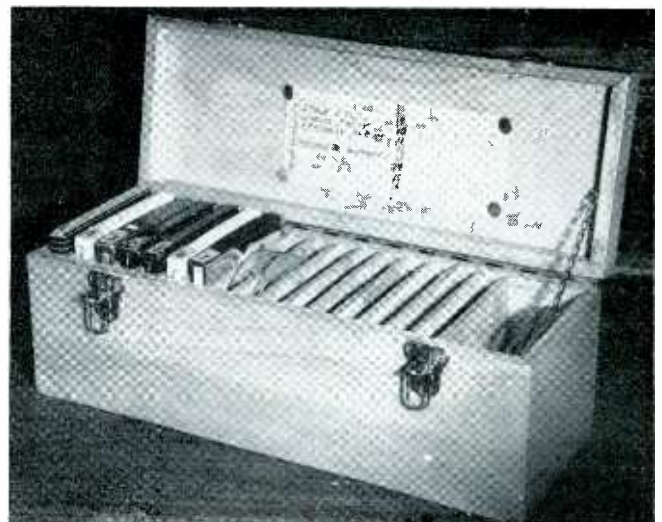
With musical selections the moment of silence may be harder to recognize, because the sound of the instruments is so greatly changed by the slow speed with which the tape is moved. Nevertheless, that fraction of second of silence is the proper place to make a cut. Otherwise, the sound (or word, for that matter) will be chopped off in a very unpleasant and unprofessional fashion.

Therefore, with machines which do not have removable shields, it is desirable to have some means of measur-

ing to, rather than guessing at, the exact cutting spot. For this purpose, a small wooden block should be attached to the left hand side of the splicer at a distance from the cutting slot corresponding to the measurement from the playback head to the left edge of the protective shield. In practice, the tape is jockeyed back and forth in the recorder until the point at which it is to be cut has just passed the playback head. The tape is then marked with grease pencil or paper clip at the left, or takeup side of the shield, and removed to the splicer. With the mark on the marking block, the point to be cut will be exactly on the cutting slot. A faster, if perhaps slightly less accurate method is to grasp it between the thumb and forefinger of the left hand at the edge of the shield, and transfer it to the splicer, holding it against the measuring block, using the fingers as a marker until the tape is locked onto the splicer. As a precaution against cutting too close it is sometimes advisable to cut the tail end of the selected piece of tape a little too long on the first cut, and then to

*Continued on page 81*

*Fig. 4. Easily-built storage case holds 16 to 20 7-in. reels.*



<sup>2</sup>Strange as it may seem, photographic equipment dealers are often well stocked with tape recorders and accessories. This situation has grown out of the interest in recording on the part of amateur motion picture hobbyists who have wanted sound with their films. Now that tape recording is becoming a hobby per se, radio dealers are stocking equipment and supplies for the home enthusiast. — Editor.



*This typical high fidelity amplifier has five controls. This article explains how they work and what they accomplish.*

# Controls

## and the amplifier

BY VICTOR H. POMPER

TO THE astonishment of some, and to the delight of many, high fidelity reproduction of music is growing up. In more ways than one, this is a minor miracle. For one thing, what was formerly a hobby requiring extensive technical knowledge has become popularized and simplified to the point where, as in photography, it can now be said, "You push the button, and the equipment will do the rest." For another thing, high fidelity unites quite dissimilar fields: the art of musical expression and the science of audio reproduction.

In such a combination, it is hardly surprising that the technical should falter occasionally. Indeed, the coming-of-age of high fidelity has seen its share of fad and fancy. In days when high fidelity systems were constructed and listened to chiefly by technical hobbyists, that was hardly serious. In fact, it provided a fascinating subject for dispute — long, loud and sometimes bitter.

But high fidelity is growing up. Technical hobby-steria has little place in the present scheme of things, particularly since the non-technical music lover has dis-

covered high fidelity and made it his own. The spreading desire for more music, and better reproduced music, has fostered the growth of an entire new industry with its own critics, its own authors of books and articles, and HIGH-FIDELITY, its own magazine. No longer is the average hi-fi system a product of the tinkerer's workshop. Rather, it is the result of modern industrial research, production, and merchandising.

Yet, the non-technical still have a difficult time planning hi-fi installations. Where shall they begin? What components shall they buy? Of course, help is available, but whom to believe? Friend? Manufacturer? Dealer? Writer? Critic? Each has his opinion and each and every one is likely to be different. For the layman the problem is to bring some kind of order from this unintentional chaos. The answer, we believe, is the application of a scientific method of thinking — which is merely a method of organizing data to separate fact from fancy, and then of interpreting the facts correctly. For example: First, exactly what is the problem, what



are we trying to do? Second, what have we available with which to accomplish our purpose? Third, with what we have available, how can we best accomplish this aim? Let's see how this applies to high fidelity.

Just what is the purpose of high fidelity anyway? As we see it, the purpose is first, last, and foremost to provide the greatest enjoyment of reproduced music in the home. The hypothesis is that the more closely the reproduced music approximates the original, the greater will be the enjoyment.

Now, what have we available to achieve such performance? The equipment is myriad: we have records, record changers, pickups, recording equipment, tuners, amplifiers and loudspeakers.

The final and most important question is: With these components, how can we best achieve listening enjoyment through music reproduction which approaches live concert quality?

## Fidelity is Not Enough

To approximate an actual concert performance, our electro-mechanical and acoustical system must, first, reproduce the music almost exactly as it is played and without introducing extraneous elements. That is to say, our system should reproduce all the musical notes with enough power and with virtually no hum, distortion, record scratch, or turntable rumble. But, since what we put into our system is the electro-mechanical equivalent of the original music, our reproducing system must be sufficiently versatile to compensate for defects in the processes of pickup, recording, and reproduction. In the case of records, the recording characteristics are not standardized. Surface conditions of these records vary. The loudspeakers used, the acoustical conditions of the listening room, individual preferences, all differ widely. Wide range, undistorted, full-powered music reproduction is not enough. Control is necessary, and compensation for faults is highly desirable.

Fidelity is a function of each and every component in the system.<sup>1</sup> From the standpoint of fidelity alone, the old saw holds that a chain is but as strong as its weakest link. This does not, however, apply with respect to control and compensation for, in the chain of reproduction, from record to human ear, the music signals pass through but one unit which has the inherent flexibility to allow complete control. This unit is the amplifier,<sup>2</sup> with its versatile and readily controllable electrical circuits.

C. G. Burke, noted authority and critic, writing in the *Saturday Review of Literature*, has this to say: "The most critical phonophiles now realize that the aspect of an amplifier which elevates it to superiority over other amplifiers of the same basic high quality is the flexibility of

<sup>1</sup>To avoid confusion, let's define the terms we shall be using in this article. By high fidelity we mean life-like music reproduction. Rightly or wrongly in amplifiers, the word fidelity alone has come to mean wide frequency response, high power, low distortion, and low hum. In this article at least we use compensation to mean only correction of such defects as result from the mechanics of the recording and reproducing processes. By control, we mean manual adjustment to meet various conditions encountered in high fidelity music reproduction such as different recording characteristics, personal preferences, room acoustics, etc.

<sup>2</sup>The term amplifier is used here in its broad sense, to include preamplification required by magnetic pickups. — Editor.

its controls, operating the system to compensate for a multitude of input characteristics. Of course, this should not be necessary, but it is. Thus we must pay very close attention to the equalizing system of an amplifier, the front end, if we wish to play all of our different types of records with approximately equal success."

If this be so, and if the amplifier is the only common unit with inherent control flexibility, we can ask ourselves question No. 1, that is, "What sort of control is necessary?"

For the phonophile, record compensation may well be primary. Records of various manufacture are made with different recording characteristics. That is, the shape of their frequency response curve varies widely.<sup>3</sup> Worse yet, the manufacturer's standard curve may be changed by the recording engineer.

Entirely aside from the recording characteristic, there is the individual human ear, indeed a peculiar and non-scientific device, which differs with each individual. Add individual preferences to this and the problem is still more complicated. But this is only the beginning. The listener does not necessarily enjoy the music as it comes out of the loudspeaker; he enjoys it as it reaches his ear. Its character is altered by the room acoustics. Further, some records have an undue amount of surface noise. This occurs, unfortunately, with LP's as well as with the older shellac records. Once again, we can compensate for such extraneous and disturbing elements.

The best way to discuss control and fidelity is to examine critically the points in question as they apply to amplifiers with which the author is most familiar. These are the H. H. Scott 210-B DYNABURAL amplifier and the Type 214-A REMOTE CONTROL amplifier. From the standpoint of fidelity (which term we are using to cover range, freedom from distortion and hum, high power, and related features) the two amplifiers are identical. The 210-B is intended for the connoisseurs of the finest in custom-built, high fidelity installations. The 214-A is slanted toward the music lover who wants the best in music with perhaps greater simplicity of installation and operation, while maintaining both fidelity and adequate control.

Control features common to both amplifiers are the three-channel, continuously adjustable treble and bass controls, and an automatic loudness control which operates on the highs as well as the lows. The 210-B further features a built-in dynamic noise suppressor and a record distortion filter or range switch. The 214-A contains an extremely versatile record compensator switch which facilitates adjustment for the recording characteristics of almost any record, both LP and standard.

## Tone Controls

The tone controls are the main steering gear in the high fidelity installation. Yet their importance is not always recognized fully, since the real value of good tone controls can be appreciated only after using inadequate ones. Four types of tone controls are in major use today. The

<sup>3</sup>See HIGH-FIDELITY, Vol. 1, No. 3, page 31.

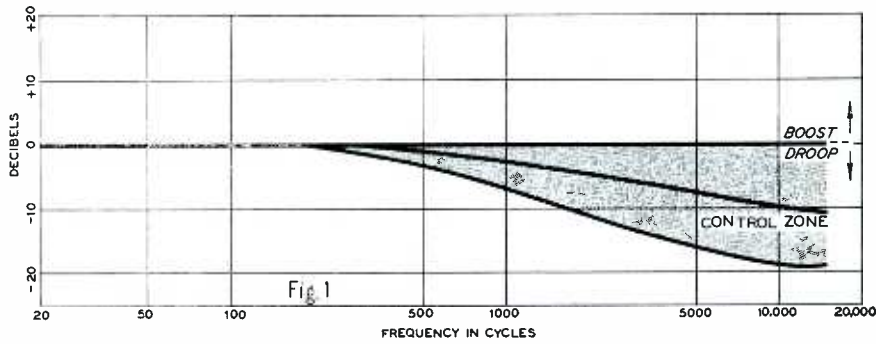


Fig. 1. At the left is a simplified chart showing the effect of the simplest form of tone control network on the frequency response of an amplifier. Such networks can be designed to begin to attenuate at almost any desired point. A combination of these networks are required to control both high and low frequencies.

Fig. 2. The so-called bucking control is more complicated and better than the simple network whose effect is illustrated above. But, as shown in the sketch at the right, unless great care is used to match components, the presumed "flat" position may not be true.

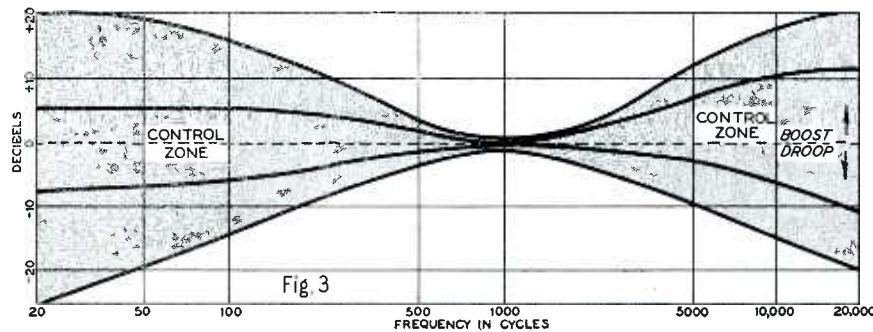
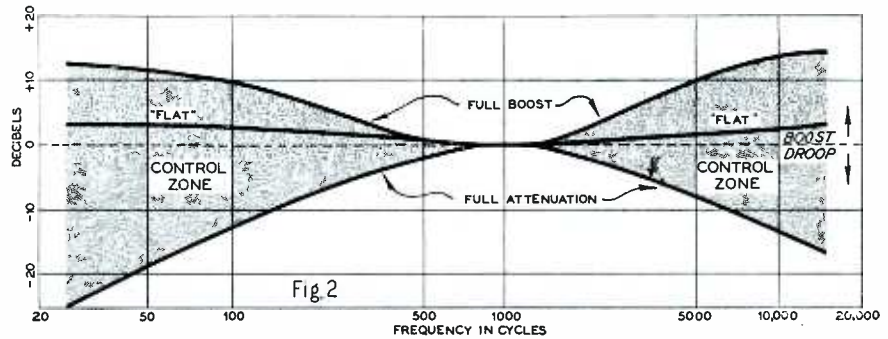


Fig. 3. In the better types of control, separate circuits, requiring additional components, are used so that a positive flat position is assured. In all three types, it is possible to adjust for any amount of boost or droop in the area marked "control zone". Likewise, since the controls are not of the step type, any desired degree of intermediate adjustment can be achieved.

first is a simple arrangement of two inexpensive components: the single RC network. The effect it produces is shown in Fig. 1. In this type of control, a bass boost circuit operates actually as a treble attenuator circuit, and vice versa. This control, though inadequate, is widely used.

Another type of RC network, somewhat better, is the bucking control in which the responses of two circuits are mutually opposed. Exact opposition between two bucking circuits is difficult to obtain, and irregularities may appear in what should be a flat response curve. Typical response obtained with the bucking-type control in its flat position is shown in Fig. 2.

A third type of RC control is the so-called step control in which the control range is wide, the control settings are exact because fixed instead of variable resistors are used, but there are not enough control settings. Only as many degrees of adjustment are possible as there are switch steps on the control.

The fourth type of tone control, as built into the amplifiers under discussion, is relatively expensive to make but offers wide control range with continuous, precise adjustment of both treble and bass. Response curves are shown in Fig. 3. Each tone control consists of three separate circuits: a boost circuit, a flat-response circuit and an attenuation circuit. By means of a mixer control, the responses of these three circuits can be blended smoothly for any desired response.

Incidentally, by means of tone controls such as these, the complexity and number of controls can be reduced. By adjusting tone control settings, it is possible to compensate for the recording characteristics of any record.

In addition, such controls facilitate adjustment for a wide variety of peculiarities in recording characteristics, for variations in acoustics, for individual listening preferences, and for defects in the response of associated equipment such as speakers and pickups.



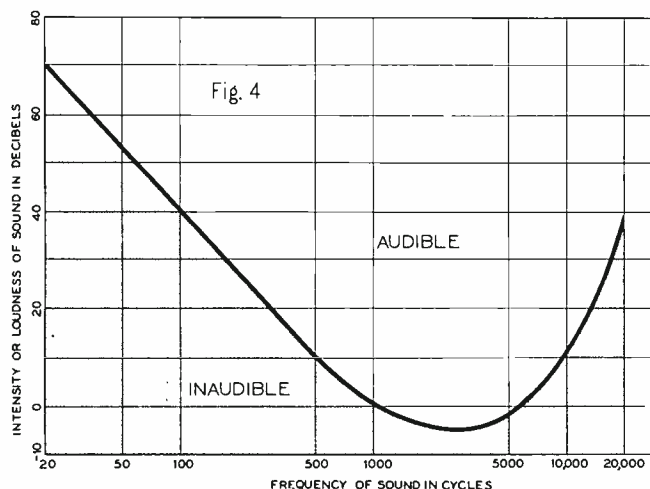
## Automatic Loudness Control

The human ear is indeed a wondrous device. It responds to an enormous range, from the merest whisper to sound millions of times louder. However, the ear is relatively insensitive to treble and bass frequencies at low volume and is increasingly sensitive to the lows and highs as volume level increases. This can be seen by referring to Fig. 4. The heavy black line is the threshold of audibility curve. Any point below the line represents a sound inaudible to the human ear. From the shape of the curve it can be seen that, to be audible, the sound must be louder at the high and low frequencies than at medium frequencies.

Now let us again refer to the purpose of high fidelity, namely enjoyment by the listener. Why do so many high fidelity listeners turn up the sound output of their installations until their long-suffering wives are forced into the kitchen? Possibly for this reason alone, but it is more likely that were they to play their music at lower volumes, the fidelity would appear to be lost through insensitivity of the ears to treble and bass notes. Ergo, they turn up the volume to hear full-range music.

Once again, here is where compensation can add to listening enjoyment. Soft listening levels are desirable in the home. The full sound output of a symphony orchestra could hardly be tolerated in a living room. Now since the ear tends to lose the very high frequencies and the very low frequencies, why not automatically adjust response so that these frequencies are accentuated as the volume control is turned down? The treble and bass can be pushed up above the threshold of audibility curve so as not to be lost to the ear. This is exactly the function performed by automatic loudness control. As the volume

*Fig. 4. One of the most fundamental aspects of human hearing is the phenomenon shown in chart form below. This "threshold of audibility" curve indicates the lowest intensity of sound, at different frequencies, which can be heard by the average person. The scale at the left, in decibels, indicates the intensity as referred to the "softest" sound which can be heard. The sound of a train roaring through a tunnel would have an intensity of about 80 decibels on this scale; the "silence" in an acoustically treated broadcasting studio would average less than 30 decibels.*



is turned down, treble and bass are emphasized proportionately more and more in order that they remain audible at these low levels. While a simple volume control is considerably less expensive to use in an amplifier, increased listening enjoyment is contributed by the provision of an automatic loudness control.

## The Dynamic Noise Suppressor

At an actual concert, certain extraneous distractions exist which have a disturbing effect on the listener. Particularly noticeable are such noises as the rustling of programs and coughing. One distraction not existing at the concert is sustained high frequency hiss, such as caused by the pickup stylus moving in the grooves of the record. Such record scratch and hiss, together with turntable rumble, can be decidedly disturbing, particularly since these obtrusive mechanical sounds are most noticeable and annoying when the music is soft. For many years, record scratch was so annoying as to prevent further extension of the high frequency range in recording and record reproduction. The answer to the problem for a long time was to limit frequency response, and thus cut out this source of annoyance. Of course, all the musical notes in these ranges were also cut off and high fidelity, as we know it today, did not exist.

Two developments changed this situation. First was the development by H. H. Scott of the dynamic noise suppressor. Second was the introduction of long-playing records which, for the most part, are considerably quieter than the old shellac records. The new plastic records are very quiet and the usefulness of a noise suppressor may well be questioned. For many records a noise suppressor is not needed.

Unfortunately, all long playing records are not as noise-free as might be expected. First of all, many brand new pressings contain an appreciable amount of surface noise. Second, many of them seem to be subject to a characteristic hiss, a disturbing high-frequency noise which sounds like escaping steam. Third, the new plastic material is appreciably softer than shellac composition. Consequently, with wear, use, and abuse, records can become quite noisy. Last, but not least, one big advantage of long playing records is their ability to encompass an extended frequency range. This means that more high frequency notes and more low frequency notes are actually recorded on the records. Unfortunately, record scratch and hiss become more pronounced as the reproduction of the higher frequencies is extended, and turntable rumble becomes more pronounced as the reproduction of the lower frequencies is extended. Consequently, what noise there may be on an extended-range recording can be much more annoying than the same amount of noise on a shellac record with its more limited frequency range.

The noise suppressor has always evoked a considerable degree of interest and some slight amazement. Somehow, the fact that electronic circuits can suppress the annoying noises while permitting free passage of the musical notes seems sheer legerdemain. Actually, the electrical circuits utilize the hearing characteristics diagrammed in

Fig. 4. Two typical conditions have been added in Fig. 5: loud music, shown by the top line, and soft music, represented by the bottom line. The black line is the Fletcher-Munson threshold-of-audibility curve.

Suppose now that a soft passage occurs in the music. The upper curve is displaced downward in intensity until it occupies the position of the lower curve. The new curve intersects the threshold of audibility and the ear can now hear only the frequencies lying inside the "audible" area under the soft music curve.

However, although the loudness of the music has dropped, record hiss and turntable rumble continue with the same intensity. But most of the scratch exists above 5,000 cycles, and most of the turntable rumble exists below 100 cycles. If, when the music is soft, the frequency response is limited to that range which can be heard, that is the "audible" section of the soft music curve, most of the high frequency hiss and most of the low frequency rumble will be cut off, without losing any musical notes to which the ear responds.

On the other hand, at the high loudness levels, the music itself is considerably louder than the noise and therefore drowns out the noise.

What the noise suppressor does is to vary the frequency response range of the amplifier so that it corresponds closely to that actually audible to the human ear. The noise suppressor opens the range when the music is loud and restricts it when the music is soft.

At first glance, the noise suppressor and the loudness control might seem to be working against each other. This is not the case, because each operates independently of the other. The loudness control establishes the overall volume level throughout the frequency range of the amplifier, and it is static. That is, the degree of bass and treble compensation it provides is fixed for any given setting.

Contrariwise, the noise suppressor is dynamic (hence its name) and the frequency range which is passed by its so-called gate circuits varies with the dynamics of the music.

## Record Distortion Filter

The record distortion filter, or range switch, serves another useful function in promoting listener enjoyment. Records may contain appreciable distortion in the extreme high frequency range. In some cases, this distortion exists in ranges concurrent with the higher musical notes. In other cases, audible harmonic distortion is produced at frequencies actually higher than that of the recorded music. The range switch, or record distortion filter, is a means for limiting the amplifier response at the high-frequency end.

By means of the range switch on the 210-B, the overall system response can be so adjusted that distortion and hash above the actual range of recorded music can be limited sharply. Some indication of its utility can be gained by noting the recommendation that the distortion filter be set for wide-range response only with the very newest and best recordings. For average use, the most enjoyable performance can be achieved by an intermedi-

ate setting at which the upper frequency response is limited slightly.

## The Remote Control

The 210-B amplifier is an extremely compact, single chassis unit meant for mounting on a book shelf or in some similar convenient position. In some cases, a two-chassis amplifier such as the 214-A is helpful. With such

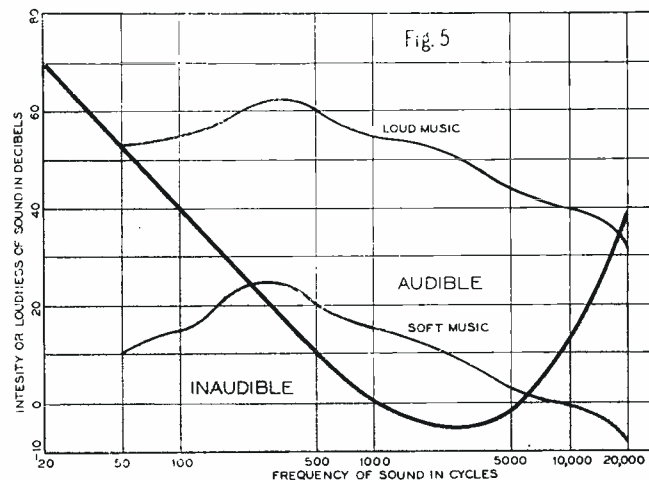


Fig. 5. This is the same chart, basically, as in Fig. 4, but superimposed on it are two lines representing the intensity of average symphonic music at various frequencies. It can be said that the "soft music" line represents the sound which comes through the loudspeaker when the volume control on the amplifier is turned down to a low level. When the volume control is turned up, the range of frequencies falling in the "audible" section of the chart expands, as shown by the upper line.

an amplifier, the heavy heat-generating power amplifier can be mounted entirely out of sight in any convenient (but well ventilated) place. The actual operation and control of the system is accomplished by the remote control unit, or front end.

The 214-A is designed for the music lover who wishes finest quality music reproduction but is willing to sacrifice a built-in dynamic noise suppressor and a record distortion filter for slightly greater ease of installation and operation, and who wants a record compensator and selector switch. This switch permits instant change from phono, tuner, TV or other input. In addition, compensation for virtually any recording characteristic is readily possible. The record compensation portion includes five separate equalization positions for 78 rpm. records and also three equalization positions for long playing records. Although recording characteristics may vary from the manufacturer's published characteristic curves for a number of reasons, the record compensator switch gives a quick and simple means for rough equalization on both bass turnover and treble roll-off. Fine adjustments, if desired, can be made by means of the tone controls included on the 214-A.



## Frequency Response

Much has been made in amplifier specifications of frequency response ranges far exceeding the limits of human hearing. It would appear that the greater the frequency response, the greater the inherent quality of the amplifier, even though most humans cannot hear over 18,000 cycles. In the author's opinion, excessive frequency response may be a disadvantage from the listening standpoint. If the frequency range extends well above the upper limit of hearing, the system is subject to ultrasonic oscillation, which occurs above the audible range. However, through intermodulation effects, it may introduce serious distortion and noise in the audible region. To avoid this form of distortion, high frequency response should be limited to the audible range or, as pointed out earlier, to even less than the audible range.

Excessive low frequency response can be equally serious. With such response, eccentricity in the turntable or in the location of the record hole can generate appreciable sub-audible signals. These are similar to turntable rumble, or wow, but are below the range of hearing. Such signals can overload the amplifier, with resulting distortion. Further, the existence of appreciable sub-audible signals can raise the overall signal level in the amplifier to a point where sudden transients or bursts of loud sound will again overload or block the amplifier.

## Distortion

Naturally enough, the reproduced music should be as close as possible to the music actually played. Unless this be so, the music is distorted. The most popular method of rating distortion is by so-called harmonic distortion. Harmonic distortion is akin to the natural music itself, which consists of fundamental notes and their harmonics. By addition of extra harmonics, generated within the reproducing system, the music character is changed slightly but the effect is barely noticeable below certain relatively high levels of distortion.

In terms of the effect of distortion on listening enjoyment, the important type of distortion to consider is what is known as first-order difference-tone intermodulation distortion. Although largely ignored by many as an indication of amplifier performance, this type of distortion measurement is most closely akin to the human ear in that it measures the distortion found to be most annoying. This distortion causes growling, discordant noises, and high frequency hash due to overloading.

## Reduction of AC Hum

In any alternating current equipment, magnetic and electrostatic fields exist which generate 60-cycle alternating current hum which is decidedly undesirable and annoying. Complete elimination of such hum is very difficult indeed. In high fidelity systems, hum pickup is most serious in the preamplifier circuits where the very low level of the signal is not much above faint hum voltages. For this reason, direct current in the filaments of the low-

level stages in the amplifier is a decided advantage. By such means, and by very careful design and development, hum pickup in the amplifier can be reduced far below the level of audibility.

## Power Output

For normal listening levels, approximately two watts of power output is more than ample. Why then are higher power outputs considered essential? The answer is that, in symphonic music particularly, sudden bursts of peak power occur, such as the clash of cymbals, a sudden roll of drums, and similar sounds. If the installation has insufficient power to meet these conditions, the equipment will overload and serious distortion will result during sudden, loud, high-power peaks.

Since two watts or less represent the average home listening level, 20 watts power output from the amplifier is necessary for really good results. Less than 20 watts is inadequate because distortion is generated each time the amplifier overloads on the high power peaks. However, since two watts output is about the maximum average level for home use, more than twenty watts power handling capacity in the amplifier is unnecessary unless the amplifier is to be used in large halls or at very high volume levels.

Fletcher has shown that the maximum sound levels over the frequency range of symphonic music differ considerably. This maximum power has a peak at approximately 200 to 300 cycles, and from this peak it slopes off irregularly toward both the low and high frequency portions of the frequency spectrum. Therefore, an amplifier with sufficient power output to handle peaks between 200 and 300 cycles will have more than adequate power available at other frequencies.

## Control and Compensation

It has been indicated that for maximum enjoyment of reproduced music good quality of reproduction is necessary, control of this reproduction is essential, and compensation for defects in the reproducing process is highly desirable. The control and compensation aspects of high fidelity have long been a poor relation to the sheer mechanics of reproducing sound. Yet, actually, lacking adequate control and compensation features, much of the utility of high fidelity reproduction is lost. An analogy may be a magnificent motor car, sleek, powerful, beautiful; yet unless it has steering and gear shifting mechanisms, its usefulness is decidedly limited. Similarly, unless the high fidelity installation can be adequately controlled and unless its springs and shock absorbers (compensation) are adequate, the overall results may be poor indeed.

In the system consisting of records, turntable, pickup, tape machine, tuner, amplifier, and loudspeakers, the amplifier is the one and only unit in the system in which adequate control and compensation can be achieved. The amplifier is the control center, the brain in the high fidelity system. Without control and compensation features, the amplifier is merely a passive link in the audio chain.

# what about Wire recording?

By C. B. DALE

**D**URING the past four years, the magnetic recorder has become a familiar and valuable instrument in music, radio, education and many other fields. In fact, in this short time it has become so vital in so many ways that it is one of the most important of the postwar adaptations of a wartime development.

Many heated debates have been conducted on whether a wire or a tape recorder is the better magnetic recorder, but all such theoretical discussions seem to ignore one important factor. The specific use to which the instrument is to be put will determine which is the better recorder in each individual case.

Each of the two types of magnetic recorders has its basic advantages. The outstanding advantage of the wire recorder is the durability of the wire. The stainless steel wire will last indefinitely despite repeated erasures. It can be played over hundreds of thousands of times without any loss in the quality of reproduction. The wire will not rust or burn and will withstand extremes of heat, cold and humidity. Also, wire is a more compact medium, both in space required for the recorder itself and in storage space for a library of recordings.

While tape can be played over thousands of times, it sometimes frays along the edges and then is easily torn. Tape is also susceptible to changes in heat and humidity and to chemical vapors in the air. In high temperatures, the layers of tape will sometimes stick to each other. Fire is a hazard. Careless handling of a cigarette in the vicinity of a spool of tape could mean the end of the recording.

For the individual interested in making permanent records, whether he be a businessman keeping business records, an attorney keeping case records, or a parent wanting to keep a recording of his child's recitation of "The Charge of the Light Brigade", wire is preferable.

Such long-term durability also makes wire preferable to any other type for use on dictation machines.

The use of tape recorders by broadcasting stations who must have the highest quality of reproduction in their recordings is strong evidence that the tape recorder offers the best medium of magnetic recording where the quality of reproduction is an extremely important factor in the selection of the machine to be used. Furthermore, experts can edit tape down to an individual syllable.

The tape recorder provides low background hiss and higher frequency response than the wire recorder. Full advantage can be taken of such contributions when the machine is being used in a professional fashion with the best microphone technique and ideal conditions in the recording chamber.

*The two articles in previous issues of HIGH-FIDELITY on tape recording have produced a number of inquiries along the lines of, "What about wire recording? What are its advantages and disadvantages? When should it be used?" Here is the answer — from the man who is Vice-President in charge of Research for Webster-Chicago. This company has manufactured wire recorders for many years and, for the past 12 months, tape recorders. Hence the author is in a particularly good position to compare the advantages and disadvantages of the two recording media.*

Broadcasting stations and musicians, therefore, tend to prefer the tape recorder. For the average person interested only in recording music from the radio, which can later be played through a radio or phonograph speaker, or in recording voices, wire or tape will serve equally well.

Ease of editing has often been advanced as one of the most significant advantages of the tape recorder. Where a truly professional job of editing is required, it is true that the tape recorder is superior. Tape can be spliced to eliminate as little as one syllable from the recorded ma-



terial. But for the average person interested in a recorder for non-professional purposes, it is easier to edit wire by simply cutting and tying the wire. Splicing tape involves exercising care that the gummy matter from the splicing tape does not come in contact with the recording head and in preventing the spliced section from sticking to another layer of the tape.

For the person interested in recording material where one syllable or one word may have to be carefully edited out, the tape recorder is the best choice. For the amateur magnetic recording enthusiast, the business man recording sales conferences, the minister recording his sermon or the lecturer using the recorder to practice delivery of his lecture, the wire recorder will serve as well as the tape recorder, since very little careful editing is involved.

Where the spool of magnetized material must be reloaded quickly and frequently, the wire recorder has the advantage.

Because of the greater ease of handling of the wire, a wire recorder can be reloaded in a few seconds. This is a distinct advantage in the recording of very long conferences, the taking of stock inventories and, certainly, for dictation machine purposes. Because of the greater care required in the handling of tape, the operation is more complex.

From the standpoint of the salesman out on the road, recording his sales reports for mailing back to the office, the wire recorder is the more practical since the wire spools are easier and cheaper to handle for mailing.

From the price standpoint, there is little difference as far as the tape<sup>1</sup> and wire machines made by Webster-Chicago are concerned. The tape recorder is only slightly more expensive. Where an extremely precise recording job is to be done, there is, of course, an appreciable difference since tape recorders for permanent installation sell for from \$500 to \$3,000.

Personally, I use both types of machines. I use the wire recorder to record illustrated travelogues, for sending messages to my children and friends, for recording speeches, for taking music and speeches off the radio and for the general "horseplay" that has made magnetic recorders so popular for parties. On several occasions, I have furnished many hours of musical entertainment for dances and for weddings from recordings made on both wire and tape.

It is the wire recorder I take with me on vacation trips where recording conditions are rarely ideal. My car is equipped with a 110-volt, 60-cycle generator with a hand plug-in. Plugging my wire recorder into this, I have held interviews on deserts and in mountain passes with Indians, cowboys and forest rangers, when the closest regular supply of electric current was miles away.

These are the things that make owning a magnetic recorder a real pleasure, but the type of magnetic recorder used must always be dictated by the most important use the prospective owner has in mind when he purchases it. And whether he gets a tape or a wire recorder, he is certain to find scores of uses for it that he never thought about at the time he purchased it.

<sup>1</sup>Specifications for the Webster-Chicago tape recorder were given in HIGH-FIDELITY Magazine, Vol. 1, No. 2.

## How to Lose Friends

*Friends shun you? Neighbors complain to police? Have courage! You are not alone! This sad story will bring many a "Me, too" and "Don't I know!"*

Ten reasons why I always wait until I am all alone in my living room before I play my record player

OR

*Sometimes it's very hard to please everyone and most of the time it's impossible to please even anyone*

*As told (too often) to WILLIAM J. MURDOCH*

1. "Swell tone, marvelous. Brings out those piccolos beautifully. Oh, trombones, eh?"

2. "That's right, put on some music, Bill. I love music. Ah, that's beautiful. Say, Sam, I meant to tell you on the way over about the doggonedest thing that happened this afternoon . . ."

3. "Is *that* Beethoven's Fifth? Why, there's nothing to it. I only took cornet lessons for three years, but I bet I could play *that!*"

4. "Oh, *now* I recognize it. That's Zlobsky's *Concerto in F Sharp Minor*. I've got it, but mine's done by Howgnasser and the Philsymphonic. You'll have to come over if you want to hear something that's *really* terrific."

5. "You call *that* music? (a) Fa' cryin' out loud, play something that ain't dead.

(b) It's all right, I guess, but you never hear lovely songs like *Beautiful Ohio* and *Dear Old Girl* any more.

(c) Isn't it strange that people would write this sort of stuff when they could have made real money like they do nowadays with tunes like *Abba-Dabba Honeymoon* and *Come On-A My House?*"

6. "What kind of needle you using? Oh? Well, it sounds good, of course, but I just put a new acro-stomatic with calibrated crystal in my system, and honestly, it's got anything I ever heard at any price backed off the map."

7. "Oh, no, don't get me wrong. We all can't like the same things, of course. But you take a hobby like stamp-collecting. Now there's a good way to invest your money and, besides, you don't have to make a lot of noise to enjoy it."

8. "I don't care if it is Toscanini, he's playing it too fast. I heard it played in person once down at the high school music festival, and I know the kids played it slower."

9. "Records are just like books these days, aren't they? They'll turn out just anything if they think it'll sell."

10. "Hey look, folks! He's loading up the works with a whole opera. Are we going to let that swell background music go to waste? Come on, let's get out those card tables!"

# Music... in the home

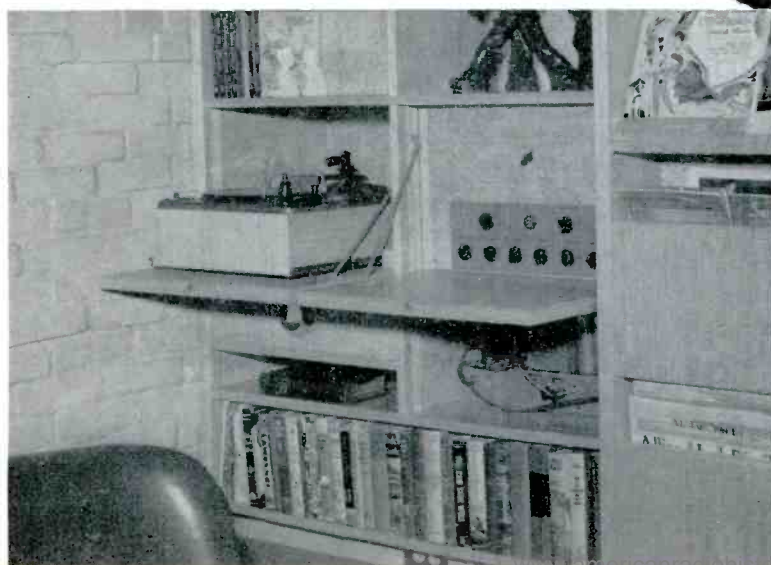
From HIGH-FIDELITY reader Allen Rollie of Gallup, New Mexico, come these photographs of his home music listening system. We are always glad to have such photographs and will publish as many as possible because they are helpful to other readers who are planning music systems. Here is what Mr. Rollie has to say about his high fidelity installation:

"I am using a Goodell ATB-3 amplifier and a Goodell PRA-1 preamplifier. My record changer is a Webster-Chicago with a GE variable reluctance head. The speaker is a 604-B Altec-Lansing in a bass reflex cabinet of approximately 10 cubic feet, constructed according to Altec-Lansing specifications. I do not have a television tuner, inasmuch as we do not yet have television in this part of the country.

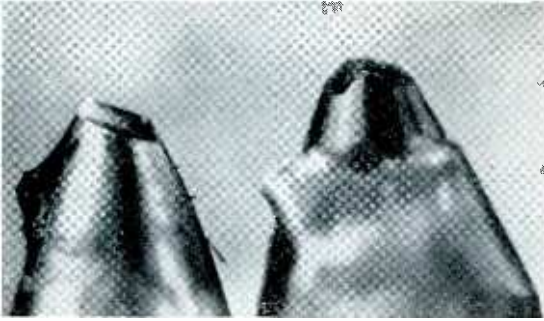


"The installation is finished in combed plywood, in a design which makes records readily accessible and at the same time creates a certain amount of color in the room.

"I have only been at this for about a year, but it has certainly become an absorbing hobby."







# Danger!

## Worn Needles

*"Millions of records are ruined each year through the use of worn styli," says the author. He not only explains why, but he tells what to do, and how you can do it yourself.*

By GERALD SHIRLEY

**A**MONG the record-buying public there exists a considerable and widespread lack of knowledge — even misinformation — about record wear, needle wear, and their relation to each other. As a result, millions of records are ruined each year through the use of worn and inferior styli. This may not be depressing news to those who sell records, but certainly any music lover who buys records should be interested in doing everything possible to ensure the safety and longevity of his collection.

There are several factors which influence record and needle wear. One is the weight of the pickup itself. Another is the ease with which the pickup arm follows the record grooves and moves from side to side. Yet another is a whole group of causes which can be lumped under the heading of "proper care". These would include such matters as proper storage, removal from and replacement in envelopes, handling, cleanliness, and static elimination.

Finally, there is the stylus itself. It is this last factor which will be discussed here, because worn styli are a sometimes unsuspected but always predominant cause of record wear. And, since the days are long since gone when needles were held in place simply by a set screw

which could be tightened or loosened with thumb and forefinger, correct procedures for removing cartridges in popular use today, and for replacing the styli, will be explained and illustrated in the second part of this article beginning on page 31.

### Even New Needles Cause Wear

When a needle is brand new, and if it is properly shaped and highly polished, as shown in Fig. 1, it causes very little, if any, wear. The amount of wear caused by such a needle depends primarily on one or more of the factors mentioned in the opening paragraphs.

Pressure is one of the first things that comes to mind. Time was when needle pressure was nearly a full pound. But particularly since the advent of LP's, increased attention has been paid to the importance of reduced weight. The standard pressure for LP cartridges today is 6 to 8 grams, and a recently-introduced pickup operates with only 1 gram pressure — scarcely 1/500th of a pound!

The degree of compliance of the moving parts is also of importance. The easier it is for the undulating record

groove to swing the needle from side to side, the lower the pressure developed between groove walls and needle tip. Also, the greater the compliance, the less the needle pressure required to ensure proper tracking.

Another important factor is the degree of polish on the tip. Obviously, the higher the polish, the less friction there will be between tip and groove and, the less the friction, the less wear.

With any given substance, there is always a limit to the degree of polish which can be applied to its surface. Hard, dense materials can be given a higher polish than softer, more porous materials. A polished sapphire tip seen under the microscope, Fig. 2, is much smoother than a polished metal or osmium tip, Fig. 3, which often looks rough and porous by comparison. Diamond is the hardest material in the world — much harder and denser than sapphire — and it can, therefore, be given a higher polish than sapphire. It is worth noting, too, that practically all sapphire needles sold today are made from synthetic sapphires. Even though synthetic sapphire can be given a good polish, its usefulness is short-lived, since the areas on the sides of the tip where it contacts the groove walls wear away quickly.

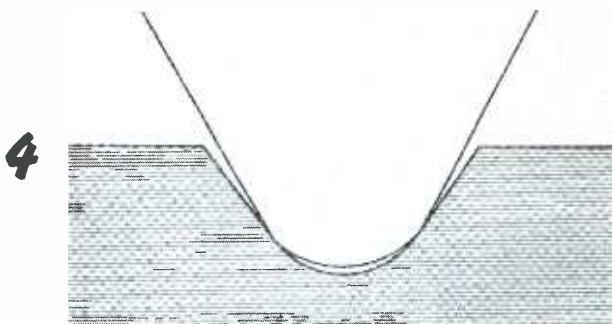
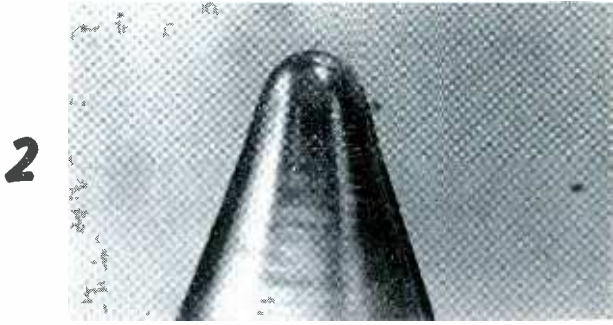
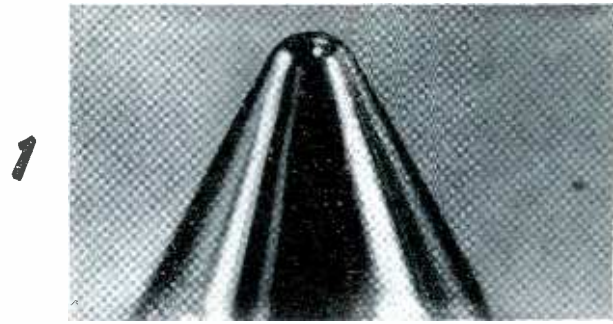
While metal needles can be tolerated, to a degree, on 78's, most authorities now agree that for LP's they are completely unsuitable except in applications where record life is of no importance. For this reason, our discussion will be confined to sapphires and diamonds.

### Why Needles Wear Out

The tip of a phonograph needle works against almost overwhelming odds. The entire weight of the cartridge and tone arm, and the sideward pressures exerted by the record grooves, are all concentrated on microscopically tiny spots on each side of the tip where it comes into contact with the groove walls. Fig. 4 shows this relationship in cross-section. These pressures can and sometimes do exceed several tons per square inch! Any equally small section of the groove walls is also subject to the same pressures, but only for the fraction of a second it takes for the tip to go past it. The two spots on the tip, however, are subjected to these pressures for as long as the phonograph is in use. Some idea of the enormous distance a tip travels can be gained by considering that the groove on one side of a 12-in. LP has a total length of about half a mile!

It is not surprising, then, that the two spots of contact on the sides of the tip begin to wear down very quickly and to flatten out, despite the fact that sapphire is much harder than the vinylite used for most LP's. Fig. 5 shows medium-size flats worn on the tip of a sapphire needle which had been used for a relatively short time. The speed with which flats develop on a needle tip depends largely on the hardness of the material used for the tip. It is these flats that do practically all the damage to records. Experience has shown that a record can sometimes be ruined by just one playing with a badly worn needle.

It may seem that stylus wear should imply a better fit between tip and grooves. Actually, as flats develop,





their outline, or what might be described as their intersection with the still-round portion of the tip, consists of edges which grow progressively sharper as the flats increase in size. If a needle is used long enough, the two flats eventually meet and the tip takes on a striking resemblance to a chisel. Fig. 6 shows two needles that have reached this stage. In this condition, a needle not only looks like a chisel but also acts like one. As it is swung from side to side by the groove, the sharp edges scrape and cut into the groove walls, leaving a path of destruction behind them.

The amount of damage done by a worn needle varies in direct proportion to the size of the flats on the tip. In other words, the worse the needle is worn, the more wear and damage it will do. Some authorities maintain that a needle should be replaced at the first sign of a flat, while others believe that such a needle can still be safely used for a little while longer. Unfortunately, there is as yet no universally accepted definition of "the first sign of a flat". In terms of visual examination, flats which are just visible under a 60-power microscope will not be detected under a hand magnifying glass. As for aural signs, it can be stated as a fairly certain fact that by the time a needle no longer "sounds right" it has been damaging records for some time. It is definitely unsafe to rely on one's memory as to how a needle sounded when new, because there is an almost continuous falling-off of reproduction quality which is so gradual as to be imperceptible. Human senses being what they are, very slow changes escape notice. In fact, the ear seems to adjust itself over a long period until finally, when the difference is great enough, a realization dawns that it "doesn't sound as good as it used to". By this time it's too late.

## The Ideal Needle

The ideal needle would be one that would always retain its original round, smooth shape and never develop flats. The needle that comes closest to this is the professional-quality diamond. Under average home conditions, a minimum of 1,000 hours of playing time can be expected before replacement is necessary. When and if pickups operating at one gram pressure become generally available, it will probably be impossible to wear out a diamond in a lifetime of listening.

Where phonograph needles are concerned, the important hardness property is resistance to abrasive wear. In this respect diamond outlasts sapphire by a ratio of 90 to 1. This figure, determined in physics laboratories many years ago, finds confirmation in many tests which have been made on the relative life expectancies of diamond and sapphire phonograph needles.

In one series of tests, the useful lives of eight sapphires were measured. It was found that they varied between 3 and 15 hours. A general average for a sapphire would be 10 hours. If this is contrasted with the 1,000 hour average life of a diamond used under the same conditions, the ratio of 90 to 1 is more than confirmed.

The development of flats on a needle tip is the end-result of an abrasive process wherein material from the

needle tip is ground off by, and deposited in, the record groove. This abrasive dust becomes imbedded in the groove walls where it not only raises the level of audible surface noise, but also increases the wear on the needle. With sapphires, this vicious circle is highly significant. With a diamond, however, there is so little material ground off that the circle never really has a chance to get started.

The only disadvantage of the diamond needle is its relatively high initial cost. This is only a temporary disadvantage since, in the long run, it is the cheapest needle one can use. There is no sure way of predicting in advance whether any given sapphire needle will last 3 hours or 15 hours. Hence, the only really safe course to follow is to be pessimistic and to put in a new one every 3 hours. Although the original investment required for a high-quality diamond needle may seem high—between \$15 and \$25 dollars—the cost of the sapphire needles required during the same 1,000 hours would be much greater. Most sapphire needles cost at least \$1.50 each. If changed even at 10-hour intervals, one hundred needles would be required: a cost of \$150. If they are changed oftener, or if a better grade of sapphire needle is used, the cost will be even higher.

Many persons who own inexpensive LP players or attachments have the mistaken idea that because the diamond needle may cost more than the player or attachment itself, it doesn't pay to get a diamond. The diamond offers the same advantages whether it is used in a \$10 LP attachment or in the most expensive professional equipment. The cost of the phonograph is quite irrelevant. The cost of a record collection is what counts. The important thing is to protect that investment.

One point which puzzles many people is the variation in prices between different diamond needles. As a recently published book<sup>1</sup> puts it, "It should be pointed out that only high-grade styli should be purchased, as there are several diamond styli available which are not precisely lapped to a perfect polish". Actually there are more differences than just that of polish. Suffice it to say that, obviously, it costs more to make a top-quality diamond needle than one which has only a rough polish.

Another question sometimes asked is, "Is a needle in which the tip only is replaced, as good as a completely new needle?" The answer depends on two factors: 1) whether the diamond tip used in the re-tipping is as good as the tip used in the new needle, and 2) whether it is properly and accurately mounted. It is quite possible for a re-tipped needle to be superior to a new needle—and vice versa. It depends on who does the re-tipping, and who is making the new needle. Some companies make new needles only, some do nothing but re-tipping, and there is one company that does both. Though one might expect otherwise, there is normally no significant difference in the price between a new needle and a re-tipping job. The reason is that whatever saving is effected by using the original metal shank is offset by the cost of the extra labor required to remove the worn sapphire tip from it.

<sup>1</sup>"Make Music Live" by Greene, Radcliffe and Scharff. Medill McBride Co. 1951.

# Here's How —

## To Replace Styli and Cartridges:

**I**N GENERAL, diamond stylus replacements are available for any cartridge using replaceable sapphire-tipped needles, or for which sapphire-tipped replacements are made, even though the cartridge may have originally come equipped with replaceable metal-tipped needles. The diamonds may be new needles or, as suggested above, needles can be re-tipped.

When buying a diamond needle in a store or ordering by mail, it is advisable to take along or send a used, sample needle of the make and model for which a diamond replacement is desired. There is such an enormous variety of needle shapes and sizes in use today, that it is not enough to say that one has a Webster changer, or a Columbia LP attachment, or an RCA radio-phonograph model so-and-so. In every case, time is saved and confusion avoided by having an actual needle at hand for examination and comparison. However, before needles can be sent away for replacement, they have to be removed. The suggestions which follow should be helpful.

Some cartridges use tandem needles. These have a single shank with two separate tips. Replacements having two diamond tips, or with a diamond for LP's and a sapphire for 78's, are available for certain cartridges. Also, they can be re-tipped.

Two crystal cartridges using tandem needles for which diamond replacements are not available are the Webster F-14 series (turnover-type) and the Magnavox. In the case of the Webster, a new cartridge such as the Astatic LQD, which uses two separate needles, can be substituted easily. On the Magnavox, an entire new tone arm and cartridge are required. These are available with crystal turnover cartridges. Also, there are conversion kits consisting of a new arm using magnetic cartridges such as the GE or Pickering. Though this costs more than a simple crystal replacement, greatly improved fidelity is obtained.

Magnetic cartridges with built-in styli such as Pickering and Fairchild should always be sent direct to the manufacturer for stylus replacement.

It is not worthwhile to send in crystal cartridges with built-in styli for re-tipping because the life of the crystal itself is uncertain. In all likelihood, the diamond would outlast the cartridge. Some cartridges look as though they have built-in styli, whereas they are actually removable. An example of this is the cartridge used in certain Philco LP attachments. Whenever there is a doubt about a particular cartridge, it is wise to inquire of the service agency handling that make of set, or to send the cartridge for examination to one of the manufacturers who does re-tipping.

### Needle Removal Procedures

On most manual phonographs, the tone arm can be lifted high enough to permit access to the cartridge and needle. If a transcription arm is used, there is usually provision for removing the cartridge easily.

Record changers with plug-in heads, such as the Garrard and Webster "27" series, present no problem. Most VM's permit raising the arm up straight. On many other makes, however, the arm cannot be lifted high enough to see under it. In such cases, it is necessary to use a small mirror held under the front of the arm to permit examination of the cartridge and needle.

It may appear that the arm on the widely-used Webster-Chicago changer cannot be raised. Actually, it is hinged and can be raised if the hinge lock under the arm is pressed open. The Webster-Chicago is sold under its own name and also used by a great many manufacturers of name-brand radio-phonograph combinations. This hinging feature is found in practically all the two and three-speed models, equipped with crystal cartridges, which Webster-Chicago has made and is still making. Fig. 7 shows an underneath view of the arm in its normal (locked) position, and with the thumb and forefinger in the correct position for releasing the hinge lock. The forefinger is pressed against the little metal lip which acts as a catch for the hinge. If in doubt as to whether the changer is a Webster of this

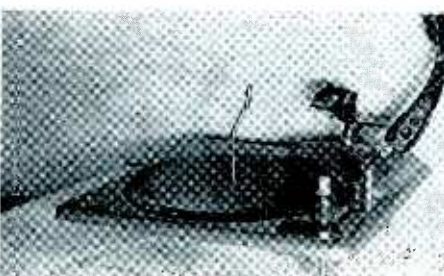
type, simply hold a mirror under the arm to see if it looks like Fig. 7. Fig. 8 shows the arm raised up. Fig. 9 shows the proper position of the thumb and forefinger to squeeze the hinge lock shut.

**GENERAL ELECTRIC:** Among audiophiles, one of the most widely used cartridges is the GE. There are two basic types: the single-stylus models and the triple-play models. With a single-stylus model, the easiest way to remove the needle is to push it out from the top of the cartridge with something like a straightened-out paper clip, as shown in Fig. 10. If the cartridge is mounted in a plug-in head with the terminals soldered, it is possible to get the stylus out without having to take the cartridge out of the head, which would require unsoldering. With two small blades, such as the tips of two jeweller's screwdrivers, placed against the sides of the round hub of the needle, and angled slightly downward so as to work them under the shoulder of the hub, the needle can be pried up by degrees until it is far enough out so that it can be grasped with the fingers. After the new needle has been pushed into place, the tip should be inspected to see that it is fairly well centered between the two small pole pieces. If it is not, adjustment of the position can be made using a pair of tweezers as shown in Fig. 11.

To remove and re-install the triple-play stylus assembly, it is usually necessary to remove the cartridge from the tone arm or plug-in head, even if it means an unsoldering and resoldering operation. Before removing the cartridge, the red knob on top, which is used to turn the stylus assembly around, must be pulled off. Near the top of the needle shaft is a C washer which acts as a retainer for a small spring. The spring should be compressed slightly so as to draw it away from the C washer and allow the latter to be slipped off the shaft. The spring, and the thin washer that goes between the spring and the top of the cartridge, will then slide off. Then the needle assembly can be removed from the cartridge. Installing the new or re-tipped assembly in the cartridge is just the reverse of the removal process. Getting and holding the spring in a compressed state preparatory to slipping the C washer on the shaft is somewhat tricky and sometimes the spring escapes and goes a-flying. For this reason it is wise to perform the operation where the spring will be easy to find! Before the control knob is pushed back on, the offset key in the knob must be lined up with the offset slot in the needle shaft. While pushing the knob on, the needle should be supported from below with one finger at the exact center. Lastly, the centering of both tips

Fig. 7. Webster-Chicago hinge mechanism.

Fig. 8. W-C arm raised so cartridge can be removed. Fig. 9. How to hold hinge to lock shut.





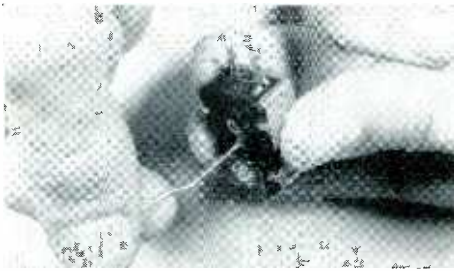


Fig. 10. Removing G-E stylus from cartridge.

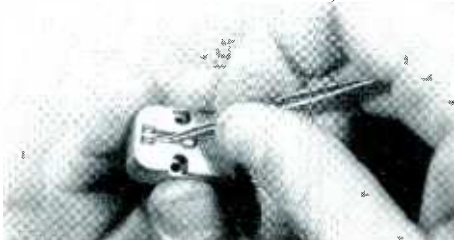


Fig. 11. Adjusting alignment of G-E stylus.



Fig. 12. Prying out Q-33 with a knife.



Fig. 13. Knurled-nut fastens Shure needles.



Fig. 14. A tube holds stylus for E-V pickup.

Fig. 15. A set screw holds W-C tandem styli.



between the pole pieces must be checked and, if necessary, adjustments made as described above for the single-tip models.

**Q AND Q-33 NEEDLES:** The Q-33 is probably the most widely used type for LP-type crystal cartridges. It is used on all the Columbia players except the very first models, in the turnover cartridges manufactured by Astatic, and for many changers and three-speed manual players. The Q needle is for 78's. The only difference between it and the Q-33 is in the tip radius. To remove a Q-type needle, a knife edge or the tip of a small screwdriver is slipped under the small projecting rear end or heel of the needle to pry it up and out, as shown in Fig. 12. To install a new or re-tipped needle, the key on the needle shank is lined up with the corresponding slot in the cartridge opening and the needle pushed into place. With any needle which is installed by pushing it into its cartridge, pressure should never be applied to the little arm or arms which carry the tips, but only to the shank itself, *i.e.*, the part that goes into the cartridges.

**"A" NEEDLES:** These are very similar to Q-type needles, but do not have a key on the shaft. Instead, the shaft has a flat side ground on it, and the opening in the cartridge is shaped correspondingly. "A" needles are used in Astatic AC single-stylus cartridges and ACD turnover cartridges. Removal and installation is the same as for Q needles.

**SHURE NEEDLES:** These can be recognized not only by their characteristic shape but also by the way they are held in place by a small, knurled thumb nut. Both needle and thumb nut can be seen clearly in Fig. 13. The danger of doing damage to the cartridge by applying excessive pressure when loosening or tightening the thumb nut can be avoided by holding the front of the needle while turning the thumb nut. Incidentally, it is not necessary to remove the nut; just loosening it slightly will permit withdrawal of the worn needle and insertion of the new one. This type is sometimes referred to as "Muted Stylus".

**ELECTRO-VOICE NEEDLES:** These are also easily recognized because they are the only kind installed by sliding the shank into a tube which is part of the cartridge. Fig. 14 shows an E-V cartridge minus the needle. The tube and its opening are visible. The shank tapers at the end which goes into the tube, and must be pushed in firmly so that it will be held securely. Excessive pressure, however, should not be used. To remove the needle, tweezers or small needlenose pliers

should be used to get a firm grip on it behind the tip. Then it can be pulled forward. If it has a metal tip, it is permissible to grasp it with the fingers from the front and pull forward.

**RCA (45 RPM) NEEDLES:** First, the cartridge should be removed from the tone arm by taking out the two holding screws. Caution: the two screws nearest the needle merely hold the needle guard and should not be disturbed. The shank of the needle passes completely through the cartridge and is threaded on top. A tiny nut on top holds it securely to the cartridge. After the nut is removed, the needle can be withdrawn and a new or re-tipped needle inserted. Then the nut should be replaced and tightened, and the cartridge reinstalled in the tone arm.

**WEBSTER-CHICAGO TANDEM NEEDLES:** This type of needle is held in by a slotted set-screw facing the front, visible in the photograph of Fig. 15. It can be loosened or tightened with a small screwdriver. The needle should be held firmly with one hand while loosening or tightening the set screw with the other. Sometimes a tandem needle shaped something like a pitchfork is used in this cartridge. However, diamond replacements are always shaped like the needle shown in the photograph. When inserting a needle, the flat side of the shank should, of course, face the set screw.

**WEBSTER-ELECTRIC CARTRIDGES:** (No connection with Webster-Chicago though sometimes used in their changers). Except for their latest turnover cartridge, practically all Webster-Electric cartridges use setscrews to hold the needles in place. On the older turnovers, such as Model F-14, it is necessary to remove the control lever, which is itself held in by a very tiny screw, in order to get at the needle-holding set screw.

**PHILCO CARTRIDGES:** Both the single-stylus model and the tandem type use push-in needles similar to the Q-type mentioned above. The single-tip needle has no rear overhang like the Q, so it is necessary to work a knife or razor blade edge under the shoulder of the shank, as shown in Fig. 16. It is even easier if two blades are used, one on each side. This applies also to the tandem type. The shank has a key on it, like the Q and Q-33 needles, though it faces forward instead of to the rear. Most Philco cartridges can be removed from their tone arms simply by pulling downward on them. With the cartridge out in the open it is much easier to work on the needle.

*Continued on page 76*

Fig. 16. Philco resembles Q-33, Fig. 12.



Fig. 17. U and C styli have tapered shanks.



# Ludwig van Beethoven

## *on records*

By C. G. BURKE

LUDWIG van Beethoven was born in Bonn in 1770. One year after the birth of Napoleone Buonaparte in Ajaccio. As republican General and then Emperor of the French, the soldier traversed Europe, carrying with his artillery the ideas, customs, innovations and achievements of the French Revolution which had made him, and which he never forgot maintained the strength of his sword. Beethoven was the trumpet of the Revolution, and consciously, as the original dedication of the *Eroica* Symphony to General Buonaparte emphasizes.

The French is the classic of Revolutions, victorious in those expiring years of the Eighteenth Century which killed the prior characteristics of that Age of Enlightenment, archaized her institutions of art and instituted the free, diffuse and wild ways of Romanticism. As wigs, swords and kneebreeches were discarded, the minuet capitulated to the waltz; the grand formal opera on Grecian themes lost favor to the loosely-constructed extravaganzas of Weber, Boieldieu and Meyerbeer; and the taut, pointed buffa was replaced by the bubbling, melodious and superficial comic operas of Auber and Donizetti.

Beethoven had a foot squarely in each century. His classic foot maintained the aggressive stride of his romantic foot. Without abandoning the past he embraced the future. He burst asunder the musical forms he had found with the huge passion of an outcry they had not been designed to contain. He made the symphony — and his symphonies are molded in a nobly classic form — an intense emotional panorama; he made the string quartet, which Haydn had brought to exquisite perfection, a vehicle of concentrated exalted utterance, and later, the most brooding, introspective examinations we have in tones. His fifty sonatas are of twenty dimensions and thirty contours. His variations, an incredible exploitation of a musical seed, become poignant treatises on the nature of man. The overwhelming aspirational devotion of the great Solemn Mass is universal and unconfined to churches.

His ancestry was undistinguished and his childhood hard. Like all the greatest, except Gluck and Wagner, in this wicked art wherein so few excel, he was stringently labored in childhood; and the grim parental or other discipline which deprived the great ones of a normal childhood did, in that brutal overseership, indubitably intensify the flight from normalism that made Beethoven, Bach, Mozart and Haydn what they became.

As composers, Beethoven, and Haydn whom Beethoven early imitated, were the least precocious. Their big talents were revealed when each was nearing thirty. Beethoven, however, as a child was a prodigy in performance, wherein a large measure of expertise can be imparted by precept, example and drill. At twelve he conducted the orchestra of the Elector of Cologne. In his early teens he was a sensational organist and, on the smaller keyboards, history records an unapproachable mastery from the beginning until night had descended too far.

We do not now expect a virtuoso to escape from virtuosity, but it was inconceivable to Beethoven that he should stay imprisoned in other men's ideas. Of all musicians, he and Wagner were the grand aspirers: they could not be contained; and if this is apposite to the fiery, nervous, questing, intellectuality of Wagner, it was not implicit in the boisterous, fateful, moody, vain and common humanity of Beethoven.

For this was the ordinary man in quintessence, with the marvelous exception of his limitless gift, the transcendent extraordinariness of his statement of the ordinary hopes, despairs and struggles of ordinary man.

His statement is for everyone not gifted. He sets a path for triumph, after overcoming woe. He announces the grimness of adversity, by conquering it. He clarifies the dream of all who wish to say they had a right to live. He has himself fought against distress of the most brutal sort that can afflict a composer, but he surmounted this and narrates in music how he did it.



Among the truly great men he was one of the least prepossessing and one of the most demanding. He played juvenile practical jokes; his person was often unkempt, his demeanor uncouth; and since his character was always overflowing out of stability, he exhibited often a grave and anxious courtesy, and periodically he was able to exult in the elegance of his clothing. He worshipped a world outdoors and all that lives and grows in fields and forests. He lived most of his days in compressed urban quarters in perpetual litter. From the beginning he emanated an odd and indefinable charm which repelled the ordinary man for whom he spoke, and captivated the enlightened, tolerant and cultivated aristocracy whom he needed and whom his revolution was disinheriting.

He had curious, unstable and passionate affections — for his mother, his nephew, for a diversity of women of whom the most celebrated probably never existed, for certain instruments and certain trees. He had a great facility, which he disdained, in writing masterpieces. We believe, from what we have been told, that he improvised like no one before, and no one since. Yet he revised, corrected and re-made in major part and minor detail nearly all his giant works before he gave them out as finalities. He was tortured by a musical conscience exigent of perfection; and the great, facile Schubert exclaimed in horror at the evidence of drudgery in Beethoven's sketch-books.

The blight of poverty was not upon this man after his youth. He demanded respect from his coevals for the enormous talent he knew he had, and emoluments accompanied the respect he extorted. He had munificent voluntary patrons who demanded for their perspicacious bounty no other return than that he should enrich the world with his music. Besides those who directly subsidized his unprecedented clamor there were others, most often from the highest class, who contributed to his comfort and tried to contribute to his contentment. Music has remembered with gratitude for 150 years, and will perhaps recall with undiminished gratitude forever, the names of Lichnowsky, Lobkowitz, Kinsky, Waldstein, Breuning, Browne, Braun, Brunswick, Rasoumowsky, Erdödy and the Archduke Rudolph.

He composed thunder and died during a thunderstorm which he could not hear, in the fifty-seventh year of his life and the tenth of his black deafness. He had entrusted his conflicts, his tumult, all his triumphs and every battle and his momentary despairs to nine symphonies, seventeen quartets, fifty sonatas, two masses, a dozen trios, seven concertos and a multitude of other receptacles. They are inexhaustible, and an indispensable part of the equipment of modern man. No other voice was both so stentorian and so tender. Deaf, he heard everything inwardly and answered for everybody.

#### SYMPHONIES

##### NO. 1, IN C, OP. 21

Beethoven's first symphony uses an orchestra of the same dimensions as that of Haydn's last. The Haydn form is imitated, and not a little of the Haydn temperament. Writers on music used to condescend to this great *First Symphony*, implying that composers have no musical origins. In truth it seems impossible not to decry the emergent Beethoven in the inchoate "evil whims" that enliven the melodious grace of the last Eighteenth Century symphony.

Of the three LP versions two are transfers from 78's, and one of these latter must be regarded as the most desirable. This is Toscanini's, direct and beautifully proportioned, tender yet incisive, solid in assembly and etched in detail, unrivalled by Walter's excellent but, comparatively, blunt direction. Mengelberg distorts the outline by gratuitous distasteful retards in the first two movements. Recording laurels are to Columbia and Walter, but barely. The early LP has shrill violins and a cumbrous bass not evident in the Toscanini-Victor, which, however, betrays some of its dozen years in a duller outcry of the whole orchestra. A feature curiously common to the three editions is the modesty of horns and trumpets.

—BBC Orch.; Arturo Toscanini, cond. † Brahms: *Haydn Variations*. RCA Vic LCT 1023 26 m \$5.72

—New York Phil-Sym Orch.; Bruno Walter, cond. Col 10-in. ML 2027 23 m \$4.00

—Concertgebouw Orch.; Willem Mengelberg, cond. † *Symphony No. 8* Cap P 8079 22 m \$4.98

##### NO. 2, IN D, OP. 36

The brashly cheerful *Second Symphony* (with a melting Larghetto) evoked a few cries of fright from some of Beethoven's contem-

poraries. The work is a clarifying example of the composer's development, spiritually and technically, in his use of a form and orchestra like Haydn's, and of a musical temperament here still very much like Haydn's, but rougher, more boisterous, more obvious perhaps, big, more energetic and more defiant: attributes which were soon going to make a *Third Symphony* to justify the anguish of contemporaneous reaction.

The phonograph has four versions, of which one was not heard. Of the others, not one is absolutely first-rate although two are rousing statements of the score. These are the versions of Monteux and Reiner. The latter's is deft, taut and crisp in a direction obeyed by a band instantly responsive to his signal and impressively retained within the bright outline of a symmetrical and dramatic shape. Monteux has an easier beat, a more flowing control; his hand is benign and gracious, and perhaps does not insist enough. No doubt Reiner's way conforms to the Symphony's pattern more correctly; no doubt, either, that Monteux's affectionate way inspires its own affection. The purely sonic considerations, however, make the choice fairly easy; Reiner's old LP has a persistently dry sound, and violin tone is shrill, in contrast to a full, suave and heartening delivery permitted the San Francisco orchestra by the engineers.

Kleiber had one of those dull days which afflict him (15 years ago his recording of the Second had some of the élan of the unparalleled Beecham projection.) His slow first movement is surely at odds with the holiday spirit of this Symphony, and the extreme grace of the lovely Larghetto quite eludes his stick.

—San Francisco Sym Orch.; Pierre Monteux, cond. RCA Vic LM 1024 32 m \$5.72

—Pittsburgh Sym Orch.; Fritz Reiner, cond.

Col ML 4085 30 m \$5.45

—Brussels Radio Orch.; Erich Kleiber, cond. Cap P 8116 30 m \$4.98

—Homburg Sym.; Paul Schubert, cond. Regent 10-in. 5010 \$3.00

##### NO. 3, IN E-FLAT, "EROICA", OP. 55

The first six recordings are recommendable; the seventh is unattractive in both recording and performance (Koussevitzky). The best recording values are apparent in the Walter, closely followed by the Toscanini which would have been the best except for a general lack of tonal rondure. Busch has the best balance but the exuberant treble of his violins cannot be subdued on all apparatuses. The Schuricht recording is good standard but unremarkable, a little tubby in the bass and on a smaller scale than Walter and Toscanini. Mengelberg's disc is a successful transfer from 78's, a little opaque but brilliant here and there. Kleiber is damaged by a high frequency ghost on the violins, and he has played this work better: here it is hurried and over-energetic, and it lacks contrast. The Mengelberg, Toscanini, Walter and Busch performances are in different ways more striking — in a commendatory sense — than the others. Toscanini's is direct, hard and inflexible. Walter's is rougher and looser, at once more casual and hotter. Mengelberg's phrasing is more emotional yet less insistent, his dramatic contrasts are more vivid, his contours more fluent than those in any other version. Busch's very slightly faster pace carries the most scrupulous and unindividual expression — a way which is, of course, individual in the extreme — and the absolute regularity of this concept must be admired in an epic of this herculean content and classic shape. Mengelberg's, in his best moments, is the most winning presentment, but he has inserted two or three minute retards to serve as his signature.

The ultimate choice should be among his version, Walter's, Toscanini's and Busch's. The writer's decision wavers: he is inclined most often to the Toscanini on the basis of all-around discal merit, and were it not for the dry tone, the inclination would probably be a conviction. In overall value, Walter's seems a little behind, followed by Busch and Mengelberg whose disc lacks the recording radiance of the first three. This order is certainly alterable for different tastes.

All versions but the Toscanini and Walter have been forced to put the turn-over point in the middle of the Funeral March.

- NBC Orch.; Arturo Toscanini, cond. RCA Vic LM 1042 46 m \$5.72
- New York Phil-Sym Orch.; Bruno Walter, cond. Col ML 4228 48 m \$5.45
- Austrian State Sym Orch.; Fritz Busch, cond. Rem RLP 199-21 44 m \$2.19
- Concertgebouw Orch. Amsterdam; Willem Mengelberg, cond. Cap P 8002 45 m \$4.98
- Berlin Phil Orch.; Carl Schuricht, cond. Decca DL 9534 46 m \$5.85
- Concertgebouw Orch. Amsterdam; Erich Kleiber, cond. Lon LLP 239 45 m \$5.95
- Boston Sym Orch.; Serge Koussevitzky, cond. RCA Vic LM 1145 48 m \$5.72
- Homburg Sym.; Paul Shubert, Cond. Regent 5007 \$5.45

**NO. 4, IN<sub>2</sub>B-FLAT, OP. 60**

Played less often than any of the other Symphonies, the justification apparently lying in the fact that the *Fourth* cannot maintain in its latter pair of movements the culmination achieved during the incredibly serene and lofty Adagio.

There are five recorded versions. For obscure causes, only two were available for this gloss. Although neither is technically as high as the latest engineering standards produce, both are satisfactory; the Szell disc, however, to sound its best, needs strong reduction of the treble. In general, the performances are similar and very good, with Szell a bit the tenderer and the more precise in orchestral delineation, Beecham more athletic and less limpid (presumably attributable to the recording process rather than to that kind of deficiency in this conductor). One seems as good as the other.

- London Phil Orch.; Sir Thomas Beecham, cond. RCA Vic LM 1026 30 m \$5.72
  - Cleveland Orch.; Georg Szell, cond. Col ML 4008 31 m \$5.45
- The following were not heard:
- London Phil Orch.; George Solti, cond. Lon LLP 316
  - Berlin Phil Orch.; Wilhelm Furtwängler, cond. Vox PL 7210
  - Sym Orch.; George Singer, cond. Rem RLP 199-51

**NO. 5, IN C MINOR, OP. 67**

Assuming that everyone knows something of this victorious battle whose iron history is presumably capable of perpetual retelling, let's try to arrange some satisfactory order of merit among the phonographic editions, not one of which is as good as we should expect in this work. The Walter disc has by far the best engineering, very large and brazen, sometimes coarse but with a splendid string-tone and sharp detail. But the conductor's concept permitted some dull doctoring which seems aimless and can be

irritating. Klemperer's straightforward enunciation, nowhere tricky but in places softer, less demanding than Mengelberg and Wolf, is brightly registered in the second-best achievement of engineering. The rather slow pace contributes an inexorable quality to the triumphant paean. As usual, Mengelberg has the most sensitive moments and injects some retards. His version is at once massive and supple, seizing and dramatic. The recording is in transfer from 78 and Capitol is almost invariably reliable in this process: brass is splendid here and the strings phalanxed, but there is some veiling of the wood. The Wolf direction is the most direct of all. This Symphony, with all its magnificence, has a very simple plan to which the conductor adheres without deviation. This is the way qualified conductors conduct until an overwhelming consciousness of their own réclame inspires them to make improvements in masterpieces. Wolf's would be the best edition if his orchestra had been closer to unanimity and the recording, which is solidly satisfactory, more luminous in differentiation.

The remaining versions have enough faults to establish their claim for the bottom of the list. It must be apparent from the contradictory qualities of the first four that no decisive preference can be indicated. The order below states the writer's on the basis of ultimate question, "Which would you rather hear?" answered by himself.

- Vienna Sym Orch.; Otto Klemperer, cond. Vox PL 7070 35 m \$5.95
- Concertgebouw Orch., Amsterdam; Willem Mengelberg, cond. Cap P 8110 30 m \$4.98

**IMPORTANT INFORMATION ABOUT HOW THIS STUDY WAS MADE**

**Records Covered**

There are 230 recorded versions of 119 Beethoven works, occupying 329 sides, in the following synopsis. With the exception of 24 sides, which were unobtainable or so damaged as to be unplayable, this compendium reviews every Beethoven work recorded on LP as of mid-January.

**Personal Preference**

Since the synopsis was conceived as a practical guide for music lovers, the writer has submerged his own prejudices as rigidly as he could. He has tried to indicate the broader, the more universal values of the discs, rather than certain niceties or certain eccentricities pleasing or repellent to himself, perhaps exclusively. Thus, the prejudices implicit in the following judgments are not denied or condoned by their owner who, in exculpation of them, merely says that he tried to diminish their impact when he recognized them.

**Quality of Reproduction**

All discs were heard in the same quarters and from the same apparatus. Many were frequently checked on other instruments to determine the degree of certain recorded deficiencies. Every record was, of course, played from beginning to end, and parts of many were repeated in direct comparison until a fair conclusion could be reached.

Frequent reference is made to high frequency exaggeration and extraneous bass rumble afflicting certain discs. These observations are of greater moment to enthusiasts with high fidelity equipment than to owners of conventional phonographs. The latter, in all probability,

would not hear these annoyances; in compensation, the pursuers of high fidelity will hear a timbre the others cannot extort from their machines.

In reviewing records, the writer has made it a rule not to refer to surface noise or spindle-hole eccentricities, since these faults, if publicized, could libel a good recording when a single defective example alone may contain them. But in a compilation of this extent, where records of all labels are played daily for many hours, the writer noticed perforce a sharper surface noise on Remington and London records than on the others. He made inquiries and was informed that the surface difficulty resulted from temporary conditions, since rectified. It is to be hoped that this is correct, and the information is made public with a view to reassuring music lovers apprehensive of the surfaces of these records, that if some are defective, this is apparently not now the rule for the majority. Discophiles would be prudent in making certain that individual copies are not aberrations. A certain number of Allegro records have been entirely remade, and some of those with an engineering censored here may now be available with improved acoustics.

In the synopsis where there is more than one version, the writer's order of preference is indicated by the order of listing. Except where the text may state otherwise, the top is judged best, the bottom, poorest.

Sincere acknowledgements are heartily given to the friends, colleagues, manufacturers, merchants and others who made

discs available for this study. With one exception, every manufacturer cooperated when asked. Especial thanks are offered to Allegro, Capitol, Columbia, Mercury and RCA Victor for their graciousness in supplying certain discs at the very last moment; also to the Haynes-Griffin Music Company of 420 Madison Avenue, New York, who were particularly amiable in providing a number of records which could be found available nowhere else.

**Abbreviations Used**

In setting this material to type, it has been necessary to adopt certain standardized abbreviations which are used, however, only in the catalogue data at the end of each review. The names of certain record manufacturers were condensed as follows:

All	Allegro
Bar	Bartok
Cap	Capitol
Col	Columbia
Conc	Concert Hall
Lon	London
Mer	Mercury
RCA Vic	RCA Victor
Rem	Remington
Ren	Renaissance
Van	Vanguard
West	Westminster

In addition, Orchestra has been cut to Orch.; Symphony to Sym.; Philharmonic to Phil.; Conductor to Cond.; and minutes to a simple m. All records are of the 12-in. size unless otherwise stated. Where selections other than the one under discussion are coupled, the additional ones are given immediately after a dagger (†), in accordance with the practice used by Schwann.



- “Austrian” Sym Orch.; Hans Wolf, cond. Rem 10-in. RLP 149-9 28 m \$1.69
- New York Phil-Sym Orch.; Bruno Walter, cond. Col ML 4297 32 m \$5.45
- Paris Conservatory Orch.; Carl Schuricht, cond. Lon LLP 7 32 m \$5.95
- Boston Sym Orch.; Serge Koussevitzky, cond. RCA Vic LM 1021 30 m \$5.72

NO. 6, IN F, “PASTORAL”, OP. 68

Three of the versions — Klemperer, Kleiber and Walter — are very beautifully played, and one — Scherchen — is magnificently recorded. What originally appeared to be an impossible task of selection becomes on analysis rather easy since Scherchen may be eliminated for suggestions of sun-sodden lethargy rather than well-being, and both Walter and Kleiber have some defects of recording not present in Klemperer. Wöss offers a gracious standard fresco, and would have stood a step higher if his violins did not dominate his orchestra to excess. Before dismissing Kleiber, whose transfer from 78 has created an orchestral artefact, not unpleasant but decidedly unreal, we may say that his Storm is the most satisfactorily ominous and spectacular, and it should be said of Walter that each of his five movements is sympathetically expressive and superbly sung. There remains Klemperer. For the first three movements, his transfigured utterance not only eclipses its LP rivals and any other phonographic version but is, with a soft finality, perfection in moodal sensitivity and instinctive oneness with Beethoven breathing deep in Heiligenstadt. In no other “Pastoral” does so simply sweet a devotion respire so naturally and with so little effort. It is an exudation of the essence of this music, its mingled spiritual and physical essence: the intimate communion of man with the small immensities which in preserving and threatening life enrich and perfume it. The recording properties of this performance are transparent and intimate, particularly in the wood. The Storm, if not Kleiber’s tempest, is ominous here, following the gentle unfolding of the preceding scenes. Drastic treble reduction is necessary, but the sound is splendid after the reduction.

- Vienna Sym Orch.; Otto Klemperer, cond. Vox PL 6960 41 m \$5.95
- Philadelphia Orch.; Bruno Walter, cond. Col ML 4010 38 m \$5.45
- Sym Orch.; Kurt Wöss, cond. Rem 199-7 37 m \$2.19
- London Phil Orch.; Erich Kleiber, cond. Lon LLP 33 39 m \$5.95
- Vienna National Opera Orch.; Hermann Scherchen, cond. West WL 5108 39 m \$5.95

NO. 7, IN A, OP. 92

Wagner’s wonder-stricken epithet “apotheosis of the dance” still serves, despite murmured cavils, as an indispensable quick characterization of this cosmic exultation in rhythmic rapture which it does not seem possible a man could write.

Of the seven editions, two are of salient worth, three of conflicting values, and two have defects which permit their disqualification from this serious competition.

Clearing the field by examining the latter first, we find the Kleiber disc excited rather than exultant, and dogged by small deficiencies in playing and in the recording; and the Muench — well recorded aside from too much echo — silkenly enunciated in a reading of tranquil languor, a novel treatment, and happily Mr. Muench’s alone. In the central category, the recording of the Philadelphians seems tarnished to us now, although not fatally, and Walter’s version is either willfully or carelessly eccentric in tempo, while the big, bluff sound, here and there very felicitous, is as often rather rough

and the wood is too forward. The Wöss performance has a strong likeness to the beautiful reading on 78’s of Felix Weingartner, but the horns do not sound out in the Remington recording.

This leaves Toscanini, whose all-around performance is admirable, and Scherchen, supported by superb engineering. Toscanini’s first movement is certainly the most intensely dynamic ever put upon discs, and his most familiar attribute, passion-cum-exactitude, is distinctly appropriate to the giddy lines of this Symphony except in the Trio where his rapid pace converts a moment of devotion to some threatening gestures. The Toscanini recording dates back to about 1935, and the engineers have spectacularly succeeded in extracting everything possible from the 78’s. The bass is a little tubby and the treble lacks some brightness, but within its restricted range this is a good recording. Nevertheless, Dr. Scherchen’s splendid orchestra is reproduced with such a totality of superiority to all the other editions that the hearing is a much more exciting experience, particularly in the two last movements. Indeed, the wonderful culmination of the finale of the Westminster disc would alone make it preferable since here conductor and engineers have been able to realize the ecstatic, irresistible propulsion of the music far more completely than any other combinations. There is some basis for objection to the slow pace of the Scherchen first movement, but repeated hearings erase an original sense of injury, which repeated hearings of the sober tramp of the Muench finale, for example, only fortify.

- Vienna National Opera Orch.; Hermann Scherchen, cond. West WL 5089 37 m \$5.95
- New York Phil-Sym Orch.; Arturo Toscanini, cond. RCA Vic LCT 1013 34 m \$5.72
- New York Phil-Sym Orch.; Bruno Walter, cond. Col ML 4414 35 m \$5.45
- Sym Orch.; Kurt Wöss, cond. Rem RLP 199-8 36 m \$2.19
- Philadelphia Orch.; Eugene Ormandy, cond. Col ML 4011 34 m \$5.45
- Boston Sym Orch.; Charles Muench, cond. RCA Vic LM 1034 35 m \$5.72
- Concertgebouw Orch., Amsterdam; Erich Kleiber, cond. Lon LLP 240 33 m \$5.95

NO. 8, IN F, OP. 93

Effervescent, sportful and boisterous, the little *Eighth* is elastic enough to tolerate directional abuses, but in the five recorded versions only Mengelberg is at all subversive, and then just with a couple of trifling retards in the first movement to establish his individuality. Only the first two of the list below indicate a hierarchical significance. They seem to be as a whole more desirable than the following three, and to the writer the Monteux is the most desirable of all. Here is an epitome of analysis:

Monteux: This interpretation has the geniality of the conductor’s own being: plump, ruddy, *bon enfant*, equable. Probably the slight orchestral roughness is the result of his tolerant personality, but we never have everything on records and this is, in general, one of the most completely realized discs among the Nine Symphonies, with its bright winds, clean bite of the strings and inclusive trueness of sound.

Busch: The most reflective and tempered perusal of the *Eighth* — unusual treatment, not disappealing. Also the most incisive direction, the cleanest orchestral response and, after Muench, the greatest impression of orchestral weight. The treble on the amplifier needs careful adjustment to discipline the violins on this disc.

Mengelberg: Spry and athletic, and an extremely able transfer from 78’s but plainly

of poorer sonic quality than the preceding.

Walter: A broader observance of the whims and contrasts than is to be found elsewhere makes this version a little less convincing than the others. It is a very early LP, but a pretty good one — barring some intermittent violin harshness and an incomplete treatment of the winds. Very fine *pianos*.

Muench: Many felicities of recording, big and bold, but with an excessive bass and some obscurity in wind definition. There is a very hot pace in this one which has its own exhilaration, and the disc would be in a challenging posture *vis-a-vis* the others if it lacked background rumble.

- San Francisco Sym Orch.; Pierre Monteux, cond. RCA Vic 10-in. LM 43 25 m \$4.67
- Austrian State Sym Orch.; Fritz Busch, cond. † Haydn: *Symphony No. 101* Masterseal MW 39 27 m \$6.45
- Concertgebouw Orch., Amsterdam; Willem Mengelberg, cond. † *Symphony No. 1* Cap P 8079 25 m \$4.98
- New York Phil-Sym Orch.; Bruno Walter, cond. Col 10-in. ML 2001 24 m \$4.00
- Paris Conservatory Orch.; Charles Muench, cond. Lon 10-in. LPS 111 21 m \$4.95

NO. 9, IN D MINOR, WITH FINAL CHORUS ON SCHILLER’S “ODE TO JOY”, OP. 125

The closing paean to Elysian and human brotherhood has adulterated the repute of the *Ninth Symphony* into ambiguity. There is a tendency to think of the Finale as the symphony, and since this Finale declaims most vehemently a quasi-religious sentiment, there is a deplorable tendency to assess the music according to the degree of coincidence between its religion and that of the assessor. Thus one hears quick spoken reactions to this work almost as if the speakers were attracted or repelled by a slogan. And yet, if one leaves the “Ode to Joy” entirely out of consideration, there remain three perfect movements immediately apparent as of the most miraculous Beethoven. The Scherzo is his greatest; the long contemplative song of the slow movement which makes regret a rapture is incontestably the most beautiful of his eight symphonic slow movements, surpassing the infinitely placid loveliness of that in the *Fourth*, as Michaelangelo surpasses Ingres; while the deadly intensity of the opening Allegro is not comparable with anything.

It is plain that none of the three recorded versions is definitive, and that the Walter is preferable to the others in the sum of its merits. The Koussevitzky is not likely to be acceptable to people familiar with the mighty score. In public performance this conductor used to offer a good *Ninth*, but his concept changed, or his abilities flagged, for this one which should have been his monument. It is vitiated although violent; heavy, but weak; in places staggering between over-broad alternations of vehement *sforzati* and perplexing syncopes. The great hurt in this is the nullification of the really ravishing sound produced by the Boston Symphony Orchestra in the three last movements, perhaps as mellow a synthesis as has appeared on discs, and with a clarity of wind statement in places where the winds are inaudible in the other versions. Walter’s work is not beset by any falter; his vigor and control are unimpaired; his third movement is the most stirring and so too, his opening. The Ormandy edition, a very early LP, is surprisingly clear and rich for its age, and this conductor has expressed most vigorously the ferocious good-will of the Scherzo. Walter’s version is the newest and the most luxuriant of sound, although that sound is not of the Boston Symphony Orchestra.

Music lovers familiar with the Felix



Weingartner 78's will not find in any of these editions the wonderful, fluent control exercised by that grievously missed musician.

—New York Phil-Sym Orch. and Westminster Choir; Bruno Walter, cond. Irma Gonzalez (s), Elena Nikolaidi (a), Raoul Jobin (t), Mack Harrell (bne). † Brahms: *Schicksalslied*, Op. 54 2 Col SL 156 1 hr 5 m \$10.90

—Philadelphia Orch. and Westminster Choir; Eugene Ormandy, cond. Stella Roman (s), Enid Szanthe (a), Frederick Jagel (t), Nicola Moscona (bs). † *Leonora Overture No. 3* 2 Col SL 150 1 hr. 3 m \$10.90

—Boston Sym Orch. and Berkshire Music Festival Chorus; Serge Koussevitzky, cond. Frances Yeend (s), Eunice Alberts (a), David Lloyd (t), James Pease (bne). † *Egmont Overture* 2 RCA Vic LM 6001 1 hr 8 m \$11.44

#### UNAUTHENTICATED, IN C, "JENA"

There is both audible and external evidence to support the contention that this is an early Beethoven product which he chose not to publish. It implies some of his mannerisms and recalls many of the mannerisms of Haydn, and was certainly written by a man of caliber. Without profundity, it presents a procession of spirited and melodious ideas in the classic mold with the surety of an experienced or a very gifted hand. It is seldom heard except on the phonograph, where Prof. Heger gives it the gallant, brisk and stimulating performance he would accord a standard masterpiece. The engineering is not notable, but will be found satisfactory if the stridency of the violins can be curbed in the amplifier.

—Munich Phil Orch.; Robert Heger, cond. † *Namensfeier* and *Weibe des Hauses Overtures* Mer MG 10055 25 m \$4.85

#### OVERTURES

##### WEIHE DES HAUSES, IN C, OP. 124

A noble work seldom played, the *Consecration of the House* has been victimized by the condescension of those who have not heard it. A proud devotional introduction leads into a jubilant fugue and returns to underline the solemnity of dedication. This is well outlined by the Bamberg conductor Gotthold Lessing, but his band is rough and the recording is wiry. On the other hand, the Toscanini record is notable for splendid orchestral playing and its sound has been commendably captured in transference from 78's. Unfortunately, the conductor's quick pace and curt phrasing in the introduction lessen its stateliness and provide insufficient contrast for the fugue, itself taken so quickly as to suggest fever rather than rejoicing. The superior sound makes the Toscanini version preferable, but miracles have happened on LP, and we may soon have a third *Weibe des Hauses* of adequate performance and reproduction.

—NBC Orch.; Arturo Toscanini, cond. † Schumann; *Manfred Overture* RCA Vic LM 6 9 m \$4.67

—Bamberg Sym Orch.; Gotthold Lessing, cond. † "Jena" *Symphony* and *Namensfeier Overture* Mer MG 10055 12 m \$4.85

##### COROLAN, OP. 62

Grim and implacable, contemptuous of weakness, a superb work formally perfect, without one supererogatory note to mar its fateful decision. Remarkably, there is only one version, an honest projection without polish, a little wiry in the recording.

—Munich Phil Orch.; Rudolf Albert, cond. † *Egmont Overture* and *Leonora Overture No. 3* Mer 10-in. MG 15002 8 m \$3.85

##### EGMONT, OP. 84

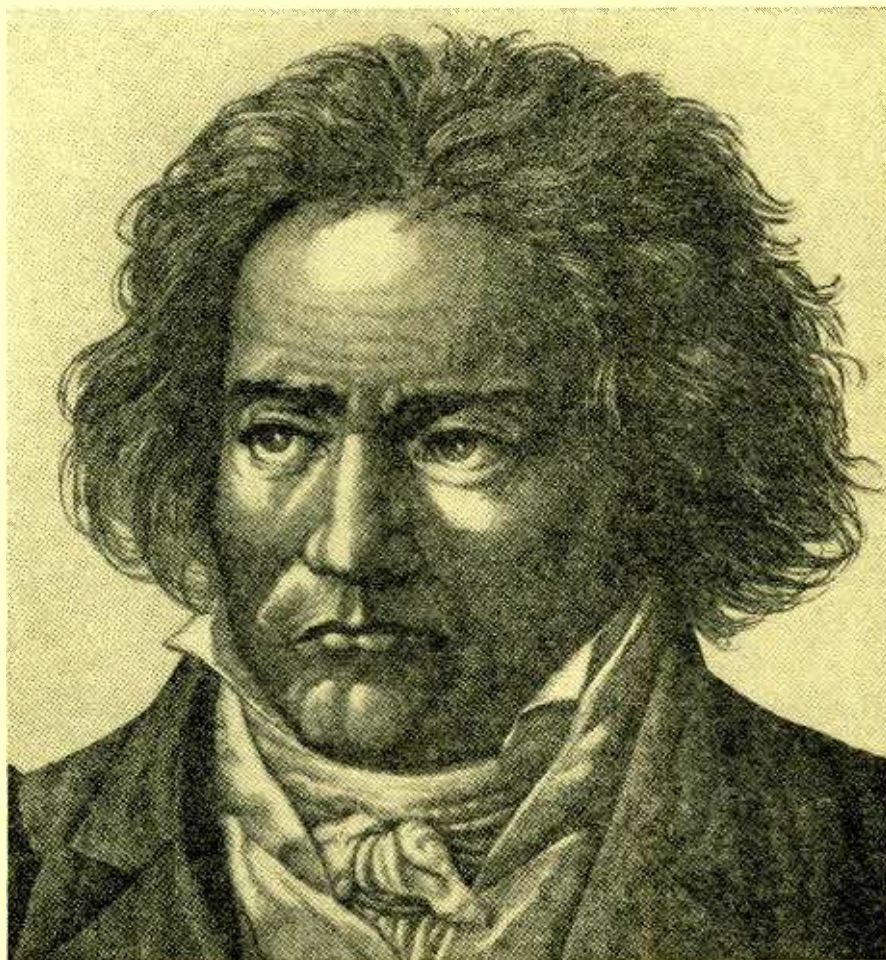
The incidental music which Beethoven wrote for Goethe's drama comprised nine numbers besides the famous Overture. In Germany, the music is played as a matter of course when the drama is mounted, but since *Egmont* does not appear on the American stage, we seldom have an opportunity to hear its passionate, frank and moving music. The ten pieces have been recorded once as a unit, and this recording is not generally available although it is a valued addition to phonographic repertory. Mr. Goehr's direction is by no means inspired, but is steady and understanding, and Miss

—Munich Phil Orch.; Robert Heger, cond.

† *Leonora No. 3* and *Coriolan Overtures* Mer 10-in. MG 15002 8 m \$3.85

##### LEONORA, OPP. 72, 72A AND 138

For *Fidelio*, which was originally called *Leonora*, Beethoven for various reasons and in several eras wrote four overtures. One of these, called *Fidelio*, was the third written, and is now played as the overture to the opera. Another, known now as *Leonora No. 3*, was the second written, and is played generally as an interlude between the last two scenes of the opera. *Leonora No. 2* was the original version of *Leonora No. 3*.



LUDWIG VAN BEETHOVEN 1770-1827

Flury's Clärchen is dramatically stated. The sonic quality of the disc is like that of Concert Hall's *Prometheus* album.

—Margit Flury, soprano. Winterthur Orch.; Walter Goehr, cond. Con B-7 39 m Available to subscribers only.

OVERTURE ONLY: The procedure of Heger, building slowly to a mighty climax after a subdued opening, seems more rational than the Koussevitzky method of expending force en route, but except in this concept of dramatic outline, every advantage belongs to the latter's direction. The resounding splendor of the Boston orchestra and a finely adjusted and mellifluous feat of engineering make the totality seem almost as superb as it should be. Unluckily, to own this *Egmont* one must purchase also the disappointing Ninth Symphony, which makes the cost a little excessive.

—Boston Sym Orch.; Serge Koussevitzky, cond. † *Symphony No. 9* RCA Vic LM 6001 8 m \$11.44

*Leonora No. 1* (called by Beethoven *Characteristic Overture in C*), receives an occasional concert performance and has not yet appeared on LP, although there were good 78's by Toscanini and Mengelberg. The overture to *Fidelio* may be found in the Oceanic album of that opera.

No. 2. The dramatic design, thematic material and development are similar to those of the more closely textured No. 3. A great overture but less great than the latter, although in the late 20's a strong effort was made to convince us of the contrary. In the only recording, the limp performance seems to have been caused by confusion with its successor. The engineering is flawed, with the "anticipatory echo" particularly obnoxious.

—Munich Phil Orch.; Eugen Pabst, cond. † Brahms: *Tragic Overture* Mer 10 in. MG 15038 15 m \$3.85

No. 3. This is a supreme tone-poem, a compact and heroic epitome of the drama



of *Fidelio*. It is apparently deathless and with the *Fifth Symphony* occupies an inevitable place as utterly indispensable music in the repertoire of every symphony orchestra in the world. Because of its vast appeal we need not doubt that the near future will bring us some new recordings of considerably higher merit than those listed below, not one of which is recommendable, an astonishing lapse for this work.

- NBC Orch.; Arturo Toscanini, cond.  
† Ravel: *Daphnis and Chloe Suite No. 2*  
RCA Vic LM 1043 13 m \$5.72
- Philharmonia Orch.; Paul Kletzki, cond.  
† *Symphony No. 9* 2 Col SL 150 14 m  
\$10.90
- Munich Phil Orch.; Rudolf Albert, cond.  
† *Egmont and Coriolan Overtures* Mer  
10 in. MG 15002 15 m \$3.85

#### NAMENSFEIER, OP. 115

Written to commemorate St. Francis's Day in honor of the last Roman Emperor, this seldom-played Overture is rather cleverly clothed in a motley of pomp and rejoicing. It is certainly worth more hearings than it receives. Prof. Heger's direction is sure and seems affectionate; the externally induced wire in the violins is very resistant to eviction even through a most flexible amplifier. —Munich Phil Orch.; Robert Heger, cond.  
† "Jena" *Symphony and Weihe des Hauses*  
Mer MG 10055 7 m \$4.85

#### CONCERTOS FOR PIANO

##### NO. 1, IN C, OP. 15

The brilliant light of the Giesecking performance exposes brutally the deficiencies of the three other discs, which seem shabbier after Giesecking than before, and perhaps shabbier than they really are. The man is in one of those rare, admirable moments when he has no peer, when the agility of his fingers is dictated by grace of understanding. With the anonymous conductor (Süsskind?) he conveys the bubbling sprightliness of the *First Concerto* with ingratiating ease and crispness. The engineers have aided with the best of the four recordings, good average, not so rich and detailed in the orchestra as London but brighter, and with a purer treble in the piano. The Schröter-Altmann performance is a chaste and attractive miniature in a rather unpleasant recording. Gulda himself is excellent, limpid, poised and sinuous, but Dr. Böhm's prim and temperate direction has censored most of the frolic out of the work. Miss Dorfmann's heavily marked accents and Mr. Toscanini's urgency make an execution tedious from its excess of sparkle. (After Giesecking, it was found impossible to decide on a proper order of precedence for the others.)

- Walter Giesecking. Philharmonia Orch.; cond. unnamed. Col ML 4307 31 m \$5.45
- Heinz Schröter. Bavarian Radio Orch.; Hans Altmann, cond. † Haydn: *Concerto in D* Mer MG 10047 34 m \$4.85
- Ania Dorfmann. NBC Orch.; Arturo Toscanini, cond. RCA Vic LM 1039 32 m \$5.72
- Friedrich Gulda. Vienna Phil Orch.; Karl Böhm, cond. Lon LLP 421 40 m \$5.95

##### NO. 2, IN B-FLAT, OP. 19

This was the first written (not counting the early effort in E-flat) and is the least often performed of the five. It is by far the slightest, but it is enjoyable and easily assimilable. Unfortunately neither of the recorded versions is considered here a recommendable item, one because of its performance, the other because of coarse engineering.

- William Kapell. NBC Orch.; Vladimir Golschmann, cond. RCA Vic 10-in.  
LM 12 29 m \$4.67
- Hans Schröter. Bavarian Radio Orch.;

Hans Altmann, cond. Mer 10-in. MG  
15013 29 m \$3.85

##### NO. 3, IN C MINOR, OP. 37

Not one of the recorded performances of the big and imposing *Third Concerto* contains all the features we should like. The Rubinstein-Toscanini disc is a failure, and each of the others limps somewhere, with Arrau-Ormandy probably the most satisfactory and certainly the best joint realization, with the slow movement very beautifully sung. But the piano is hard. Mr. Ormandy's work is the smoothest of any of the conductors. Haskil-Swoboda has the best recording, fat and healthy, nicely differentiated, thorough for both piano and orchestra. Mme. Haskil is persuasive although less nimble than Arrau, but the Swoboda direction is solemn in the first movement to a depressing degree not completely mitigated by a lyrical Largo. Backhaus-Böhm has intermittent fine moments but a number of difficulties appear in the sound as recorded. Arrau-Ormandy seems to be the wisest choice.

- Claudio Arrau. Philadelphia Orch.; Eugene Ormandy, cond. Col ML 4302 35 m \$5.45
- Clara Haskil. Winterthur Sym Orch.; Henry Swoboda, cond. West WL 5057 35 m \$5.95
- Wilhelm Backhaus. Vienna Phil Orch.; Karl Böhm, cond. Lon LLP 289 37 m \$5.95
- Artur Rubinstein NBC Orch.; Arturo Toscanini, cond. RCA Vic LCT 1009 33 m \$5.72

##### NO. 4, IN G, OP. 58

The delectable lyricism of this wonderful work has been favored on the phonograph with four interpretations of general excellence: a rarity indeed for one of the major works, to have none of its recorded versions somewhere spoiled by bad taste, incompetence, fatuity or pretentiousness. The four versions are listed in order of the writer's preference, based on overall discal quality, but the first two are so close, after a comparison of their merits, that the deciding factor was the richer, fuller orchestra revealed in the Backhaus-Krauss, with superbly defined wind instruments. The piano tone is strong and excellent everywhere except now and then in the high treble. It is necessary to warn that a regular pulsation of low frequency background resonance may spoil the pleasure of Backhaus's muscular and tender versatility and the lovely, lingering environment supplied by the conductor's affectionate understanding.

The happiest and most effervescent version is that of Rubinstein-Beecham. In concert with a man of Sir Thomas's stature, this pianist is not victimized by his own facility, and the results are exceptionally gratifying. This is a recording in transference from recent 78's, not so solid as two of the other versions but without serious engineering faults.

Casadesus-Ormandy and Novaes-Klemperer are rather special in their treatment. Mr. Casadesus reduces the proportions of the work and stresses, with the orchestra, its softer rondures. The smooth responsiveness of the orchestra is notable, and the enregistered tone is surprisingly good in view of the age of this edition. The principal weakness is some clatter at the top of the keyboard, *forte*. The deliberate pace of the Vox version will probably not please music lovers accustomed to more conventional treatment, and this writer believes the retarded tempo not helpful, except in the Andante, where it produces a very eloquent poem. An interesting feature of these slow tempos is that they seem to benefit the pianist and hurt the orchestra, which must of course jibe with the soloist. The recorded piano sound is excellent. The

sound of the orchestra lacks clear detail.

- Wilhelm Backhaus. Vienna Phil Orch.; Clemens Krauss, cond. Lon LLP 417 32 m \$5.95
- Artur Rubinstein. Royal Phil Orch.; Sir Thomas Beecham, cond. RCA Vic LCT 1032 30 m \$5.72
- Robert Casadesus. Philadelphia Orch.; Eugene Ormandy, cond. Col ML 4074 29 m \$5.45
- Guionar Novaes. Vienna Sym Orch.; Otto Klemperer, cond. Vox PL 7090 32 m \$5.95

##### NO. 5, IN E-FLAT, OP. 73 ("EMPEROR")

Schnabel used to answer sturdily, when he was asked what he thought was the greatest piece of piano music, that this is; and he was not alone in thinking so. His performance has been, in our time, the standard: it is the one that other pianists imitate. His second recording, available again and transferred to LP with evidence of the Victor skill at these resuscitations, contains the finest playing we have of the piano part. The orchestral collaboration provided by the Chicago Symphony Orchestra has not the majesty and force of the admirable equivalent offered by Georg Szell to Clifford Curzon for London, which should have been, in view of its recency and Szell's mastery, the essential edition; but something rotted somewhere in a basically excellent recording. There are several singular alterations of pitch, and the violins are harassed by a spurious shimmer which can never quite be expunged via the treble control. Schioler-Garaguly tempers the Emperor's might with delicacy, not unpleasantly, in an honest and cohesive recording not less meritorious for being unsensational. Either this or Schnabel-Stock seems to be the best of these recorded Emperors, although Karrer-Wöss (whoever they are) have given us, curiously, the stateliest of the five concepts. Miss Karrer has a musical dignity somewhat above the limits of her strength but she and Wöss mingle the serene majesty of their exposition with a complicating sense of human friendliness, of uncustomary appeal. If severe rectification of the treble curve can be obtained, the tonal qualities of their disc will be found something more than satisfactory. In the Columbia edition, Mr. Ormandy's opulent orchestra sounds superbly the superb music given to it, but the engineers, triumphant with the warm orchestral pliancy, failed the soloist, freezing his piano to a brittle metal.

- Victor Schioler. Danish National Radio Orch.; Carl Garaguly, cond. Mer MG 10060 37 m \$4.85
- Artur Schnabel. Chicago Sym Orch.; Frederick Stock, cond. RCA Vic LCT 1015 38 m \$5.72
- Felicitas Karrer. Sym Orch.; Kurt Wöss, cond. Rem RLP 199-1 37 m \$2.19
- Rudolf Serkin. Philadelphia Orch.; Eugene Ormandy, cond. Col ML 4373 38 m \$5.45
- Clifford Curzon. London Phil Orch.; Georg Szell, cond. Lon LLP 114 38 m \$5.95

##### WITHOUT NUMBER, IN E-FLAT (1784)

We do not condescend to Beethoven, even at fourteen. This exhumation, which Beethoven would not publish, contains an orchestral reconstruction from notes in the composer's hand, the piano part being entirely his own. It is pretty and well-made, and by no means dull. Played for this disc with a becoming tenderness, it may be the only edition for a long time. Unfortunately the old recording is afflicted with considerable distortion.

- Orazio Frugoni. Pro Musica Chamber Orch.; Paul Paray, cond. Vox PL 6470 22 m \$5.95

## CONCERTO FOR VIOLIN

### CONCERTO IN D, OP. 61

A rare case. The four recorded interpretations are excellent beyond cavil for soloists and orchestra, with a palm for performance going to Heifetz-Toscanini, not necessarily because of a musical accord which is equally apparent in the other editions, but because of the marvelous chaste line of the Heifetz fiddle, perfectly proportioned without frigidity. (This violinist can be counted on for his best work when he is stimulated by the example of a conductor of stature: Mr. Toscanini is in a position to exact more than Mr. Emanuel Bay.) It is possible that the others are on a par, although the superior richness of Ormandy's orchestra is patent,

canini, cond. RCA Vic LCT 1010 39 m

\$5.72

—Joseph Szigeti. New York Phil-Sym Orch.;

Bruno Walter, cond. Col ML 4012 42 m

\$5.45

—Zino Francescatti. Philadelphia Orch.;

Eugene Ormandy, cond. Col ML 4371

43 m \$5.45

### "TRIPLE" CONCERTO

CONCERTO FOR PIANO, VIOLIN, VIOLON-CELLO AND ORCHESTRA, IN C, OP. 56

A greater proportion of Beethoven's work is in active repertory than any other's of the true Olympians. Yet the *Triple Concerto*,

No. 2, IN A, OP. 2, No. 2

A wayward humor suggestive of Haydn, but less ordered and headier than characteristic of the older composer, infuses this Sonata throughout its surprising length. The Scherzo is an endearing example of the form so irresistible to Beethoven. It presents no particular difficulties to the talented fingers and open mind of Mr. Appelbaum, endowed in this recording with a deep, vibrant bass and wonder of wonders, a mellow and undistorted treble!

—Kurt Appelbaum. † *Sonata No. 32* West WL 5075 23 m \$5.95

No. 5, IN C MINOR, OP. 10, No. 1

C minor for Beethoven almost invariably signified portent, struggle and triumph, but the dramatic *Fifth Sonata* interrupts the triumph of its Finale to end with a question, leaving the hearer with an uncomfortable feeling of suspension and apprehension. The vigor and intelligence of Backhaus backed by uncommonly able assistance from the engineers put this disc in the upper rank of Beethoven piano records.

—Wilhelm Backhaus. † *Piano Sonatas No. 6 and 25* Lon LLP 393 14 m \$5.95

No. 6, IN F, OP. 10, No. 2

Backhaus's celebration of the jubilant aerial spoofing of this untrammelled treasure is less insistent on its contrasts and vagaries than Petri and to this writer the easier treatment is the more effective. Furthermore, the Columbia recording, commendable at its issuance, is hard at the upper half of the keyboard, while the London delineates a very persuasive piano tone. Both discs suffer from background rumble. — The discrepancy in elapsed time is caused by Backhaus's disdain for the indicated repeats.

—Wilhelm Backhaus. † *Sonatas No. 5 and 25* Lon LLP 393 10 m \$5.95

—Egon Petri. † *Bach-Busoni: Chaconne* Col 10-in. ML 2049 15 m \$4.00

No. 7, IN D, OP. 10, No. 3

The verdict is to the more mobile temperament and digitation of Mr. Appelbaum, who is more fluent and clearer even in his strongest contrasts and most abrupt transitions than Mr. Hambro has been able to realize in his most lyrical passages. Since the Appelbaum disc has also been favored with engineering of the first class, easily superior to the other, the Westminster choice is dictated.

—Kurt Appelbaum. † *Sonata No. 21* West WL 5044 25 m \$5.95

—Leonid Hambro. † *Sonata No. 28* All AL 85 20 m \$5.45

No. 8, IN C MINOR, "PATHETIQUE", OP. 13

Time and ten thousand pianists have removed some of the bloom from this delicate and wistful garland, but for those who have heard it fewer than five hundred times it must still be endearing. The recorded performances all seem good, with a decided advantage to Mr. Rubinstein's exceptional clarity and poise. The sound of his piano, however, has not been realized so well as that of Frugoni, which is the most satisfactory, or Kitchin's, which would have been the most impressive with a little less metal at the top.

—Artur Rubinstein. † *Schumann Fantasie-stücke, Op. 12* RCA Vic LM 1072 17 m \$5.72

—Orazio Frugoni. † *Sonatas No. 14 and 23* Vox PL 7160 15 m \$5.95

—Alfred Kitchin. † *Sonata No. 23* Rem RLP 199-6 18 m \$2.19

No. 9, IN E, OP. 14, No. 1

The running glibness of Mr. Baller seems highly appropriate to a pleasantly superficial Sonata to which Mr. Appelbaum gives

## AN INTRODUCTION TO BEETHOVEN

Heard for the first time, a great deal of the master's work is intimidating. It is not necessary to dive into the deepest waters first; there are delightful sun-streaked lagoons. The following immersions are both warm and appetizing:

Andante of the First Symphony  
 First and Second Movements of the Second Symphony  
 Scherzo of the Third Symphony  
 Adagio of the Fourth Symphony  
 Sixth Symphony  
 Allegretto scherzando of the Eighth Symphony  
 First Concerto  
 Minuet of the Septet  
 Scherzo and Minuet from the Fourth Quartet  
 Finale of the Eighth Quartet  
 Finale from the Creatures of Prometheus  
 First Movement of the Serenade, Op. 25  
 First Movement of Piano Sonata No. 1  
 Piano Sonata No. 17  
 Piano Sonata No. 25  
 Last two Movements of Piano-Violin Sonata No. 7  
 "Spring" Sonata  
 Cello Sonata No. 3  
 Variations, Op. 35

while it is also patent that the Ormandy direction has moments of languor at odds with a more prevalent driving energy.

Not one is an outstanding example of engineering. Heifetz-Toscanini dates from circa 1940 and did not adapt itself easily to LP processing. The Szigeti-Walter, lyrical and easy-going, is an old LP by no means contemptible, but somewhat murky by present standards. Francescatti-Ormandy are the dazzlers of the lot, and have the newest recording, which regrettably obtrudes a ghost-like fifth string to the solo violin that cannot be banished. The Kulenkampff-Schmidt-Isserstedt collaboration is superficially the least arresting and in the long run perhaps the most rewarding, for not only do these two skillful and intelligent musicians respond nicely to each other, but they maintain an equanimity of grace throughout the work. The disc is a transfer from 78's, but one accomplished with competence, and the tonal results are the best of all. Not one is definitive, but for music lovers without the most substantial of violin concertos in their collection, the Capitol record is recommended. For music lovers who already have any of these, the advice is to keep it, the points of difference being insufficient as a whole to warrant a duplication.

—Georg Kulenkampff. Berlin Phil Orch.; Hans Schmidt-Isserstedt, cond. Cap P 8099 45 m \$4.98

—Jascha Heifetz. NBC Orch.; Arturo Tos-

canini, cond. RCA Vic LCT 1010 39 m \$5.72  
 —Joseph Szigeti. New York Phil-Sym Orch.; Bruno Walter, cond. Col ML 4012 42 m \$5.45  
 —Zino Francescatti. Philadelphia Orch.; Eugene Ormandy, cond. Col ML 4371 43 m \$5.45

unique in its form, and first-class Beethoven, seldom is publicly performed, and in phonographic history has had only two complete recordings. It is a broad, exultant work, garnished with sweeping tunes and hazards for cellists. None of the hazards is too formidable for Mr. Rose in the only LP edition, and the lesser difficulties confronting his colleagues are overcome with homogeneous musicianship in a triumph which is nevertheless primarily Bruno Walter's. The orchestra wings unstrained in instinctive accord with the soloists customarily members thereof, not unaware of the leader's authority and submissive to his condignly easy control. One of Dr. Walter's best discs, resonantly engineered. If the soloists seem on occasion larger than life the *tutti*s are larger still.

—Walter Hendl, piano; John Corigliano, violin; Leonard Rose, cello. New York Phil-Sym Orch.; Bruno Walter, cond. Col 10-in. ML 2059 34 m \$4.00

### SONATAS FOR PIANO

No. 1, IN F MINOR, OP. 2, No. 1

The only recording of a delectable, tripping essay dating back to Beethoven's young twenties is lightly and smoothly handled by the pianist with a light sound to match, not everywhere free of clatter in the treble.

—Adolph Baller. † *Sonata No. 9* All 10-in. AL 43 14 m \$4.45



more serious and stronger treatment. If the first style satisfies prejudice more than the second, the tonal qualities of the second disc surpass those of the first.

—Adolph Baller. † *Sonata No. 1* All 10-in. AL 43 11 m \$4.45  
—Kurt Appelbaum. † *Sonatas No. 24 and 31* West WL 5090 14 m \$5.95

NO. 11, IN B-FLAT, OP. 22

With this work the sonata, as Beethoven had found it in Haydn, with its tight form and objective content, begins to burst under the impact of an assertive, virile imagination. It is a piece in transition, not well-known, neglected because there are after all thirty-one others. Appelbaum is sturdy and candid in the only recording, which technically has the excellence that Westminster consistently produces from the piano.

—Kurt Appelbaum. † *Sonata No. 14* West. WL 5078 26 m \$5.95

NO. 12, IN A-FLAT, "FUNERAL MARCH", OP. 26

The two imposing names involved in the recordings of this beautiful Sonata — whose *Funeral March on the Death of a Hero* provided a fitting accompaniment to Beethoven's last cortege — can make us wish that lesser names but more sympathetic spirits had been at the keyboard. The Backhaus version, which is the better, is disappointing in an indefinable way, as if the pianist were not at ease with the work. His performance is blunt and almost casual, whereas Giesecking, proud of the peerless agility of his fingers, dandifies the noble work by an exhibition of fussy and inappropriate insistence on precision. His is a spectacular performance which music lovers will heartily dislike. Tonal qualities average about the same, the Backhaus piano betraying some metal at the top, and the Giesecking instrument, just a little obscured along its range.

—Wilhelm Backhaus. † *Sonata No. 21* Lon LLP 265 19 m \$5.95  
—Walter Giesecking. † Grieg: *Lyric Pieces* Col ML 4334 18 m \$5.45

NO. 14 IN C-SHARP MINOR, "MOONLIGHT", OP. 27, NO. 2

It was such a brutalizing experience to compare the seven performances of this, in whole and then in part, that the judgments are put in tabular form. It is really a poetic and dramatic piece of music, but under the spell of the spurious appellation "*Moonlight*" it has been brandished far too often by amateur and professional pianists.

Best recording: Appelbaum. — Generally best-rounded performance: Gulda (with reproduction of a good standard). — Frugoni is satisfactory in a satisfactory recording. Horowitz is listless and showy in below-average recording. Serkin is rather dull. Schioler limps through his own harsh clangor. Jenner is atrociously recorded. — The choice of Appelbaum or Gulda is imposed.

—Kurt Appelbaum. † *Sonata No. 11* West WL 5078 17 m \$5.95  
—Friedrich Gulda. † *Sonata No. 31* Lon LLP 150 16 m \$5.95  
—Orazio Frugoni. † *Sonatas No. 8 and 23* Vox PL 7160 12 m \$5.95  
—Rudolf Serkin. † *Sonata No. 26* Col ML 4432 16 m \$5.45  
—Vladimir Horowitz. † Mozart: *Sonata No. 12* RCA Vic LM 1027 15 m \$5.72  
—Victor Schioler. † Chopin: *Fantasia-Impromptu and Polonaise in A-flat* Mer 10-in. 15037 14 m \$3.85  
—Alexander Jenner. † Chopin Miscellany Rem RLP 199-10 15 m \$2.19

NO. 15, IN D, "PASTORAL", OP. 28

Affectionate and sunny, one of the few of the thirty-two without any conflict at all,

the *Pastoral Sonata* receives a gentle and unassuming exposition from a pianist delightfully subordinate to its good-humored mood. The instrument has been recorded with agreeable competence.

—Gyorgy Sandor. † Chopin Miscellany Col ML 4193 21 m \$5.45

NO. 17, IN D MINOR, "TEMPEST", OP. 31, NO. 2

Two versions have patent merit with that of Mme. Novaes somewhat preferable in the sound of her piano (although the recording is good average in both cases), and especially because of an episodic reticent delicacy very rewarding in the simple outlines of the candid and open-hearted Sonata. The Dohnanyi has some superiority of dynamics without the gentleness of Mme. Novaes's poetry. Her moderation is that of a consummate musician and the overside contains *Sonata No. 26* in most seductive guise. The third version is not in this class.

—Guionar Novaes. † *Sonata No. 26* Vox PL 6270 21 m \$5.95  
—Erno von Dohnanyi. † *Andante Favori* and Haydn: *Variations in F Minor* Rem RLP 199-16 19 m \$2.19  
—Byron Janis. RCA Vic 10-in. LM 50 20 m \$4.67

NO. 18, IN E-FLAT, OP. 31, NO. 3

Inexorable superb pianism, everything proportioned and neat, every note, every chord as if washed, by Artur Rubinstein in a version which can teach much about the piano to students, but which music lovers will find a little disheartening in its intransigence towards the tenderer aspects of an endlessly inventive and temperamentally complex sonata. Piano tone is excellent, barring some hardness of room-acoustics.

—Artur Rubinstein. † *Sonata No. 23* RCA Vic. LM 1071 19 m \$5.72

NO. 21, IN C, "WALDSTEIN", OP. 53

It is assumed that all music lovers know the exhilarating grandeur of the "*Waldstein*". If we remember that we are considering not ideal abstractions but reproduced performances, the three recorded must all be judged good, if in different degree. Backhaus is the most robust and the most flexible. Arrau is swift and deft, but his Rondo is not rhapsodic, which Backhaus's is, and Appelbaum's may seem a little stolid in comparison with Backhaus's Rondo. In compensation, Westminster and Columbia, in that order, offer a consistently truer piano than London, which gives an opulent bass and xylophonic top. Choice is always difficult under such circumstances as this, where the favorite interpretation is tonally weakest. Probably the Appelbaum will give the greatest pleasure to the largest number; and of course the respective couplings could sway a choice.

—Kurt Appelbaum. † *Sonata No. 7* West WL 5044 24 m \$5.95  
—Wilhelm Backhaus. † *Sonata No. 12* Lon LLP 265 21 m \$5.95  
—Claudio Arrau. Col 10-in. ML 2078 25 m \$5.45

NO. 23, IN F MINOR, "APPASSIONATA", OP. 57

Unlike one or two of the most chastised sonatas, the hard rock of this one seems forever resistant. The record preferred here is Frugoni's, a reliable exposition with excellent piano sound. Rubinstein, in another first-class recording, has a too obviously superior pianism, which seems irrelevant and obtrusive. Kitchin, with impressive and powerful sound (not without a little clatter in the treble) plays a neat first movement, but his individual treatment of the finale seems to add nothing to it. The Serkin recording is too harsh for comfort.

—Orazio Frugoni. † *Sonatas No. 8 and 14*

Vox PL 7160 19 m \$5.95  
—Artur Rubinstein. † *Sonata No. 18* RCA Vic LM 1071 19 m \$5.72  
—Alfred Kitchin. † *Sonata No. 8* Rem RLP 199-6 23 m \$2.19  
—Rudolf Serkin. Col ML 2002 22 m \$4.00

NO. 24, IN F-SHARP OP. 78

There is some controversy about this Sonata, the only work dedicated to Therese von Brunswick; proof, according to many critics, that he loved this lady; overwhelming evidence, according to others, that he hated her. Support for the first contention is offered by Mr. Appelbaum, for the second, by Mr. Serkin. The composer himself esteemed the work, but Mr. Serkin has not here the moodal dexterity to meet its caprices on even terms. The Appelbaum performance has more gusto, easier transitions, surer manipulation. Piano tone is good in both editions, with the recent Westminster bettering the old Columbia, particularly in clean retention of bass.

—Kurt Appelbaum. † *Sonatas No. 9 and 31* West WL 5090 10 m \$5.95  
—Rudolf Serkin. † *Trio and Fantasia* Col ML 4128 10 m \$5.45

NO. 25, IN G, OP. 79

Backhaus plays this Sonatina of scurrying, exuberant high spirits to perfection in a piano recording of outstanding realism. Indeed, the disc containing the *Fifth, Sixth* and *Twenty-Fifth Sonatas* is delectable throughout, not only the best Backhaus has done for London, but the best London has done for Backhaus.

—Wilhelm Backhaus. † *Piano Sonatas No. 5 and 6* Lon LLP 383 9 m \$5.95

NO. 26, IN E-FLAT, "FAREWELL, ABSENCE AND RETURN", OP. 81A

Serkin's is one of his best Beethoven efforts; admirably played in every way subject to analysis, but without the ultimate spiritual meaning which Novaes, with less acrobatic digitation, weaves in an unassuming manner. Her environment seems suffused with the shameless sentimental glow the simple diary of this wonderful naive poem calls for. The sound of one is worth the other, with Columbia more seizing but a little brittle. Vox curiously rich in the *fortes* but uncertain in the treble during quieter passages. The Gulda version was not available.

—Guionar Novaes. † *Sonata No. 17* Vox PL 6270 16 m \$5.95  
—Rudolf Serkin. † *Sonata No. 14* Col ML 4432 15 m \$5.45  
—Friedrich Gulda. † *Variations, Op. 35* Lon LLP 322 \$5.95

NO. 28, IN A, OP. 101

The only version we possess of this Sonata, which demands great flexibility of sympathy and fingers, is incompletely convincing in the mild dynamics and prim contrasts offered by Mr. Hambro. The piano tone is fair, not free of rumble.

—Leonid Hambro. † *Sonata No. 7* All AL 85 19 m \$5.45

NO. 29, IN B-FLAT, "HAMMERKLAVIER", OP. 106

The enormous dimensions of this Sonata are not too large for its multitude of aggressive ideas in abrupt apparitions and bold mutations. The title by which we still designate it is a simple acknowledgment of its hugeness, for two others (*Nos. 28 and 31*) receive the same general distinction of nomenclature from the composer. There are two recorded versions, of which that of Horszowski could not be found. The other, a new one by the young pianist Friedrich Gulda, is a startling display of technical mastery and musical understanding. His is the kind of performance we expect from a master after years of specialization in the



last sonatas. The contrasts in which the work abounds are managed by Gulda with an instinctive avoidance of the excess which so often makes the Sonata seem confused and merely noisy; and the great scope of his dynamics is employed only to point the inherent meaning of the music. The engineers have given us a piano tone with a resonant, retentive bass and a rather hard treble. But the disconcerting feature of what should have been a great accomplishment is an incorrigible background rumble throughout.

—Friedrich Gulda. Lon LLP 422 38 m \$5.95  
—Mieczyslaw Horszowski. Vox PL 6750 \$5.95

#### NO. 30, IN E, OP. 109

The *Thirtieth Sonata* suffers from proximity to its overwhelming immediate predecessor and the two supreme achievements to follow. The outlines of those are instantly memorable and they are easily characterized, but this one offers no immediately facile means of identification despite its generally more meditative character.

On records, Backhaus presents the most convincing and memorable pageant of rational sound, with Demus nearly as effective. The Horszowski performance is indefinitely undistinguished and uninteresting. As so often happens, the engineering attributes are not in accord with the musical features. The truest piano tone emerges from the Demus disc with the Horszowski piano just a little inferior and the Backhaus less realistic than either.

—Jorg Demus. † *Sonata No. 31* Rem RLP 199-29 21 m \$2.19  
—Wilhelm Backhaus. † Chopin: *Sonata No. 2* Lon LLP 266 20 m \$5.95  
—Mieczyslaw Horszowski. † *Sonata No. 32* Vox PL 7050 19 m \$5.95

#### NO. 31, IN A-FLAT, OP. 110

The conflicting virtues of the four editions make establishment of a qualitative hierarchy a matter of almost finical measurement. The Sonata, reminiscent thematically of the great Mass, but emotionally distinct and tinged with that noble melancholy which Beethoven put into so many of his later works, is irresistible in a ravishing balance of simplicity and subtlety. In each case here, the engineers have contrived a realistic piano tone, with some sonorous superiority in the Westminster that only a very responsive reproducing apparatus can illustrate. In general, Appelbaum and Demus play in a similar fashion, evocative primarily of the feeling in the work, while Casadesus, crisper, perhaps more pianist than musician here, traces a more facile outline with limber fingers. There is more of Beethoven in the Germans, and the small technical superiority of the Westminster is enough to make the Appelbaum version preferable to the Demus and the Casadesus in that order. The Gulda showing is damaged by an extraordinary background rumble.

—Kurt Appelbaum. † *Sonatas No. 9 and 24* West WL 5090 21 m \$5.95  
—Jorg Demus. † *Sonata No. 30* Rem 199-29 20 m \$2.19  
—Robert Casadesus. † Schumann: *Etudes Symphoniques* Col ML 4388 17 m \$5.45  
—Friedrich Gulda. † *Sonata No. 14* Lon LLP 150 19 m \$5.95

#### NO. 32, IN C MINOR, OP. 111

The last Sonata culminates on the piano Beethoven's long insurrection against despair, an emotion which even in the *Fourteenth Quartet* is never more than a portent to be eventually evicted. Despair belongs to Chopin, swooning comfortably in Paris at the fall of Warsaw; Beethoven's rebellion rejected the concept for himself: he acknowledged melancholy, grief, anxiety, disappointment, hurt, resignation and contem-

plation, but his bluff mind inevitably raged at them all as his stalwart, square body had defied the complexity of ailments that would have killed a weakling twenty years sooner than it killed him. The second *C Minor Sonata* (the "Pathétique" was the first) encompasses all his melancholies and all his rebellions: it requires an ideal performance and naturally never has one. Hearing the Sonata, one can never escape an impatient frustration: it is as personal as music can be and one's judgment is otherwise personal and subjective. Every performance is to a degree a failure, but those who decry the failure do not agree on just where it is demonstrated.

The personal preference here, among the recorded performances, is for Mr. Lateiner's, although the Horszowski wins favor for some sections. All three are blessed with excellent recording, with Mr. Appelbaum's least cherished interpretation slightly truer in sound than the others.

—Jacob Lateiner. † *Andante Favori* Col ML 4335 30 m \$5.45  
—Mieczyslaw Horszowski. † *Sonata No. 30* Vox PL 7050 27 m \$5.95  
—Kurt Appelbaum. † *Sonata No. 2* West WL 5075 27 m \$5.95

### MISCELLANEOUS PIANO

FANTASY FOR PIANO, IN G MINOR, OP. 77  
A showy piece in the manner of an improvisation, upon which some rather striking poetic ideas are wasted. The pianist is more bulldog than poet, and his commendable tenacity is insufficiently flexible to realize more than the externals of the music. The disc is not new, but reproduction of the piano is very good.

—Rudolf Serkin. † *Trio No. 5 and Sonata No. 24* Col ML 4128 9 m

ANDANTE FAVORI FOR PIANO, IN F, G 170  
Dohnanyi instills more fragrance into this romantic interlude, which was the original slow movement of the "Waldstein" Sonata, than Lateiner has done, but the former's attack is also cloudier, and the sound of his piano not quite so realistic as that of the Columbia sound which on this disc would be as good as any if it were a little less hard. The feeling here is that the Lateiner way is too severe for music whose principal attribute is charm. The couplings are what will determine the choice.

—Erno von Dohnanyi. † *Sonata No. 17* and Haydn: *Variations in F Minor* Rem RLP 199-16 8 m \$2.19  
—Jacob Lateiner. † *Sonata No. 32* Col ML 4335 11 m \$5.45

### SONATAS FOR PIANO AND VIOLIN

#### NO. 1, IN D, OP. 12, NO. 1

The Baller-Totenberg playing of a gay and refreshing work is more lyrical, dramatic and imaginative than the other versions, but has been inadequately engineered. Horszowski-Szigeti is nearly as good and the recording is satisfactory. Bay-Heifetz is an essay in the projection of the Heifetz tone with Mr. Bay scrupulous not to obtrude his, in a narrow recording.

—Mieczyslaw Horszowski, Joseph Szigeti. † Schubert: *Sonatina No. 1* Col ML 4133 17 m \$5.45  
—Adolph Baller, Roman Totenberg. † *Violin Sonata No. 10* All AL 2 18 m \$5.45  
—Emanuel Bay, Jascha Heifetz. † *Violin Sonata No. 2* RCA Vic LM 1015 16 m \$5.72

#### NO. 2, IN A, OP. 12, NO. 2

The cold aloofness of the beautiful Heifetz involutions by no means supplies all the requirements of a correct classical style. He is producing patterns. Mr. Bay is a little

more audible than on most of the occasions when he has the honor of being shushed by his fiddling overlord. The Goldstein-Bernstein version was not available.

—Emanuel Bay, Jascha Heifetz. † *Sonata No. 1* RCA Vic LM 1015 16 m \$5.72  
—Ella Goldstein, Joseph Bernstein. † *Sonata No. 4* Conc CHC 34 \$5.45

#### NO. 4, IN A MINOR, OP. 23

The only record was not available.

—Ella Goldstein, Joseph Bernstein. † *Sonata No. 2* Conc CHC 34 \$5.45

#### NO. 5, IN F, "SPRING", OP. 24

The "Spring" Sonata has the most congruent of the titles gratuitously applied to Beethoven's works. This music has no problems, although Spring may have hers: it is an exuberant, inspiring and carefree expression of genial well-being. There are four phonographic versions, and we have learned to be wary of very prominent names in these sonata-duos. We meet again the heartless perfection of Mr. Heifetz's chaste purity of line in an interesting misapplication of his talents which shows him simultaneously at his best and his worst, Mr. Bay murmuring ineffectually the while in futile dependence. Mr. Milstein's growing repute has authorized his capitulation to it after a spirited first movement. Mr. Balsam can be a persuasive pianist, but knowing the place allotted to pianists acting with violin virtuosi he circumspcctly reduces his volume and attempts to outdo the *vedette* only in the tired phrase and the limp rejoinder. It is possible to feel an affection for the spirit animating the Goldstein-Bernstein performance — which does indeed suggest Spring freshness — without being able to commend their disc which has some tonal oddities and a pertinacious rumble. Fortunately Messrs. Baller and Totenberg are present to apply teamwork and imagination, coupled with decent restraint, to a pleasant interpretation revealing sensitive mutability. The violinist demonstrates agreeably that purity of contour need not be divorced from warmth of spirit.

—Adolph Baller, Roman Totenberg. † *Sonata No. 6* All AL 47 20 m \$5.45  
—Artur Balsam, Nathan Milstein. RCA Vic 10-in. LM 134 21 m \$4.67  
—Emanuel Bay, Jascha Heifetz. † Mozart: *Sonata No. 24* RCA Vic LM 1022 17 m \$5.72  
—Ella Goldstein, Joseph Bernstein. Conc CHC 17 20 m \$5.45

#### NO. 6, IN A, OP. 30, NO. 1

A sustained, aspiring Adagio features a Sonata less appealing in its other movements, and this slow song is played with a good long line by Totenberg in the only recording. Elsewhere, however, his violin is dogged by harshness of tone, apparent particularly in the Finale.

—Adolph Baller, Roman Totenberg. † *Sonata No. 5* All AL 47 22 m \$5.45

#### NO. 7, IN C MINOR, OP. 30, NO. 2

A sonata compact with pointed, aggressive, disconcerting and individual ideas more numerous and disparate than in any other of the ten. It is beloved of violinists, for obvious reasons. Unfortunately, of the five editions on records, two were not available, London and Remington. Bay-Heifetz are by now familiar, and the familiarity has bred the ordained product. Zakin-Stern recreate the work with insinuating skill, and ravishing tone from the violinist. Horszowski-Szigeti have collaborated on a disc of perceptive, imaginative, subtle and ever-variable musical mastery — an extraordinary achievement, the greatest delineation of one of these Sonatas on records. It is not new, and its purely sonic appeal — particularly since Szigeti's tone is never his richest endowment — is less than that of Zakin-



## MASTERY

After a century or two we shall have recorded performances of all the Beethoven works without technical flaw (although our children will not renounce their right of sneering at interpretive particularities). We find now, in the catalogue already available, certain discs of outstanding acoustical merit bearing performances of singular understanding. These comprise the following:

- First Concerto (Gieseking; Philharmonia Orchestra). Columbia ML 4307  
 Fourth Concerto (Backhaus; Vienna Philharmonic Orchestra). London LLP 417  
 Triple Concerto (Walter and N. Y. Philharmonic-Symphony Orchestra). Columbia ML 2059  
 Octet, Op. 103 (Oubradous Octet). Vox PL 6130  
 Quartet No. 4 (Budapest Quartet). Columbia ML 4029  
 (Paganini Quartet). RCA Victor LM 1052  
 Quartet No. 6 (Budapest Quartet). Columbia ML 4073  
 Quartet No. 7 (Pascal Quartet). Concert Hall CHS 1205  
 Quartet No. 8 (Pascal Quartet). Concert Hall CHS 1206  
 (Vienna Konzerthaus Quartet). Westminster WL 5098  
 Quartet No. 9 (Pascal Quartet). Concert Hall CHS 1207  
 Quartet No. 15 (Paganini Quartet). RCA Victor LM 1179  
 (Budapest Quartet). Columbia ML 4006  
 Quartet No. 16 (Pascal Quartet). Concert Hall CHS 1212  
 (Paganini Quartet). RCA Victor LM 24  
 Septet. (Pro Musica Chamber Group). Vox PL 6460  
 Serenade, Op. 8. (Fuchs, Fuchs, Rose). Decca DL 7506  
 (Pasquier Trio). Allegro ALG 3031  
 Piano Sonata No. 2 (Appelbaum). Westminster WL 5075  
 Piano Sonatas No. 5, 6 and 25. (Backhaus). London LLP 393  
 Piano Sonata No. 11. (Appelbaum). Westminster WL 5078  
 Piano Sonatas No. 17 and 26. (Novaes). Vox PL 6270  
 Piano-Violin Sonata No. 7. (Horszowski-Szigeti). Columbia ML 2097  
 Piano-Violin Sonata No. 10 (Firkusny-Spivakovsky). Columbia ML 4402  
 Third Symphony. (Toscanini and NBC Orchestra). RCA Victor LM 1042  
 (Walter and N. Y. Philharmonic-Symphony Orchestra). Columbia ML 4228  
 Sixth Symphony. (Klemperer and Vienna Symphony Orchestra). Vox PL 6960  
 Seventh Symphony. (Scherchen and Vienna National Opera Orchestra). Westminster WL 5089  
 Eighth Symphony. (Monteux and San Francisco Symphony Orchestra). RCA Victor LM 43  
 String Trios No. 3 and 4. (Pasquier Trio). Allegro ALG 3015

Stern, but good enough to impose the older disc as the urgent choice.

- Mieczyslaw Horszowski, Joseph Szigeti. Col. 10-in. ML 2097 26 m \$4.00  
 —Alexander Zakin, Isaac Stern. † Mozart: *Concerto No. 3* Col ML 4326 25 m \$5.45  
 —Emanuel Bay, Jascha Heifetz. RCA Vic 10-in. LM 60 24 m \$4.67  
 —Heinrich Berg, Walter Schneiderhan. Rem 10-in. RLP 149-35 \$1.69  
 —Franz Osborn, Max Rostal. Lon LLP 162 \$5.95

NO. 8, IN G, OP. 30, NO. 3  
 Very rewarding in its happy proportions of lyric mood, with each movement logically created by the other two. It is curious that there should be only one version, but the high quality of performance and recording (after sharp downward revision of the treble) does not make the absence of others something to lament.

- Robert Cornman, Tossy Spivakovsky. † Bach: *Unaccompanied Sonata No. 1* Col 10-in. ML 2089 16 m \$4.00

NO. 9, IN A, "KREUTZER", OP. 47  
 The meditative variations separate two prestos of galvanic melodrama and heroic tension unprecedented in violin literature. It has been played so much we forget how exciting it can be. It is much more exciting in the newer Columbia version (Casadesu-Francescatti) than in the old, not necessarily because of the interpretation itself, but because of an outright living reproduction of

sound lacking in the more primitively engineered Serkin-Busch. The French musicians maintain an admirable equality of importance in a work wherein such treatment should be a *sine qua non* but often is not.

- Robert Casadesu, Zino Francescatti. Col ML 4327 32 m \$5.45  
 —Rudolf Serkin, Adolf Busch. Col ML 4007 27 m \$5.45

NO. 10, IN G, OP. 96  
 The Baller-Totenberg disc can be dismissed with acknowledgments to their attentive and informed musicianship. The old Allegro record — dry, over-plangent and spasmodically explosive in the piano — fails to attain today's standards. The Columbia disc, with its diligent and alert partnership featuring poetic phrasing from both and a superb tone from Mr. Spivakovsky — big, broad and suave at once — is competent if not remarkable in its engineering, and one of the very best projections of a Beethoven work in this form on discs. Except for No. 5, this is the tenderest, the least disturbed of the Violin Sonatas.

Music lovers may be disturbed at the sensationally inept coupling of "Violin Favorites", five fat slices of assorted tripe; proof that the larger companies still employ malevolent juvenile delinquents to assist in their editorial work.

- Rudolf Firkusny, Tossy Spivakovsky. † "Favorites" (!) Col ML 4402 24 m \$5.45  
 —Adolph Baller, Roman Totenberg. † *Violin Sonata No. 1* All AL 2 24 m \$5.45

## SONATAS FOR PIANO AND VIOLONCELLO

NO. 1, IN F, OP. 5, NO. 1  
 Mature in conception and inventive in detail, the work deserves a re-recording, for the only version we have is sadly faulted in the engineering of what seems to be a direct statement by the players.

- Adolph Baller, Gabor Rejto. † *Sonata No. 3* All AL 38 20 m \$5.45

NO. 2 IN G MINOR, OP. 5, NO. 2  
 A more entertaining work than its predecessor, and one which offers a fine singing opportunity for cellists. The recorded versions are valuable but have not the same values, that of Graudan-Graudan being an easier, more placid interpretation with a better tone than that of Baller-Rejto wherein we find a soaring *cantabile* and more penetrating expression.

- Adolph Baller, Gabor Rejto. † *Sonata No. 4* All AL 50 20 m \$5.45  
 —Joanna Graudan, Nikolai Graudan. † *Sonata No. 4* Vox PL 6770 22 m \$5.95

NO. 3, IN A, OP. 69  
 The most familiar, and with the profounder No. 4, the greatest of the cello sonatas, manly, fluent and melodious. The dogged recording flaws injure the Spartan projection of Messrs. Baller and Rejto in the only edition.

- Adolph Baller, Gabor Rejto. † *Sonata No. 1* All AL 38 20 m \$5.45

NO. 4, IN C, OP. 102, NO. 1  
 This is a grand work whose subtleties have forbidden it wide popularity except among musicians. It shares with No. 3 the distinction of being the best of Beethoven in the form, but the two cannot be compared, No. 3 being lyrical and open-hearted, No. 4 freer, less compact, spasmodic with intellectual implication and physically far easier to play. The discal situation here is similar to that of the *Second Sonata*: the Graudans have a smoother tonal appeal (which may express a difference in the engineering or the room acoustics) and Baller-Rejto show more independence of imagination. The best version on records is that of Schnabel and Fournier on Victor 45's.

- Adolph Baller, Gabor Rejto. † *Sonata No. 2* All AL 50 14 m \$5.45  
 —Joanna Graudan, Nikolai Gruadan. † *Sonata No. 2* Vox PL 6760 16 m \$5.95

NO. 5, IN D, OP. 102, NO. 2  
 The record listed below was not available.  
 —Adolph Baller, Gabor Rejto. All AL 75

## TRIOS FOR PIANO, VIOLIN AND CELLO

(There is confusion of method in the numbering of Beethoven's piano trios. In a sense, he wrote at least thirteen works for the combination, including a very early work, arrangements, variations and the "Gassenhauer" Trio, Op. 11, which was primarily intended for clarinet rather than violin. The system used here reverts to the old method which ignores the early work in E-flat and the miscellanies, and classifies the "Gassenhauer" separately, leaving six trios listed as such, from Op. 1, No. 1 to Op. 97, the "Archduke".)

NO. 1, IN E-FLAT, OP. 1, NO. 1  
 The record contains an adroitly stylized exposition of a comfortable work which is as close to pure froth as anything from the composer, but it has been rather sadly abused by the recording technicians, for while there is a satisfactory impression of proximity, the tripled tone is dry and spasmodically

faulted beyond correction. We must regard recording like this as already archaic.

—Alma Trio. † "Gassenbauer" Trio All AL 34 25 m \$5.45

**NO. 2, IN G, OP. 1, NO. 2**

This is a surprisingly long work of a construction pretty fragile to sustain its length, but it has an original and breezy finale. There are two discal versions: the Boston was not received. The other is distinguished by a particular charm in Guilet's violin, quick, apprehensive and tenuous; the sonic results are good average.

—Artur Balsam, Daniel Guilet, André Navarra. Conc CHC 27 33 m \$5.45

—Boston Trio. † Trio No. 5 All ALG 3026 \$5.95

**NO. 3, IN C MINOR, OP. 1, NO. 3**

This very early work impressed the composer of two hundred marvels, Franz Joseph Haydn, with the intractable capacity of his young pupil, part of whose first publication it was. No wonder. If we confine ourselves to the Finale alone we hear a capricious and mysterious mingling of nervous urgency and placid acceptance ending in the suppression of the latter, and a portent of intimidating insurrectionary devices checked only from gushing forth in tones by the prudent tentativeness of a great young man not quite ready to burn his bridges.

That the phonograph has produced no more than one edition may be attributed to the comfortable belief inculcated by music teachers before 1920 that Beethoven's work below Op. 53 was inconsequential. The Alma Trio give us their best-recorded work here: like Haydn they seem alive to the implications of a wayward and willful piece whose multiple figures dance from their instruments in capiral fashion. There is some background rumble, but with the overside this is a very inviting disc.

—Alma Trio. † *Adagio, Variations and Rondo*, Op. 121a All AL 40 23 m \$5.45

**NO. 4, IN D, "GEISTER", OP. 70, NO. 1**

The tired old process of invidious comparison has militated against the wonderful "Wraith" Trio because the "Archduke" is wonderfuller. Yet we do not pour away the Chablis because there is Montracher. The variety of mood is exceptional even for the composer, and the mysterious, arresting beauty of the eponymous Largo should signal this immediately as inimitable and superb Beethoven. Serkin *et al.* play with a spirited understanding a little deficient in finesse: rough humors are not necessarily better realized by rough playing, and piano and violin are brittle on occasion in the Columbia recording. However, if the edition is plainly not definitive, it is plainly not bad and proclaims great music honestly. Reproduction, which at first may seem hard in the violin and the upper reaches of the piano, is amenable to satisfactory correction on a good amplifier. The Allegro disc was not available.

—Rudolf Serkin, Adolf Busch, Hermann Busch. † *Fantasia in G Minor and Piano Sonata No. 24* Col ML 4128 22 m \$5.45  
—Boston Trio. All ALG 3026 \$5.95

**NO. 5, IN E-FLAT, OP. 70, NO. 2**

The music is that of the most familiar Beethoven, but eventempered and mellow, its intensity exorcised or temporarily chastened: contemplation without melancholy, virility without roughness, rejoicing without assertion, sport without conflict. Perhaps it is this modification of emphasis that has caused the Trio to be the most neglected of the six. The Almas are at home with the Beethoven trios, particularly in this one. The greenness of their tone seems to proceed from the acoustic properties of the recording room, but the technical quality of sound is

fair as a whole, much better than in *Trio No. 1* and not without real felicity below *mf*.

—Alma Trio. † Haydn: *Trio in G* All AL 4 24 m \$5.45

**NO. 6, IN B-FLAT, "ARCHDUKE", OP. 97**

Only Schubert's second (and last) trio has a worth comparable to Beethoven's last; Schubert's is a dirge and Beethoven's a rapture. The balance of interest among the four movements is simply astonishing: four diversely complete expressions of the unconquerable. There are three phonographic versions of which we may say that two are dissimilarly outstanding. Of these the Victor is rightly considered a phonographic classic, offering a beautifully toned and phrased exhibition by three famous virtuosi in noble musical concert. Remington has a newer disc with a broader, less close-knit expression, in phrasing and intonation like the Victor, but raw in the violin, against Heifetz's silk, and merely smooth in a cello which does not match Feuermann's velvet. The Rubinstein-Heifetz-Feuermann classic is in transfer from 78's about 10 years old: the transfer has been competently effected. We would not call the Remington disc particularly successful as a feat of engineering: there is too much treble and not quite enough bass, although we can rectify these into a semblance of good sound. Thus everything favors the Victor record, except the actual projection of this wonderful Trio. The luscious Rubinstein-Heifetz-Feuermann tone is as if cushioned and restrained: perhaps we would not notice this without comparison with the direct and penetrating emission of the Remington. The reduced cyclic range and the diminished dynamics of the great performance in the older recording subdue the impact of the music, while the inferior performance, in an unremarkable recording of later date, strikes the hearer with a tangible, living vibrancy. The vital quality of the sound itself is compelling and determinative: the ecstatic festival of the "Archduke" Trio is most complete in the version of Messrs. Rapf, Jilka and Schwartzl. It has been engineered by its date into a larger musical experience.

—Kurt Rapf, Alfred Jilka, Peter Schwartzl.

Rem RLP 199-27 34 m \$2.19

—Artur Rubinstein, Jascha Heifetz, Emanuel Feuermann. RCA Vic LCT 1020 35 m \$5.72

—Carnegie Trio. Program 707 34 m \$5.95

**TRIO (MOVEMENT) FOR PIANO, VIOLIN AND VIOLONCELLO, IN B-FLAT, G 154**

Inviting, facile, warm and not very significant, this bit which dates from the year of the great "Archduke" Trio is sympathetically played in a recording of good standard merit.

—Mannes-Gimpel-Silva Trio. † Clara Schumann: *Trio in G Minor* Decca DL 9555 6 m \$5.85

**TRIOS FOR VIOLIN, VIOLA AND CELLO**

**NO. 1, IN E-FLAT, OP. 3**

This long work, whose six movements suggest a divertimento — a suggestion disproved by the serious nature of much of its content — is tentative in structure and experimental in effect. It seems definitely established that the string trios were composed in preparation for a mastery of the string quartet, into which lofty stratum Beethoven did not wish to venture until he felt himself capable of undergoing without shame the inevitable comparison with the great works of Haydn. It is striking how much less diffuse, how much more pointed, each of the first six quartets are, than this Trio; but it has obvious worth as a stepping-stone in the composer's enormous develop-

ment. We are lucky that the only recorded version is by the brothers Pasquier, working with their habitual animated and soaring fraternal cohesion in a domain almost their exclusive own. Some low frequency background interpolations require diminution of bass in a generally well-reproduced sound.

—Pasquier Trio. All ALG 3023 35 m \$5.95

**NO. 2, IN G, OP. 9, NO. 1**

Another of the gracious early works which manages to imply *in petto* the characteristics of the imminent giant. The Pasquiers have recorded all the string trios for Allegro, as they did years ago for Pathé, and it is quite likely that no one will improve on their poised homogeneity and pure stylization. Their sound on this disc has been captured with clear exactitude, but volume should be maintained at a fairly low level lest a rumble intrude.

—Pasquier Trio. † *Serenade, Op. 8* All ALG 3031 25 m \$5.95

**NO. 3, IN D, OP. 9, NO. 2**

The only version is a delectable disc showing to perfection the reciprocal adjustment of the Pasquier brothers in a serene but not thoughtless work which almost seems — particularly after this performance — to be their own property. The engineering is firstclass, barring a trifling excess of reverberation.

—Pasquier Trio. † *String Trio No. 4* All ALG 3015 23 m \$5.95

**NO. 4, IN C MINOR, OP. 9, NO. 4**

This is the most robust and willful of the string trios. It permits the Pasquiers to display their varied sensitivity to style and even undulgence of line and undeviatingly clear enunciation of tone at all intensities. The engineering has the soundness of *Trio No. 3* above, which occupies the reverse of the present performance. From all points of view, an exceptional record.

—Pasquier Trio. † *String Trio No. 3* All ALG 3015 21 m \$5.95

**MISCELLANEOUS TRIOS**

**ADAGIO, VARIATIONS AND RONDO FOR PIANO, VIOLIN AND VIOLONCELLO, IN G, OP. 121A (VARIATIONS ON "ICH BIN DER SCHNEIDER KAKADU")**

Not particularly elaborate in variational intricacies, this work, expressive of Beethoven's growing interest in the variation-form in his later years, is a splendid example of successive and contrary moods created from the barest material. The plaintive and rather somber introduction, itself in anticipation of the contemporaneously-popular tune to be varied, is followed by ten variations and a rondo — really another variation — in which Wenzel Müller's little air assumes preposterous and conflicting guises. It was the last work of the composer for piano and other instruments. It is worth more frequent performance and is luckily now available to music lovers in an able and appreciative exposition by the Alma Trio.

—Alma Trio. † *Trio No. 3* All AL 40 17 m \$5.45

**SERENADE FOR FLUTE, VIOLIN AND VIOLA, IN D, OP. 25**

The least known of Beethoven's voices is that in which he merely diverts the cultivated ears of the century which produced him. The sprightly patter of engaging tunes in this Serenade diverts us too, when we have a chance to hear it. Here it is, in an unpremeditated and expert performance by three musicians of great taste and agility. If we judge by the latest standards the engineers have not served the players too well:



Schneider's violin has a harmonic wraith, and rumble in the background adds a faint fourth instrument to the trio. Common faults, not disastrous, but detractive.

—John Wummer, Alexander Schneider, Milton Katims. Col 10-in. ML 2124 23 m \$4.00

SERENADE FOR VIOLIN, VIOLA AND VIOLONCELLO IN D, OP. 8

At twenty-seven, the mightiest of composers wrote music we can call "delightful", "lightsome", "carefree", etc. Certainly the facile, insinuating tunes of this Serenade deserve such adjectives. It is remarkable that two groups of musicians of such outstanding abilities should have recorded so comparatively slight a work, and yet, in a sense, the diversity of style prevents a true duplication. The Pasquiers are more elegant, a little more nervous; the Fuchs-Rose trio play with a pronouncedly greater warmth, both of tone and of sentiment, as if anticipating the 19th Century, while the Pasquiers remain in its predecessor. Both are ingratiating and justifiable interpretations, but where the Fuchs-Rose have it is in a stronger recording which allows full value to the cello; whereas in the Allegro version sufficient warmth can be supplied to this instrument only by bringing to light an extraneous bass rumble.

—Joseph Fuchs, Lillian Fuchs, Leonard Rose.

Decca 10-in. DL 7506 27 m \$3.85

—Pasquier Trio. † *String Trio No. 2* All ALG 3031 27 m \$5.95

TRIO FOR PIANO, CLARINET (OR VIOLIN) AND VIOLONCELLO IN B-FLAT, ("GASSENHAUER"), OP. 11

One of the most amiable tidbits in the clarinet literature, and most effective when played by that instrument, although Beethoven provided for the substitution of a violin when a clarinet was not available. Thus the Decca disc, embellished by the spirited playing of Reginald Kell, immaculate in style and tone, clearly earns preference over the Allegro, where a violin is used, particularly since the Decca is easily the acoustic superior.

The nickname "Street-Tune" derives from the variations in the finale, written on a catchy air from an opera by Weigl.

—Mieczyslaw Horszowski, Reginald Kell, Frank Miller. † Mozart: *Clarinet Trio in E-flat*, K 498 Decca DL 9543 19 m \$5.85

—Alma Trio. † *Trio No. 1* All AL 34 17 m \$5.45

QUARTETS

NO. 1, IN F, OP. 18, NO. 1

The earliest of the three quartets Beethoven composed in the key of F was not his first quartet, nor is it the least in worth. The six works of *Opus 18* have been deprecated because they are not Rasoumowskys. They are vital, soundly constructed, inventive and occasionally profound, particularly Nos. 4 and 6. The only recording is by the Budapest Quartet at a most impressive moment of its powers, and the sound, a little thin, is nevertheless satisfactory.

—Budapest Quartet. Col ML 4005 25 m \$5.45

NO. 2, IN G, OP. 18, NO. 2

Into this and especially its overside, No. 3, Beethoven put fewer of the qualities we call Beethovenian than into any of the fourteen other *Quartets*. This means that Nos. 2 and 3 are characterized by lyrical profusion, fresh rhythmic liveliness and a lack of personal intonation. This is still the Eighteenth Century, and the Kroll interpretation adheres appropriately to the absolutely straightfor-

ward line practiced by some of its members when they made part of the Coolidge Quartet. There are no idiosyncrasies, no deviations from a pure contour, in their work here, and that is probably the best way to play these quartets, although we should not have been displeased with a greater warmth of tone. — Sonically, the disc has the same quality of virtuous reticence: it is distinct and steady, bright without dazzle, round without a tidal impact, an accurate reflection of the group with little environmental modification.

—Kroll Quartet. † *Quartet No. 3* All AL 78 21 m \$5.45

NO. 3, IN D, OP. 18, NO. 3

The observations on *Quartet No. 2*, above, are equally applicable to the *Third Quartet*.

—Kroll Quartet. † *Quartet No. 2* All AL 78 20 m \$5.45

NO. 4, IN C MINOR, OP. 18, NO. 4

Owners of either of the two recorded editions need feel under no compulsion to exchange it for the other. This is an instantly captivating work without a slow movement and with little of the severe implications of C-Minor Beethoven. There are no important differences in concept or execution between the Paganinis and the Budapesters, nor is one satisfactory accomplishment of engineering markedly superior to the other.

—Budapest Quartet. † Haydn: *Quartet No. 75*

Col ML 4029 22 m \$5.45

—Paganini Quartet † *Quartet No. 5* RCA Vic LM 1052 23 m \$5.72

NO. 5, IN A, OP. 18, NO. 5

The Paganini presentation of the capricious forays and unstable undulations of a breezy quartet is agile and convincing, and the superlative suavity of tone in which the group excels has been well indicated by the engineers except for some violin squeals corrected on the amplifier with difficulty.

—Paganini Quartet. † *Quartet No. 4* RCA Vic LM 1052 22 m \$5.72

NO. 6, IN B-FLAT, OP. 18, NO. 6

In this big, serious Quartet there are faint recurrent anticipations of the sublimities of the last five. The justifiable limitation to a single version here may be a reluctance to challenge the masterful Budapest achievement.

—Budapest Quartet. † *Quartet No. 11* Col ML 4073 23 m \$5.45

NO. 7, IN F, "FIRST RASOUMOWSKY", OP. 59 NO. 1

It is not bold to say that this is the most widely loved of the Beethoven Quartets, with its perfect equipoise of feeling and the formal perfection which frames it. Performance and engineering are capable in both editions with Concert Hall superior in both particulars, for although the Columbia sound is bigger and closer, Concert Hall's is purer. Both styles of recording are well-fitted to the interpretations they reproduce, the broad heartiness of Busch requiring a bold disc for its conveyance, and the remarkable finesse of the Pascals insisting on an untainted re-creation of every light stroke. "Finesse" here implies no reproach: the Pascal finesse is not a mere fastidious intaglio; by no means. But they have a softer *piano* than Busch; they are less free with *fortes* and have more gradations between; their stroke is generally lighter but more cleanly announced. They produce a more ethereal elegy than Busch, and although less muscular they are as athletic.

—Pascal Quartet. Conc CHS 1205 37 m \$5.95

—Busch Quartet. Col ML 4155 40 m \$5.45

NO. 8, IN E MINOR, "SECOND RASOUMOWSKY", OP. 59, NO. 2

In evaluating a concert a critic of music assesses the propriety of the sound emitted from the dictation of a printed score. The critic of records does this with the additional obligation of judging the modifications of sound wrought by the electro-mechanical process of enregistering. Music is an arrangement of sound productive properly of pleasure, and the critic of discs must be concerned primarily with the euphonic pleasure that emerges from the disc, rather than that which the musicians give to a microphone. Thus here we reduce to secondary rank a disc presenting a glowing performance — which is perhaps the better performance, because less personalized — in favor of another whose special kind of performance, perhaps less desirable, has been improved in the process of engineering. We bow to Pascal and acclaim Vienna Konzerthaus, whose natural tone has been warmed, smoothed and enlarged by the caressing acoustics of the hall which, in conferring these benefits, has not submerged detail. (That such suffusion in room-warmth courts peril is sadly evident in *Quartet No. 15*, where it is abominably unsuitable.)

Following their practice, the Viennese Quartet take the pace slower than we generally have it, but gravely effective here; and their unanimous aptitude for the long line has seldom served a masterpiece better. The supernal, awestricken magic of the Adagio contemplating something expressive only in this Adagio is an ultimate perfection in Beethoven's slow movements, and a primary slow movement for incipient quartet lovers to hear.

—Vienna Konzerthaus Quartet. West WL 5098 42 m \$5.95

—Pascal Quartet. Conc CHS 1206 34 m \$5.95

NO. 9, IN C, "THIRD RASOUMOWSKY", OP. 59, NO. 3

Here we have a most illuminating demonstration of diversity in quartet style. Two of these discs, New Music and Italiano, differ quite specially from any interpretation one customarily hears, while the Pascal record is extraordinary in its superb evocation of a more conventional concept. New Music observe Beethoven's metronomic indications with strict exactitude and interesting, disconcerting and enlivening results. (Note the breakneck pace of the closing fugue.) There is an exhilarating sweep to their bows, and the tone as caught by the engineers has a correspondingly invigorating tingle. The *Quartetto Italiano* impose no limitations upon their mutable and sensitive but personal formulation. Their performance is beautifully studied and musically intelligent, with places here and there where their linear and emotional nuances, expressed in phrase, tempo and accent, can hardly be excelled in quarter-playing. The record is wounded by a low frequency background resonance and gratuitous plangency in the violins.

The Pascal Quartet play as music lovers generally hear *Op. 59, No. 3*, except better. They eschew both the dash of the first and the lingering subtlety of the second, of the rival versions, but proclaim their devotion to a standard reading with an even curvilinear address which hides the precise organization behind it. This is certainly the edition most music lovers will prefer, particularly since its engineering values are the most impressive.

—Pascal Quartet. Conc CHS 1207 31 m \$5.95

—New Music Quartet. † *Quartet after Sonata No. 9* Bar BRS 909 26 m \$5.95

—*Quartetto Italiano*. † Schubert: *Quartett-satz* Lon LLP 321 31 m \$5.95



NO. 10, IN E-FLAT, "HARP", OP. 74  
Of the sixteen Quartets, this is the least known in spite of the noble even-numbered movements. It will not conquer the musical public on the basis of the only performance on discs, wherein everyone has a miserable time, with woody tone (probably inflicted by local acoustics, since the engineering seems capable enough), disjointed utterance and flexible pitch.  
—Winterthur Quartet. Conc CHC 42 32 m \$5.45

NO. 11, IN F MINOR, "SERIOUS", OP. 95  
The title is Beethoven's own and is repeated in the indication for the Scherzo, whose searching impatience suggests the content of the five quartets to follow much later. Like them it has not the striking and immediate seductiveness of Nos. 1, 4, 6, 7 and 8; like them, its challenging appeal is more forceful at the fiftieth than at the fifth hearing. There is one version, of compulsive intensity and elevation, which we could think of as final had it been transmitted by the engineering of a later period. Tone is somewhat dry, and a proper adjustment of both treble and bass is not easily obtained.  
—Budapest Quartet. † Quartet No. 6 Col ML 4073 21 m \$5.45  
—Griller Quartet. Lon 10-in. LPS 107 \$4.95 Not available

NO. 12, IN E-FLAT, OP. 127  
The first of the last five quartets has the general relaxation of form that characterizes the others, but its long history of the diverse essences of contentment is in sharp variance with the fevered exhilaration of mood that dominates the remaining four. It is the least esteemed of the five, perhaps because hearers are more deeply moved by the narration of conflict than of someone else's happiness. The Pascal performance is one of intelligence, blended finesse, supple and subtle; but it can be properly appreciated only if the outcry of the violins is tamed to forbearance through a resourceful amplifier.  
—Pascal Quartet. Conc CHS 1209 36 m \$5.95

NO. 13 IN B-FLAT, OP. 130  
The musical logic of Beethoven's passionate sentiency is so chaste — and so universal in its acceptance by men as their own deep feeling — that it instills a contagious human sympathy among listeners, instinctively aware of its universality and thus not ashamed of the revelation of their hopes and hurts. The *Thirteenth Quartet* has no such fever as the battle against loneliness in the *Fourteenth* nor such a maintenance of intensity as the miraculous gratitude of the *A Minor*; but in its human tergiversations between depression and glory, regret and rejoicing, it is a marvelously strong explanation and expiation of weak humanity. The interlacement of contradictions in the wonderful mockery of the finale — successively gay, rueful, ironical and resentful — is the Human Comedy flippant and frightening. This finale, substituted for the *Great Fugue* considered over-long, was the last music Beethoven wrote.

In all their Beethoven discs the Pascal Quartet have been able to project the complexity of sentiment without damage to the musical structure and with a tasteful avoidance of that excess which in the last quartets can pass, and has passed, for emotional profundity. Sonically, their records present few difficulties, the major one being an unpleasant shrillness of violins which can be successfully corrected by a flexible amplifier.  
—Pascal Quartet. Conc CHS 1210 38 m \$5.95

NO. 14, IN C-SHARP MINOR, OP. 131  
The consummation of quartet writing in two consummate performances. The Buda-

pest version is of the Budapest Quartet of 1940, and their tonal appeal surpasses that of the Pascals. The intellectual grasp of the two organizations seems equally thorough and penetrating. The Pascals are more telling in the quick sections, the Budapesters in the rending slow movements. Between two such interpretations a choice can carry no real conviction: the writer fluctuates between them. More recent engineering permits the Pascal edition to be played satisfactorily on most phonographs; the Budapest version requires extraordinary downward adjustment of the treble to bring out its potentialities, and some dryness will adhere to the cello under any circumstances. The Pascal will sound better except to the owners of highest fidelity apparatus, or to those who contentedly possess the lowest fidelity. In the first case one can rectify and in the second one does not hear what needs rectification.

—Budapest Quartet. Col ML 4106 36 m \$5.45  
—Pascal Quartet. Conc CHS 1211 38 m \$5.95

NO. 15, IN A MINOR, OP. 132  
The poignant rejoicing of the *15th Quartet*, narrating the humble gratitude of a man vastly proud, and punctuated as it is with asseverations of this familiar pride, is at present displacing the cosmic rebellions of the *14th* in the affections of the advanced musical public. It is patently easier to grasp, and it enjoys four LP recordings, of which only the latest, by the Vienna Konzerthaus Quartet, is not a convincing exposition of its transcendental tribulations. In this version the huge tone which embellishes the Vienna performance of the *Second Rasoumowsky* is destructive to contemplation, sentimentalizes the nobility of the communication and is more suited to a political convention than to a confessional. Of the others, Budapest is infinitely varied, tender, never merely big and flabby, in pure exultation where Vienna only whoops. This is the Budapest Quartet of circa 1940, with a most subtle susception to this epic narrative. The recording is surprisingly good for its age: it is a little thin in the violins and there is some blur to the cello, but a good compensator produces satisfactory results. Paganini is excellent, but not so penetratingly varied; Griller is commendable, but less so.  
—Budapest Quartet. Col ML 4006 40 m \$5.45  
—Paganini Quartet. RCA Vic LM 1179 43 m \$5.72  
—Griller Quartet. Lon LLP 318 40 m \$5.95  
—Vienna Konzerthaus Quartet. West WL 5104 46 m \$5.95

NO. 16, IN F, OP. 135  
Beethoven's last complete quartet, eueptic, tuneful, forcefully accented and beguiling with corollary anecdotes, has the pleasant ambiguity of those things in coalescence with a strait philosophical synopsis. So it is suited to everybody with ears, and in its dual phonographic representation neither aspect is ignored, although the Paganinis with their silvered tone stipulate the easier facet rather than the severer statement forwarded by the Pascals. Neither recording has any conspicuous faults and choice must rest with the chooser's temperament. This writer prefers Pascal.  
—Pascal Quartet. † *Great Fugue* Conc CHS 1212 22 m \$5.95  
—Paganini Quartet. RCA Vic 10-in. LM 24 23 m \$5.72

QUARTET-ARRANGEMENT (BY THE COMPOSER) OF THE NINTH PIANO SONATA.  
OP. 14, NO. 1  
Beethoven, in view of the terrifying achievements of Haydn and Mozart, was circumspect in publishing quartets. There is some evidence that this work, published in its quartet form in 1802, after the quartets of

*Op. 18*, and whose themes we know better when enclosed in the *Ninth Sonata*, actually preceded the Sonata in concept, and served as a dry run in quartet writing. It is less mature than four of the six in *Op. 18*, but has very agreeable turns of freshness and invention. Elan and taste modified by haste characterize the performance, which has been engraved without major fault.  
—New Music Quartet. † Quartet No. 9 Bar BRs 909 14 m \$5.95

GREAT FUGUE, IN B-FLAT, OP. 133  
This is a harsh and repellent music which Beethoven's contemporaries seem not to have tried to understand. After a number of hearings it begins to make light, a dazzling centrifugal light of unequal force at different points of its circumference, briefly illumining fragments of man's sentiency. We are exacerbated and enthralled in trying to identify these fragments.

The original finale of the *Thirteenth Quartet*, the *Great Fugue* was superseded at the suggestion of Beethoven's friends who thought it too long and too difficult. Its lusty tenor permits the multiplication of its parts, as in the Litschauer version, with some gain in hardness and some loss of detail. The noble Pascal version implies a greater variety of drama, the orchestral version a more overriding force, especially in a leadership of such resolute energy as that which Litschauer gives to his strings. The tonal quality is effective in both cases, but in the Vanguard version only after decisive reduction of the treble.

—Pascal Quartet. † Quartet No. 16 Conc CHS 1212 16 m \$5.95  
—Vienna Chamber Orch.; Franz Litschauer, cond. † Purcell: *Chaconne* and *Three Fantasies* Van VRS 419 15 m \$5.95

#### MISCELLANEOUS CHAMBER

QUINTET FOR PIANO AND WIND INSTRUMENTS, IN E-FLAT, OP. 16  
We are more familiar with this slight but diverting early work (with flicks of the coming "Emperor" Concerto in each movement) in Beethoven's transcription for piano quartet. It is preferable in the original form if only because of the varying color. The only version on discs is played and recorded with comfortable ease.  
—Messrs. Frugoni, Baudo, Druart, Coursier and Allard. † 32 *Variations* Vox PL 6040 24 m \$5.95

RONDINO FOR OBOES, CLARINETS, BASSOONS AND HORNS IN PAIRS, IN E-FLAT, G 146  
The frail appeal of this orderly and rather sad little piece from the composer's youth is given out with a chaste delicacy by the players in a recording of equivalent merit except for some incipient buzzing from the dangerous horns.  
—Members of the Little Orch Society. † *Octet in E-flat* EMS EMS 1 7 m \$5.95

SEXTET FOR TWO CLARINETS, TWO BASSOONS AND TWO HORNS IN E-FLAT. OP. 71  
A tenuous and elementary rhythmic charm issues from the latter two of the four movements in a very early work without distinctive melodic or harmonic character, best employed as background music. The healthy bloom of the only recording restates a smooth and sober performance.  
—Wing Group of the Vienna Phil Orch. † *Octet, Op. 103* West WL 50-3 21 m \$5.95

SEPTET FOR VIOLIN, VIOLA, VIOLONCELLO, BASS, CLARINET, BASSOON AND HORN, IN E-FLAT, OP. 20  
Beethoven's greatest early success was attained with this melodious divertimento; a



success which enraged the composer, as it persisted in maintaining the Septet in conspicuous popular esteem long after its author had written six great symphonies. We have no chagrin to vent on a little masterpiece of graceful appeal; and one of the recorded versions — that of Pro Musica — with a nervous refinement of style quite captivating on a disc of precious tonal blend, can re-create for us the pleasure felt by the contemporaries of Beethoven's youth. The Jilka record injects some subtleties into their small-scaled performance which are neither unintelligent nor unrewarding, but they are not so deft as their rivals and suffer from engineering of a lower order.

—Pro Musica Chamber Group. Vox PL 6460 33 m \$5.95  
 —Jilka Septet. Rem RLP 199-22 39 m \$2.19

OCTET FOR OBOES, CLARINETS, BASSOONS AND HORNS IN PAIRS, IN E-FLAT, OP. 103 That there should be three editions of this tenuous entertainment — which, despite its number, is a very early work — is a minor phonographic puzzle and no doubt a minor headache to the three manufacturers. A finical discrimination does not seem necessary: the French group on Vox plays with a pert flavor absent from the others, of which the American group on EMS is rather sober. Nor is there any strong basis for choice in the respective tonal values. All are good, Vox being the throatiest and biggest in sound, EMS the brightest and the early Westminster a little thinner and a little darker.

—Octet directed by Fernand Oubradous. † Mozart: *A Musical Joke* Vox PL 6130 23 m \$5.95  
 —Octet from the Little Orch Society directed by Thomas Scherman. † *Rondino for Wind Instruments* EMS EMS 1 22 m \$5.95  
 —Octet from the Vienna Phil Orch. † *Sextet, Op. 71* West WL 50-3 22 m \$5.95

#### VARIATIONS

FOR PIANO, IN C MINOR, G 191 Resourceful and intelligent exercises with an interest transcending that of mere technique, these Variations, in the course of a mid-1920 revolt against romanticism, were represented by the *avant-garde* of the period as Beethoven's greatest contribution to music, with a minuet in G and a few pieces he did not write. Mr. Frugoni takes a less serious view of their importance and his pleasant pianism gratifies us no little in a competent recording.

—Orazio Frugoni. † *Quintet, Op. 16* Vox PL 6040 10 m \$5.95

FOR PIANO, IN E-FLAT, "EROICA", OR "PROMETHEUS", OP. 35 The only recorded version was not available.  
 —Friedrich Gulda. † *Sonata No. 26* Lon LLP 322 \$5.95

FOR PIANO, IN F MINOR, OP. 34 The only record of this was damaged to an unplayable condition.  
 —Leonard Shure. † *Diabelli Variations 2* Vox PL 6360 \$11.90

FOR PIANO, ON A WALTZ BY DIABELLI, OP. 120 Everyone speaks of this longest set of variations with an awe proportioned to their size. They paint a vast panorama of temperament, exploit every device of the keyboard, puzzle many pianists, and in the hands of puzzled pianists, puzzle hearers. The three record sides containing the Shure interpretation are obviously a labor of considered devotion. He had settled his prob-

lems in practice before committing his solution to public distribution. Like the 32nd *Sonata* this work can have no ideal performance except inwardly. There are scores of places where exception can be taken to almost any delivery. There are, in the recorded version, no *gaucheries*, and there is a skillful adaptability to the violent alterations of manner and spirit demanded.

The piano sound is not easy to classify. After silence, or hearing one of the most modern discs, its note seems curiously muffled and unvibrant but not otherwise distorted. The listening ear forgets quickly and the inert sound establishes its own normality quickly. If a modern piano disc is not played in the same hour, the sound here will serve.

—Leonard Shure. † *Variations in F, Op. 34 2* Vox PL 6360 53 m \$11.90

FOR PIANO AND VIOLONCELLO, ON "BEI MÄNNERN", G 158 Early and easy, amusing and digestible, done with grace and verve, clearly stated in the neat Vox recording. (The Allegro disc was not available).

—Joanna Graudan, Nikolai Graudan. † *Variations on "See the Conquering Hero"* and *Variations on "Ein Mädchen oder Weibchen"* Vox PL 6150 10 m \$5.95  
 —Adolph Baller, Gabor Rejto. † *Variations on "See the Conquering Hero"*, *Variations on "Mädchen oder Weibchen"* and *Sonata No. 5 Allegro* AL 75 \$5.45

FOR PIANO AND VIOLONCELLO, ON "EIN MÄDCHEN ODER WEIBCHEN", OP. 66 The description applied to the *Variations on "Bei Männern"* is as appropriately applicable to this set played by the same pair and occupying the same disc.

—Joanna Graudan, Nikolai Graudan. † *Variations on "See the Conquering Hero and Variations on Bei Männern"* Vox PL 6150 10 m \$5.95  
 —Adolph Baller and Gabor Rejto. † *Sonata No. 5, Variations on "Bei Männern"* and *Variations on "See the Conquering Hero"* All AL 75 \$5.45

FOR PIANO AND VIOLONCELLO, ON "SEE THE CONQUERING HERO", G 157 In a spirited set of twelve by the composer who became the greatest master of variations, his admiration for Handel, as manly a composer as himself, is expressed in un-Handelian fashion in the engaging version here played with warm-hearted and appealing candor by piano and cello in gratifying musical equality. The sound is of excellent texture.

—Joanna Graudan, Nikolai Graudan. † *Variations on "Ein Mädchen oder Weibchen"* and *Variations on "Bei Männern"* Vox PL 6150 12 m \$5.95  
 —Adolph Baller and Gabor Rejto. † *Sonata No. 5, Variations on "Mädchen oder Weibchen"* and *Variations on "Bei Männern"* All AL 75 \$5.45

#### VOCAL AND CHORAL

MASS IN C, OP. 86 The bold, original, dramatic and beautiful *Mass in C* has been disdained in concert performance because Beethoven wrote a bolder, more original and more dramatic *Mass in D*. The devout emotion of the earlier work does not overflow the limits of the Roman service: the chancel resounds with a lovely reassurance, the walls are not in danger of tumbling down. — The smaller forces used in the smaller *Mass* are easier to enregister, and the sound is consistently gracious and expansive in the recording by Vox (who give us also the *Missa Solemnis*) of a deliberate but sensuous and affecting

enactment by Prof. Moralt and his conditioned minions.

—Gisela Rathauscher (s), Elfride Hofstaetter (a), Alfred Planayavsky (t), Walter Berry (bs). Akademie Chamber Choir, Vienna, and Vienna Sym Orch.; Rudolf Moralt, cond. Vox PL 6300 51 m \$5.95

MISSA SOLEMNIS IN D, OP. 123 The cosmic urgency of Beethoven's pantheistic devotion exploding through the sanctified ritual of the mass confirms the intense struggle of his later years, and affirms his mystic conviction that God, Man and the Universe coalesce through struggle, sorrow and virtue. In the only recording we have, Otto Klemperer exploits the fervor of that concept to the full, with a perceptive and experienced management of every phase of its complex sentiment. Soloists, chorus and orchestra are competent, with the orchestra most apparently so, technical difficulties contingent on recording large choral forces having produced opacity in the vocal mass and inequalities in the weights of the various groups, while the orchestra is clearer and in proportion. The solo quartet is afflicted intermittently, but luckily in small degree, with microphonic "wing-beating". We can say in fairness that the discs are a middling tonal representation of an eloquent statement of a mighty and universal hymn.

—Ilona Steingruber (s), Else Schuerhoff (a), Ernst Majkut (t), Otto Weiner (bs). Akademie Chorus, Vienna, and Vienna Sym Orch.; Otto Klemperer, cond. 2 Vox PL 6990 1 hr. 12 m \$12.50

CANTATA ON THE DEATH OF JOSEPH II, G 196A

Haydn heard this at Bonn, and discerned some genius in the 20-year-old composer. So can we; and the resurrection of this early success, which Beethoven did not publish, is by no means a disservice to his fame. The boy is already manly: the work is strong and unambiguous with dark undertones inchoate with a more cosmic grief he was to express in his maturity. — The Vox disc exhibits a serious Clemens Krauss at his best, dramatic but unvehement, responsive but not dominating. Poell is very good; Miss Steingruber has good moments, and the choir and orchestra have plainly been well rehearsed. Sound is good: the record is not free of the distortions we expect from choral groups, but has not much of the fault, and in compensation there are frequent electrifying deliveries by the united forces in brilliant clarity.

—Ilona Steingruber (s), Alfred Poell (bne). Vienna Sym Orch. and Akademie Choir; Clemens Krauss, cond. Vox PL 6820 43 m \$5.95

FIDELIO, OP. 72 (SEE ALSO LEONORA) One of the perplexities of musical history is the difficulty of inducing Anglo-Saxon audiences to hear this monument among operas. The naive and very moral story is not much of a dramatic creation, but in Beethoven's absolute and invincible sincerity a small melodrama becomes a mighty epic of the strong emotions: hate, fear, love and triumph laced together and transfigured by the dominant theme of loyalty. Leonora, who is called Fidelio, is absolutely paramount in this opera, as Tristan and Isolde are in Wagner's music-drama. If the soprano to whom the part is assigned is not of a quality approaching that of a Lehmann or a Flagstad, the performance fails. The soprano in the recorded version listed below has not this requisite quality, nor does the conductor extract more than a pale effigy of the potency of the music. Listen-

ing to the discs was painful, and was discontinued long before the end.

—Margarete Bäumer (s), Heinz Sauerbaum (t), Manfred Hübner (bnc), Ursula Engert (s), and other singers. Chorus and Orch of the Mid-German Radio, Leipzig; Gerhard Pflueger, cond. 3 Oceanic OCLP 301 \$18.50 (Extracts from this album are on Oceanic OCS 21).

#### GELLERT LEIDER, OP. 48

Several of the six devotional songs which Beethoven set to Gellert's words are well known, *Die Himmel Rühmen*, No. 4, and the *Busslied*, No. 6, especially. It is good to have them on a single side, and it is good to report that Mr. Herbert is a baritone who invariably seems to know the meaning of his text. The accompaniment is correctly outspoken.

—Ralph Herbert, baritone; Frederic Waldman, piano. † *Four Songs* All 10-in. AL 88 13 m \$4.45

#### SCOTCH AND IRISH SONGS

Beethoven supplied the harmonies and accompaniments by piano trio for more than a hundred traditional Scotch, Irish and Welsh melodies. They are mature efforts and the accompanying trio, very characteristically Beethoven, emphatically increases their appeal. Helen Traubel overwhelms five of the Scotch and five of the Irish songs in an ill-conceived project which gives these tunes, for the most part wispy reflections appropriate to nostalgic barflies, to Brünnhilde — and a Brünnhilde with a buttery enunciation of the highly special language of music coaches, neither Scotch nor Irish, nor American nor English. The pity here is that the splendid accompaniments are wasted on such misdirected efforts and a clear recording, as well. Contrarily, the whining tenor of Richard Dyer-Bennet is exactly appropriate to his selection of Scotch songs (only two of which are common to the two editions); and his intelligent projections could have claimed a definitive status for the disc if the recording had been better. — *Blysbe and Glad*, sung by Mr. Dyer-Bennet, becomes the principal theme of the finale of the last violin sonata, and was less majestically transcribed, later, as the *Hop Scotch Polka*.

—Helen Traubel, soprano; Coenraad van Bos, piano; John Pennington, violin; C. Warwick-Evans, cello. Col ML 2085 30 m \$4.00

—Richard Dyer-Bennet, tenor; Ignace Strasfogel, piano; Stefan Frenkel, violin; Jascha Bernstein, cello. Conc CHC 13 30 m \$5.45

#### AN DIE FERNE GELIEBTE, OP. 98

Our composer wrote little for the voice except canons, and all singers go into choler when the difficulties of the vocal parts in the *Ninth Symphony* and the *Missa Solemnis* are

mentioned. But the Song Cycle *To the Faraway Beloved* offers no particular vocal difficulties, is romantically appealing, is formed with a musical address that makes any of the six songs dependent on the others, and is very seldom sung. Mr. Horne is agreeably unassuming and has not misunderstood the nature of this work, moving smoothly to the ordained climax.

—William Horne, tenor; Franz Rupp, piano. † Brahms: *Six Songs* Mer 10-in. MG 15016 13 m \$3.85

#### ELEGIAC SONG, OP. 118

This lament for the death of a friend suggests a fragment of one of the last quartets except in its decorous poise and rounded form. Performance and recording are both of the first class.

—The Randolph Singers with the Guilet Quartet. † Haydn: *Seven Last Words* 2 Conc CHS 1084 6 m \$11.90

SONGS (EXCEPT THOSE IN FORMAL COLLECTIONS): *Adelaide*, Op. 46; *Mailed*, Op. 52, No. 4; *Trocknet Nicht*, Op. 83, No. 1; *Herz mein Herz*, Op. 75, No. 2.

These occupy the reverse of the *Gellert Lieder*. They are among the best of Beethoven's songs and were apparently chosen to show the composer's variety of expression and the baritone's ability to recreate them. Intelligent singing and energetic accompaniment characterize the disc.

—Ralph Herbert, baritone; Frederic Waldman, piano. † *Gellert Lieder* All 10-in. AL 88 6, 2, 3 and 4 m respectively. \$4.45

#### MISCELLANEOUS

SONATA FOR PIANO AND HORN, IN F, OP. 17  
In the only recording, a trombone is used in place of the horn. We do not need to discuss the acceptability of this kind of substitution now, for the music is otherwise damaged, the trombonist having assessed the boon of his trumpet-bright tones so highly as to relegate the piano to a pitiable obscurity, lest hearers mistake the protagonist. In admiring Mr. Schuman's instrument — a little disfigured by some blasts in the recording — no one will applaud this kind of musicianship.

—Sam Raphling, piano; Davis Schuman, trombone. † *Equali for 4 Trombones* and a short miscellany Ren X-31 16 m \$5.95

GESCHOEPFE DES PROMETHEUS, OP. 43  
Public performances vouchsafe the Overture only, a heedless impoverishment of our restricted orchestral repertory, for Beethoven's only full-length ballet bares a protean design of muscular rococo splendor woven by rough hands already impatient for a more abundant tapestry. Goehr's is the only complete recording ever made, and his

lively appreciation of the score is as obvious as the incomplete realization of his intentions by an orchestra not disciplined to unity, and by an engineering tolerance of defective balance. This is a pity, since the basic sound, although a little harsh, is clear and timbre-true. The music itself is only slightly wounded, the conductor being sound. There is a good degree of pleasure in the discs for those to whom polish is not a *sine qua non*.

The Mengelberg excerpts have polish in one of Capitol's sturdy, resonant transfers from 78's. The recorded Finale is one of the four places where Beethoven used the theme of the last movement of the *Eroica Symphony*.

—Complete: Winterthur Sym Orch.; Walter Goehr, cond. Conc CHS 1063 1 hr 12 m \$11.90

—Overture and Finale only: Concertgebouw Orch., Amsterdam; Willem Mengelberg, cond. Cap (part of a miscellany) P 8078 9 m \$4.98

#### EQUALI FOR FOUR TROMBONES

Solemn and indefinitely moving sequence of chords played in beautiful tone, not much disturbed by some wisps of blasting.

—Schuman Brass Choir. † *Sonata for Piano and Horn* and a short miscellany Ren X 31 6 m \$5.95

#### FANTASY FOR PIANO, ORCHESTRA AND CHORUS, IN C MINOR, OP. 80

The chorus, anticipatory of the finale of the *Ninth Symphony*, is used here for only four minutes, which is no doubt the cause of the *Choral Fantasy's* infrequent performances. The work is not to be disdained: it is a miniature epitome of Beethoven's method and manner, the impatient, contemplative and rebellious whims of the keyboard demanding relief and reassurance from the orchestra whose response culminates in a typically brave and simple *maestoso* before appealing to the voices as the only true trumpets for the exuberance of true joy. The one recording communicates with singularly intimate effect this pristine message, thanks most largely to Dr. Krauss's serene management of his forces and the nicely balanced and unlabored recording. An admirable disc.

—Freidrich Wuehrer, piano. Vienna Sym Orch and Akademie Choir; Clemens Krauss, cond. † Schubert: *Gesang der Geister über den Wassern* Vox PL 6480 20 m \$5.95

#### RUINS OF ATHENS: *Turkish March* only.

A stimulating tramp with a panoply of brass and percussion enthusiastically guided in a shining recording, the only one.

—Concertgebouw, Amsterdam; Willem Mengelberg, cond. Cap (as part of a miscellany) P 8078 3 m \$4.98

## Music in Hawaii

By Carl von Wehrden

In an endeavor to secure accurate information as to the status of live music in Hawaii, I interviewed Mr. George Barati, conductor of the Honolulu Symphony Orchestra. He related that, although the Honolulu Symphony is 51 years old, this is the first year that the concerts have been broadcast in full. The orchestra consists of approximately eighty-five musicians, part of whom are professional and the remainder, amateur. They encompass all races and include some members of the Military. The schedule of

the annual activities of the orchestra, in brief, is as follows:

Six 2-hour concerts held on Tuesdays (broadcast in full)

Six 2-hour concerts held on Sundays (called the Family Hour and roughly the same as those on Tuesdays)

Four "Pops" concerts

Three pairs of children's concerts — ½ hr. (on tape)

Two or three Little Symphonies, chamber in character

Twenty-one demonstrations of concert music at schools, done by 6 to 8 musicians.

Mr. Barati also has a symphonic record program, with commentary by him, each Sunday evening.

The availability of audio equipment is

somewhat limited. The stock of any one wholesaler is rather limited and deliveries from the mainland are slow. Better service can generally be secured by direct mail from supply houses on the mainland. No dealer here has equipment set up for demonstration purposes, although one is beginning to recognize the potentials of the audio trade.

The large music stores have an excellent selection and supply of records. Tempo records are now available and soon tape (we hope). We now have only one recording company, 49th State. Formerly there were two more, Aku and Bell, some pressings of which are still available. The Library of Hawaii has approximately 3,000

*Continued on page 56*



# RECORDS

## in REVIEW

C. G. BURKE • JOHN CONLY

ALFRED FRANKENSTEIN • J. F. INDCOX

### NOTES ABOUT

#### RECORD REVIEWS

To facilitate reference to this section, all classical LP releases are arranged alphabetically by composer. Miscellaneous collections, not normally identified by composer, are collected at the end of the record review section.

Where two or more composers appear on one record, the reviews are cross-referenced but not repeated.

Playing time is reported for each release and, unless otherwise indicated, is the total for both sides of a single disc or, in the case of albums, is the total for all records in the set.

The Editor welcomes suggestions for improving the Records in Review section of HIGH-FIDELITY.

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BACH, J. C.: *Sonatas for Piano, Op. 5, Nos. 5 and 6; Op. 17, No. 6*  
Margaret Tolson. WCFM 12-in. LP 7-11, 12 and 19 mins. \$5.95.

The London Bach, youngest of Johann Sebastian's sons, was the most elegant and for a long time the most famous of the incredible tribe. He was imitated by Mozart and Haydn; he was obviously a man of stature. Two of the three sonatas here do not verify that stature, but the *Op. 17, No. 6* conveys an impression of it — mature, dashing and difficult if superficial. Miss Tolson plays with a musicianly effacement and the sound of the piano is small but very real. A modest disc of no great importance, but increasingly ingratiating. — C. G. B.

BACH, J. S.: *Magnificat in D*  
Marta Schilling (s), Gertrude Pitzinger (a), Heinz Marten (t), Gerhard Groschel (bs); Rudolf Lamy Choral Society; Ansbach Festival Orch.; Ferdinand Leitner, cond. Decca 12-in. DL 9557. 33 mins. \$5.85.

A revelation of style and skill, a performance distinct in all its elements. A dramatic éclat perhaps hostile to performance in

churches expands from the coordinated understanding of these experts. It not only displaces the previous version, but will resist displacement by subsequent efforts for a long time. A vivid, compelling record. — C. G. B.

BACH, J. S.: *Passion According to St. John* (Complete)  
Blake Stern (t), Mack Harrell (bne), Daniel Slick (bs), Adele Addison (s), Blanche Thebom (ms), other singers and instrumental soloists. Shaw Chorale, Collegiate Chorale, and RCA Victor Orch.; Robert Shaw, cond. RCA Victor three 12-in. LM 6103. 2 hrs. 14 mins. \$17.50.

The merits of this production are patent and many. The solo voices are well chosen, the choir is scrupulously trained. Archaic instruments have been assembled to re-create the peculiar coloring woven through Bach's polyphonic devotion. The engineering as such is without fault. Since the work is devotional and should be comprehensible, a new English text has been contrived by Mr. Shaw himself. The enunciation of the soloists is entirely distinct.

But —

The disposition of the chorus or the acoustical properties of the room has diffused the mellow choral sound into unintelligibility, and the sopranos are predominant most of the time. In the large chorales, the orchestra is suffocated under the vocal weight, and the intentional delicate reduction of instrumental sound providing accompaniment, here and there poignantly telling, becomes worrisome and precious. The translation is delicately spattered with the kind of misplaced accentuation we look for on television and the radio.

Thus we can enjoy this edition for its many isolated sections of great beauty, and esteem the enterprise which decreed an intelligent marshalling of forces. It is too bad that a ruthless monitor did not compel a closer approximation to perfection. Perhaps symbolic of the confused result is some confusion of nomenclature: on the cover of the album and on the labels Miss Thebom is a mezzo-soprano; on the cover of the booklet she is a contralto; a designation shortened in the text — lest things become too clean-cut and stabilized — to alto. — C. G. B.

BACH, J. S.: *Six Sonatas for Flute and Harpsichord*

Julius Baker, flute; Sylvia Marlowe, harpsichord. Decca two 12-in. DX 113. 80 mins.

"Elegant" is the word for this release. It is elegantly performed, elegantly recorded, elegantly annotated by Irving Kolodin, and elegantly packaged to boot. A recording that is as authoritative as it is complete. — A. F.

BARBER, SAMUEL: *Sonata for Cello and Piano, Op. 6*  
See THOMPSON

BARTOK: *Music for Strings, Percussion and Celesta*

Los Angeles Chamber Symphony Orch.; Harold Byrns, cond. Capitol 10-in. L 8048. 29 mins. \$3.98

Chicago Symphony Orch.; Rafael Kubelik, cond. Mercury 12-in. MG 50001. 30 mins. \$5.95.

The Philharmonic Orch.; Herbert von Karajan, cond. Columbia 12-in. ML 4456. 29 mins. \$5.45.

The smaller-scaled chamber symphony recording on Capitol, released late in 1949, was a first on records for this unique and engrossing Bartok score. A fine wide-range job, it showed a notable advance on anything released previously on this label, and even today can stand on its own against later releases. However, not all the problems that the recording of percussion instruments pose were solved satisfactorily. The xylophone, with its sharp highs, emerged with a slatiness of sound that was none too pleasant. At the other end of the range, bass drums were rather tubby, the side drums chattery. The celesta fared better, but the piano tone had little depth. Much more successful was the string tone, particularly cellos and violas, the rich velvety sound of the latter being well captured. Byrns' performance lacks the excitement of his rivals, though he keeps the inner voices admirably clear.

The one-microphone Mercury job, impressive for the sonority and spaciousness of its overall sound, approximates closely what the listener would hear in a concert hall performance. Unfortunately, on rec-

ords, this also produces an instrumental balance that seems slightly out of focus. For instance, the celesta, highly important to the score, is well recorded, but placed too far from the mike for its sweet sounds to emerge strongly enough. The piano is well forward, though somewhat submerged by the welter of orchestral sound in the Fourth Movement. Xylophone better placed . . . sound good . . . the same applies to drums. The violins, which have a tendency to fade, also seem to be not as close as they might be, but violas and cellos are more forward and strong.

Thanks to Columbia's multi-mike pickup, the recorded sound has better balance and more overall depth and roundness, than Mercury. It also sounds slightly compressed: probably a studio recording. I like the more musical, less clattery, xylophone sound, which is very clearly reproduced, while the celesta has a warmer and more liquid tone. Both bass and side drums have depth of sound. There is greater clarity in the harp work, too, and the instrument seems better placed than on the other discs. Strings are close, too, but some wiriness of tone in the violins is noticeable.

Of the three, I find the Columbia the most satisfying, not only for the recorded sound, but also for Karajan's exciting and dramatic reading of the work. Mercury has an edge economically, however, for it manages the work on one side of a 12-in. record, the coupling being a fine performance of the Bloch *Concerto Grosso for String Orchestra and Piano Obligato*. Capitol takes two sides of a 10-in. disc, while Columbia stretches it to both sides of a 12-in. record. On all records, I found surfaces that were reasonably quiet. — J. F. I.

BEETHOVEN: See pg. 33 ff.

BERG: *Seven Early Songs* (1905-08) ●  
*Piano Sonata, Op. 1* (1906-08) ●  
*Four Songs, Op. 2* (1908-09) ● *Four Pieces for Clarinet and Piano, Op. 5* (1913)  
 Benjamin Tupas, piano; Catherine Rowe, soprano; Sydney Forrest, clarinet. Lyricard 12-in. LL 13. 35 mins. \$5.95.

Up to now, the Berg discography has been limited to mature works of the 1920's and 1930's — *Wozzeck*, the *Violin Concerto*, the *Lyric Suite*, the *Chamber Concerto*, and the concert aria entitled *Der Wein*. But a great master is likely to be a great master throughout the range of his output, and his early works, influenced as they are bound to be by the accepted styles of his youth, may serve as a valuable bridge to the understanding of his later manner. Such, according to the notes on the jacket, is the philosophy behind the present recording, and it proves its point most eloquently.

The songs of this collection reveal a composer much influenced by Brahms and Mahler and fully their equal; the songs, in fact, are the most important things in this collection, and they are works of magnificent power and dignity. Unfortunately, however, only the texts for the four songs of *Op. 2* are provided.

The piano sonata is a big piece in one movement and in a highly chromatic, almost Franckian idiom. The clarinet pieces,

a much later work than the others, are a product of Berg's period of study with Schönberg; they are brief, atonal studies in sonority, highly condensed, highly dramatic, and altogether fascinating.

Performance and recording are first rate. — A. F.

BERG: *Wozzeck* (Complete)

New York Philharmonic-Symphony Orch. with soloists and chorus; Dimitri Mitropoulos, cond. Columbia two 12-in. SL 118. 85 mins.

Alban Berg's *Wozzeck* is scheduled for performance by the Vienna State Opera at the Congress of Cultural Freedom next May in Paris. In other words, it has been selected by an international jury as one of the prime achievements of western man during the present century, and that is the crowning touch in its almost unprecedented history.

Shortly after *Wozzeck* was completed, Berg told an interviewer "I naturally hope that this opera of mine will be produced — but I do not expect it." The composer's expectations were belied, however, and on the grandest imaginable scale, for *Wozzeck*, immediately after its first performance in Berlin in 1925, proceeded to make a triumphant round of practically every opera house in the German-speaking world. It has been heard, at home and abroad, more often than any other opera since *Rosenkavalier*; a movie has been made of it, and now it appears complete on records. So modern German expressionism attains its most impressive victory in the musical arena.

In its text, *Wozzeck* goes back to the beginnings of the expressionist movement — to a play by that extraordinarily prophetic poet, Georg Büchner, who died in 1837 at the age of 24. The age of Büchner was much like the age of Berg himself: Büchner's Germany knew all about suppression and regimentation in the grand Teutonic manner, and the figures of his drama — captain, army doctor, drum major, underdog private and prostitute — seem to step directly from the violent caricatures of the German military which Georg Grosz was to produce at exactly the moment when Berg was composing his music.

The plot is very simple: *Wozzeck*, the dull-witted soldier, butt of his officers' jokes and guinea-pig for his regimental doctor, grows jealous of the girl who has borne him a child, stabs her to death, and drowns while attempting to retrieve his knife from the pond in which he has thrown it. Büchner tells this simple story, however, by means of a very complex technique: there are 25 short scenes which move with cinematographic speed and fluidity, and since Berg was writing for the stage rather than the film, he was forced to throw out no less than ten episodes of the original.

In his musical setting, Berg uses tonality for sustained moods and atonality very largely for scenes of action; tonality, for Berg, is a lyric resource and atonality, the idiom of dramatic movement. The characters sing, speak, and employ the *Sprechstimme* — that mixture of speech and song which the composer's teacher, Schönberg, had invented for *Pierrot Lunaire*; furthermore, there are a few incidents wherein the singers are required to whistle phrases carefully notated in the score. The orchestra-

tion makes even that of Richard Strauss seem elementary — but the aspect of the music about which there has been most comment is that of its form.

As everybody knows by now, *Wozzeck* employs a series of instrumental structures: its second act, for example, is a symphony in five movements and its third act is a sequence of six inventions. There is a considerable literature on this phase of the work, and to study it is rewarding; nevertheless, one must remember that Berg himself once said, "I demand that from the moment the curtain rises until the moment it falls, no one in the audience be conscious of this diversity of fugues, inventions, suite forms and sonata forms, variations and passacaglias — no one, I repeat, be filled with anything but the *idea* of the opera, which far transcends the individual fortunes of *Wozzeck*."

Hearing the work on these records, with the score in hand, one is not only filled with the idea of the Opera but is seized and shaken by it in a feverish and overwhelming experience. Seldom, if ever, has one heard such a skein of ominous sounds, but they never lose their grip, since they are not exploited, like those of *Elektra*, for their sensational, nerve-wracking effect. *Wozzeck* is a truly great tragedy, a work of intense expressiveness and subtle pathos as well as a stark, sinister drama; it "purges through pity and terror" in a fashion rarely attained by operas of this or any other time.

The recording, taken from the Philharmonic broadcast of April 15, 1950, is superb, and so is the performance. Looking at the printed music one wonders how it can be performed at all, but it is done with complete conviction, clarity and apparent ease by all concerned. The principal singers are Mack Harrell, Frederick Jagel, Joseph Mordino, David Lloyd, Ralph Herbert, and Eileen Farrell.

Columbia, however, has erred very seriously in failing to provide the text. There are excellent notes by Herbert F. Peyser, but these are not an adequate substitute for the words, which should have been given both in German and in English. Failure to provide the text will inevitably circumscribe the sale of this set, and that is doubly unfortunate since the proceeds are to go to the Philharmonic-Symphony's pension fund. — A. F.

BRAHMS: *Gesang der Parzen, Op. 89* ●  
*Nanie, Op. 82* — STRAUSS, R.:  
*Wanderer's Sturmlied, Op. 14*  
 Vienna Chamber Chorus; Vienna Symphony Orch.; Henry Swoboda, cond. Westminster 12-in. WL 5081. 12, 14 and 17 mins. \$5.95

This is by no means the heterogeny it seems. Each of these elaborate choral compositions is concerned with the fundamentals of emotion; each is to a text by Goethe or Schiller; and the resemblance of the early Strauss to the late Brahms is strikingly apparent. The disc is effective with its highly disciplined chorus and clean, sober recording. One hesitates to evaluate interpretations of works which one has never before heard, but in each of these an impression of complacency was received — a feeling that the delivery was more static than befits the words and music. — C. G. B.



**BRAHMS:** *Quintet for Clarinet and Strings in B Minor, Op. 115*  
Reginald Kell and the Fine Arts Quartet. Decca 12-in. DL 9532. 35 mins. \$5.85.

Only Mozart's work in the form excels this in public esteem, and it is to be assumed that the same group will record the Mozart, Kell having already displayed his mastery therein on pre-LP discs. This is the only LP version of the Brahms *Quintet*, and its values are primarily those of continuous euphony, the pointed romantic phrase soothed in favor of luxury and purity of sound. — C. G. B.

**BRAHMS:** *Symphony No. 2, in D, Op. 73*  
Berlin Philharmonic Orch.; Eugen Jochum, cond. Decca 12-in. DL 9556. 39 mins. \$5.85.

There is severe opposition from Monteux on Victor and Mengelberg on Capitol for this beautifully-played version whose implacable rectitude of tempo and judicious balance of choirs make it the most symphonic of a curious work which fluctuates an ominous solemnity and piping flippancy. More polyphonic details become apparent in this edition than in the others and, if the inexorably moderate pace does not displease, this would be the preference of discophiles, provided their amplifiers can banish the sharp edge of the violins. — C. G. B.

**BRAHMS:** *Variations on a Theme by Robert Schumann, Op. 9* — SCHUMANN: *Faschingschwank aus Wien, Op. 26*  
Jacqueline Blancard, piano. Vanguard 12-in. VRS 416. 19 and 20 mins. \$5.95.

There is an appositeness in the Brahms-Schumann coupling that other recording companies might well emulate. This is a first appearance on LP for both works. In fact, I do not recall the Brahms ever appearing before on records in this Country.

Miss Blancard would seem to be happier in the youthful Brahms variations, to which she brings a finely controlled and singing tone, which suits them admirably. A complete awareness of their shifting moods adds considerably to her persuasive performance. The gay, melodic Schumann showpiece, with its bustling first section, calls for considerable virtuosity on the part of the pianist. The playing is mettlesome, and in the inner sections, convincing and tender. However, the opening and closing sections have a tendency to sprawl, with the pianist striving for too large a tone.

The piano is boldly and brilliantly recorded: excellent in the bass, slightly less so in the treble. Occasional explosive *fortes* in the higher registers had a tendency to "overload" on my copy. Tone steady on the Schumann side, but some slight, occasional wobble on the Brahms . . . not too noticeable. Excellent surfaces. — J. F. I.

**BRITTEN:** *Les Illuminations* — MARTINU: *Sinfonietta La Jolla*  
Musical Arts Orch., La Jolla; Nikolai Sokoloff, cond. (with Alice Mock, soprano, in *Les Illuminations*). Alco

12-in. ALP 1211. 20 and 21 mins. \$5.45.

The Britten, after Rimbaud, is a considerable, arresting and remarkable work, carressingly enunciated by Miss Mock with warm support from the orchestral strings. The Martinu is light and rather trivial, not a disagreeable pastime. The little orchestra is not to be sneered at, and the enregistered sound is transparent and neat. — C. G. B.

**CAGE, JOHN:** *Sonatas and Interludes for Prepared Piano*  
Maro Ajemian, piano. Dial two 12-in. 19 & 20. 78 mins.

The young American composer, John Cage, has developed a method of "preparing" a piano, by means of nuts, bolts, screws, and bits of rubber, so that it provides a range of percussive tone-colors as rich and delectable as those of a Balinese gamelan. This recording contains sixteen of the one-movement sonatas Cage has written for the instrument as well as four interludes. The music is on the busy, atonal side, but is often extraordinarily eloquent, for Cage is, above everything, a composer, and to emphasize his experiments in medium above his creative preoccupations is entirely to misrepresent his significance. Miss Ajemian plays the music with the greatest imaginable insight, and the recording is perfection itself. — A. F.

**CHOPIN:** *Sonata No. 3 in B Minor, Op. 58*  
Rudolf Firkusny. Columbia 10-in. ML 2201. 25 mins. \$4.00.

One may take exception to a few details of this execution but, as a whole, Mr. Firkusny sings a beautifully coordinated and even, rippling song, and Columbia has reproduced the piano with imposing exactitude. — C. G. B.

**COPLAND:** *El Salon México*  
See MILHAUD

**DEBUSSY:** *La Mer*  
New York Philharmonic-Symphony Orch.; Dimitri Mitropoulos, cond.  
*Ibéria:* Philadelphia Orch.; Eugene Ormandy, cond. Both on Columbia 12-in. ML 4434. 22 and 19 mins. \$5.45.

*Ibéria* is the second Philadelphia record made to the very highest standard that Columbia has given us, and the fat marvel of this orchestra's tone so bountifully captured by the engineers — not only the dazzling percussion, but the formidable horns and strings — will presumably give this version prior choice over good ones by Reiner, Ansermet and André, in spite of a ruddy cheer in Mr. Ormandy's performance less apropos than the brooding sensuousness advanced by the others. — *La Mer*, well-engineered, is nevertheless not the recipient of such special, preeminent engineering as *Ibéria*; but the Mitropoulos perusal is affectionate and agile. — C. G. B.

**DEBUSSY:** *La Mer* — MENDELSSOHN: *Incidental Music to A Midsummer Night's Dream*  
NBC Symphony Orch.; Arturo Tos-

canini, cond. RCA Victor 12-in. LM 1221. \$5.72.

Foremost contender for the title of LP-least-likely-to-succeed-in-1952 is a January issue of *La Mer*, made for Columbia by Dimitri Mitropoulos and the New York Philharmonic-Symphony. Its pitiable fate was to reach dealers' shelves at almost the same time as this RCA Toscanini version — which is, beyond doubt, one of the very greatest performances of any music ever recorded. For once, the Victor recording engineers have succeeded in doing the Maestro something like justice. The sound level is not too low, at least for microgroove reproduction. There is a certain leanness in regards to the orchestral tone, but this probably is not distortion. Under Toscanini, the NBC actually sounds that way, even in Carnegie Hall. He does a minimum of blending, using pure tones much as impressionist painters used primary colors, leaving the blending to the listener's mind. This fits Debussy's intention perfectly, and result is one of tremendous power and almost visual explicitness. This *is* the sea. On the reverse of the record, Mendelssohn has fared less well. Reverting to routine in transcribing the excellent 1948 78's, the RCA technicians have scrupulously removed all trace of highs. — J. C.

**DEBUSSY:** *La Martyre de Saint Sébastien*  
Frances Yeend, soprano; Anna Kaskas, alto; Miriam Stewart, soprano. Oklahoma City Symphony Chorale and Orch.; Victor Allesandro, cond. Allegro 12-in. ALG 3004. 54 mins. \$5.95.

From time to time, this critic exhumes for emphatic approval, certain editions of the recent past not reviewed by HIGH-FIDELITY in its still short career, but which make the reviewing a privilege at any time. The d'Annunzio-Debussy mystic, in a performance of ultimate implausibility at Oklahoma City, is in effect a feat of ideal engineering for the vaporous and tortured work. The recording is distant and something in the hall's acoustics has made the floating emanation of tones from soloists, chorus and orchestra appropriately siderial. It is possible that no work for such forces has ever been so successfully imprinted into vinyl — the Columbia Alexander Nevsky comes to mind, but that was brazen, florid and direct; this is tenuous and pallid, intangible and unlikely. The writer fears that the work would be boring by half in a less sensationally subdued performance, unlike this one wherein no voices and no instruments are distorted, wherein an inflexible cleanness of sound draws attention to musical line as such. Mr. Allesandro has drawn out a subtly capable performance from forces of decided worth (if in an unlikely locale); and if enunciation is ethereal, perhaps Oklahoma French were better implied than uttered. — C. G. B.

**DOWLAND:** *Songs* — PURCELL: *Songs*  
John Langstaff, baritone; David Soyer, cello; Herman Chesid, harpsichord. Renaissance 12-in. X 27. 40 mins. \$5.95.

The earlier, and lesser known, Dowland (1563-1626) contributes nine, Purcell (1659-

1695) six, to this handsomely produced collection of early English songs. Apart from the charmingly fanciful *Say, Love, If Ever Thou Didst Find*, Dowland remains in a generally somber and melancholy mood, whereas Purcell ranges from the challenging *I'll Sail Upon The Dog-Star* to the lovely serenity of *Music For A While*.

Occasionally, Langstaff finds the range taxing to his voice, but in general his singing is forthright, musically, carefully phrased and in excellent taste. His diction is clear, and he has the ability to create a mood. Bold, close-to-mike recording for the vocalist . . . instrumental accompaniments a trifle discreet on Purcell side . . . closer on Dowland. Interesting and successful effort to simulate the lute by the use of the harpsichord for the Dowland songs should be noted. Excellent surfaces. This one-record album comes with complete texts on the double faced inner liner notes: Very welcome. — J. F. I.

**DVORAK: *Symphony No. 5 (chron. No. 9) in E Minor (New World) Op. 95.***  
New Symphony Orch.; Enrique Jorda, cond. London 12-in. LLP 432. 40 mins. \$5.95.

One of the more successful and genial frauds of musicology is that this thoroughly Bohemian paean is African: the soupcon of Swing Low, Sweet Chariot does not dilute the Pilsen, nor does the erosion of time fuzz the rhapsody of the last of the great symphonies.

Mastery of the involutions of Spanish rhythms makes mastery of the healthier Czech meters easy, and the very talented Spaniard Jorda gives us here the most rousing performance on records, variation without diffusion, nuance without affectation. After exhaustive fussing with the controls on a very sensitive amplifier, music lovers will find the orchestral semblance of a very high order. — C. G. B.

**FALLA: *Nights in the Gardens of Spain***  
Clifford Curzon, piano. New Symphony Orch.; Enrique Jorda, cond.

*Excerpts from the Three-Cornered Hat*  
London Symphony Orch.; Enrique Jorda, cond. Both on London 12-in. LLP 445. 25 and 10 mins. \$5.95.

The new *Nights* will be the touchstone by which future performances must be judged. A Rubinstein-Golschmann on Victor LM 1091 seemed good until the advent of Curzon-Jorda, whose susceptibility to the temperamental mutations of this music makes the brilliant chatter of the older version a little rueful. On London, we have a dark and languorous accord between piano and orchestra, enlivening the Moorish mystery with flicks of light. On Victor, Golschmann turns on the spotlight, and Rubinstein reads happily from his Baedeker.

The real and ominous Curzon-Jorda has a completer realization of the subtle orchestral color, thanks to more recent engineering, but a low-frequency pulsation may be found oppressive.

The *Three-Cornered Hat* excerpts are not those of the customary orchestral suite although they include some of that music, particularly some descriptive episodes in-

dicative of Falla's admiration for Stravinsky. They are played with Jorda's native suppleness, and the transfer from 78's has been effectively operated. — C. G. B.

**FALLA: *Seven Popular Spanish Songs — GRANADOS: *Seven Songs from Tonadilla****  
Conchita Supervia, mezzo-soprano; Frank Marshall, piano. Decca 10-in. DL 7510. 13 and 13 mins. \$3.85.

Anyone who has ever heard the primitive sentiments of the Falla *canciones* sung by this miraculous mezzo, whose voice was capable of anything and whose style was always perfection, whether of brutality or refinement, will not willingly listen to another interpretation. This disc, masterfully made from 78's, and caught at the summit of her supremacy in genre singing, is superb and unique, music by its ordained exponent. — C. G. B.

**FAURE: *Dolly, Op. 56 • Nocturne, Op. 74 • Barcarolle, Op. 76 • Impromptu, Op. 102***  
Robert Casadesus, piano (with Gaby Casadesus, both at one piano in *Dolly*).

Columbia 12-in. ML 2205. 14 mins. (*Dolly*); 12 mins. (other three). \$4.00.

The subtle and penetrating Fauré, who composed subtly and delicately about nothing very much, occupies the anomalous position of being lauded for a greatness his works do not warrant and being neglected for a triviality he seldom displays. There is nothing wonderful in the four pieces recorded here, but there is plenty of subtlety for those willing to listen closely. The performances have the sound of authority; the sound of the piano is clean, but hard. — C. G. B.

**FRANCK: *Le Chasseur Maudit — RIMSKY-KORSAKOV: *Le Coq d'Or Suite****  
Royal Philharmonic Orch.; Sir Thomas Beecham, cond. Columbia 12-in. ML 4454. 15 and 26 mins. \$5.45.

Beecham in top form, with a particularly lusty and atmospheric reading of the Franck symphonic poem. Few conductors today could breathe as much life into this tawdry score, nor so fully realize its dramatic moments. Much of his enthusiasm has been

## THE COLUMBIA AL SERIES

The primary virtue of LP is duration. But this can be a nuisance and sometimes a fault. A large number of concert-pieces — particularly standard overtures — properly last from 7 to 10 mins. in playing. In older days, these were entrusted phonographically to both sides of a 78 rpm. record. On LP, the custom has been to put two or three works to a side, lest the cost per minute exceed the bounds of decency. This has resulted in a number of inept heterogenies in which a music lover wanting the *Freischütz* Overture had to get the Fugue from *Schwanda* and the *Ruslan and Ludmilla* Overture as well.

Some time ago, Capitol inaugurated a series of 10-in. LP's for works of this restricted duration, issuing them at a price more or less proportioned to the amount of music engraved. Columbia has now imitated this example with a series, identified by the letters AL, of generally standard works averaging about 8 mins. in length, one each to obverse and reverse. The price is uniformly \$2.85, and it will be seen that in terms of the last regular pricing of 78's, these are not a real monetary bargain. The advantage is one of convenience. Most, but not all, of this series had previously been issued by the company, usually in LP form as part of a miscellany. The reprocessing has been in nearly every case to the acoustical benefit of the recordings. Several are notably more brilliant in the high frequencies than their prototypes, and it is pleasant to report that this added brilliance has been obtained without exaggeration or distortion. The Beecham records, originally very good, are better, and have been rationalized into two reasonable couplings. Walter's new *Academic Festival* Overture is welcome, and is intelligently backed by four *Hungarian Dances*, three of which seldom have orchestral performances. Ob-

viously, Columbia has calculated that the potential field is large here and will be productive, for without exception the records are first-class reproductions of the works they carry, in both engineering and interpretational terms. Following is the initial list.

AL 1 BRAHMS: *Academic Festival: Overture* (9 mins.) ● *Hungarian Dances Nos. 1, 3, 10, and 17* (10 mins.). N.Y. Phil-Sym Orch.; Bruno Walter, cond.

AL 2 OFFENBACH: *Orpheus in Hades: Overture* (8 mins.) ● LISZT: *Hungarian Rhapsody No. 2* (10 mins.). Columbia Sym-Orch.; Artur Rodzinski, cond.

AL 3 VILLA-LOBOS: *Bachianas Brasileiras No. 5* (7 mins.) ● VERDI: *La Traviata: "Ah! Fors' è lui"* and "Sempre Libera" (7 mins.). Bidu Sayao; ensembles cond. by Heitor Villa-Lobos and Erich Leinsdorf.

AL 4 OKLABOMA!: *Medley* (8 mins.) ● *Roumanian Fantasy* (6 mins.). Orchestra cond. by André Kostelanetz.

AL 5 PONCHIELLI: *La Gioconda: Dance of the Hours* (8 mins.) ● NICOLAI: *The Merry Wives of Windsor: Overture* (8 mins.). Royal Philharmonic Orch.; Sir Thomas Beecham, cond.

AL 6 VON SUPPE: *Morning, Noon and Night in Vienna: Overture* (8 mins.) ● STRAUSS: *Morning Papers Waltz* (8 mins.). Royal Phil. Orch.; Sir Thomas Beecham, cond.

AL 7 MENDELSSOHN: *Ruy Blas: Overture* (8 mins.) ● *Fingal's Cave: Overture* (9 mins.). N. Y. Phil-Sym Orch.; Dimitri Mitropoulos, cond.

AL 8 SAINT-SAENS: *Danse Macabre* (7 mins.) ● *Le Rouet d'Omphale* (7 mins.). N.Y. Phil-Sym Orch.; Dimitri Mitropoulos, cond.

AL 9 SIBELIUS: *Finlandia* (8 mins.) ● *The Swan of Tuonela* (10 mins.). Philadelphia Orch.; Eugene Ormandy, cond.

AL 10 VON SUPPE: *Poet and Peasant: Overture* (9 mins.) ● WEBER: *Der Freischütz: Overture* (9 mins.). Philadelphia Orch.; Eugene Ormandy, cond.



communicated to the orchestra, which plays with considerable verve, polish and rich tone. The more immediately appealing Russian suite, with its sensuous melodies and colorful orchestration, must take second place here, even though the performance is glittering.

Generally speaking, the recording is above par — even for Columbia. In the Franck, the bass drums, distantly placed, roll thunderously, the horn work is bold, and the tone of the cellos, especially in *pianissimo* passages, is finely captured. There is slight distortion in the last band on the obverse side, resulting in some murkiness of orchestral tone. The woodwinds have a crystal clarity, and the brass work, particularly the statement of the Golden Cockerel theme at the start of side 2, is quite wonderful. Surfaces are slightly crackly. — J. F. I.

**FRANCK: Sonata in A Major for Violin and Piano**

Isaac Stern, violin; Alexander Zakin, piano. Columbia 10-in. ML 2204. 27 mins. \$4.00.

Since the Franck Sonata has been able to withstand some of the strange performances to which it has been subjected in the past, it will doubtless survive this over-sentimentalized attack.

Certainly there is nothing Gallic about the approach, and little refinement and taste in the performance.

The suave, lush Stern tone is glowingly recorded, except for a few moments in the Second Movement, where it tends to become raspy. Piano tone is clean, resonant and steady, and a closer placement of the piano to mike results in better balance than existed on the Brahms release of November. Slightly gritty surfaces on my copy. — J. F. I.

**GERSHWIN: Piano Transcriptions of Eighteen Songs**

Leonid Hambro, piano. Walden 12-in. 200. 25 mins.

Gershwin loved to improvise at parties, taking off from his own show tunes into unpredictable stratospheres of jazz virtuosity. In 1941 he published a collection of piano transcriptions remembered from these party entertainments, and it is from this that the present recording is drawn. The essence of an improvisation, of course, is that it is improvised, and in the writing some of the color of Gershwin's playing was lost; nevertheless, Mr. Hambro's imagination penetrates very shrewdly behind the notes — and, at the bottom of the whole, lie some of the best show tunes ever composed. — A. F.

**GRANADOS: Seven Songs from Tondilla**

See FALLA

**HANDEL: Concerti Grossi, Op. 6, No. 5 in D Major, No. 6 in G Minor**

Boyd Neel and Orch., London 10-in. LPS 396. \$4.95.

This is the third pair of these *Opus 6* concerti that London has eased into publication with less fuss than they deserve. Neel had made the whole twelve on English Decca 78's just before the advent of LP, but they were so expensive that few were

sold over here, especially in competition with the rugged (if sometimes ragged) Busch version put out by Columbia. This is masterful Handel and fine, scintillant recording. Neel is a perfectionist. (Some other perfectionists, however, may object to the larger-than-life audibility of the "solo" instrument groups.) — J. C.

**HANDEL: Concertos for Oboe and Strings No. 3 and 4 • Concertos for Organ and Strings No. 13 and 14**

Hans Kamesch, oboe; Gustav Leonhardt, organ (1642) of the Franciscan Church, Vienna. Chamber Orch. of the Vienna National Opera; Ernst Kuyler, cond. Oceanic 12-in. OCS 25. 11, 10, 13 and 12 mins. \$5.95.

Musically adventures into fields explored by HMV and Victor a dozen years ago — landscapes of massive rock strewn with lush arrays of animate flowers. Deftly played in all instances; the oboe with very broad tone. The recording is alive and true after drastic rearrangement of the treble curve. — C.G.B.

**HARTMANN: Symphony No. 4 for Strings**

INR Orch., Brussels; Franz André, cond. Capitol 10-in. L 8146. 29 mins. \$3.98.

A savage thing, repellent in a continuous intensity of dark mood, a *lento* and an *adagio* in anguished encirclement of a grim *allegro*, a work of inescapable power which cannot attract and cannot be repudiated. The performance is excellent and likewise the recording. — C. G. B.

**HAYDN, F. J.: Concertos for Organ and Orchestra No. 1 and 2, both in C**

Anton Heiller, organ. Vienna Symphony Orch.; Hans Gillesberger, cond. Haydn Society 12-in. HSLP 1043. 19 and 11 mins. \$5.95.

Written by the composer whom everyone invariably visualizes as an old man, when he was 24 and 28 respectively, these are slight, breezy, gallant and enjoyable, particularly *No. 2* with its rousing parts for trumpets and drums. Performance and recording are in kind, light and openhearted. — C. G. B.

**HAYDN, F. J.: Quartets, Op. 17, Nos. 1-6**

Schneider Quartet. Haydn Society three 12-in. HSQ-E. 1 hr. 54 mins. \$17.85. Also available separately as follows: *Nos. 1 and 4, in E and C Minor* (20 and 20 mins.) on HSQ 13; *Nos. 2 and 3, in F and E Flat* (18 and 20 mins.) on HSQ 14; and *Nos. 5 and 6, in G and D* (17 and 17 mins.) on HSQ 15. \$5.95 each.

The six quartets constituting this opus are *Nos. 26 to 31* in the chronological series. Their issuance signals the first step in no less a project than the recording of all the Master's works in the form. They were written when Haydn was in his late thirties and illustrate a transition between his tentative early works and the ever greater ones to follow. None exists elsewhere on LP. In general, they are not well known, and

it may be appropriate to indicate that *Nos. 3, 4 and 5* in this edition have the most immediate appeal, particularly *No. 3*, which the Schneider style befits aptly. *No. 4* is a very neat work, with a disarming open-faced gaiety contrasted with a few wistful moments. *No. 5* is played here with a kind of impatient, quivering responsiveness to every shade. In fact, a feature of these discs is an emanation of pleasure, personal in its origin to the players themselves, now forwarded to us. A good deal of careful preparation must have gone into the performances, since the Schneider Quartet is a new organization, and we find little of the incertitude to be expected in recently-formed groups. The sound as such is amiable and glossy, without any salient features to call for special comment. — C.G.B.

**HAYDN, F. J.: Sonatas for Keyboard No. 1-10.**

Sylvia Marlowe, harpsichord. Haydn Society two 12-in. HSLP 3037. 1 hr. 25 mins. \$11.90.

The harpsichord was specified for these early abstractions, none of which seems ever to have been recorded before. The term "sonata" was not applied by Haydn to his multi-movement works until later. These show that the form as he was to round it and, as we know it, was, to say the least, inchoate. They range from 6 to 14 mins. in length, contain two, three or four movements and have a minuet as the only invariable feature. Following a recent trend, the harpsichord sound, remarkably clean and crisp here, has been enregistered larger than life — not a bad procedure, since it permits a reduction of background noise when the volume is turned down on the amplifier to a realistic level, something that must be done if we are not to receive a false impression of this small music. Miss Marlowe plays with a kind of dogmatic rectitude which begins to pall after a time, although it is very effective in *maestoso* sections and just right for the plaintive whimsy of *No. 2*. *Nos. 8, 9 and 10* receive a freer treatment, with more rhythmic variety and a greater sweep of dynamics. — C. G. B.

**HAYDN, F. J.: Sonatas for Keyboard, No. 13 in E Major, No. 19 in D Major, No. 31 in E Major, and No. 32 in B Minor**

Soulima Stravinsky, piano. Allegro 12-in. ALG 3040. \$5.95.

The pianist's father is the greatest of living composers. A career removed from the keyboard is indicated for the father's son. — C. G. B.

**KREUTZER: Septet in E Flat, Op. 62**  
Vienna Octet minus one. London 12-in. LLP 420. 33 mins. \$5.95.

Docile and innocuous music, soothing in a smooth version which will, perhaps, be the last. This is not to sneer at London or its minions: the piece serves as a corrective to the enormous contemporaries of Kreutzer, and shows how Haydn, Mozart and Beethoven, unique men all, shocked; and amazes the cynics among us that Haydn, Mozart and Beethoven prevailed. — C. G. B.

**LALO: *Symphonie Espagnole***

Jascha Heifetz, violin. RCA Victor Symphony Orch.; William Steinberg, cond. RCA Victor 10-in. LM 127. \$4.67.

It is difficult to account for this. Probably Heifetz' contract called for one more record in 1951, and it had to be something the members of a get-together orchestra could play right off, without much practicing. It is to be hoped they met their deadline, because they certainly didn't accomplish anything else. — J. C.

**MARTINU: *Sinfonietta La Jolla***  
See BRITTEN

**MENDELSSOHN: Incidental Music to *A Midsummer Night's Dream***  
See DEBUSSY: *La Mer*

**MILHAUD: *La Création du Monde* — COPLAND: *El Salon México***  
Columbia Chamber & Symphony Orchs.; Leonard Bernstein, cond. Columbia 10-in. ML 2203. 18 and 11 mins. \$4.00.

Two sparkling performances under the stimulating direction of Bernstein, who projects, particularly in the Milhaud, just that little more than I remember having heard in these scores previously.

Milhaud, in company with other European composers of his day, had just begun to show interest in the rhythm and music of American Jazz — and there is a liberal use of that idiom throughout this strong and absorbing ballet score. The use of a blues here is strongly reminiscent of that used

in the Gershwin *Rhapsody in Blue*, which this work precedes by about two years. Copland's skillful orchestration of some folk and popular songs of Mexico, I find less interesting.

Stunning recording job, with well-balanced, super-brilliant sound. There is some cloudiness on side 2, possibly due to slight echo on my copy. Brilliant brass and cool clarinet sound. Surfaces good. — J. F. I.

**MOZART: *Concerto for Piano No. 24 in C Minor* (K 491) ● *Concerto for Piano No. 27 in B Flat* (K 595)**

Paul Badura-Skoda. Vienna Symphony Orch.; Felix Prohaska, cond. Westminster 12-in. WL 5097. 29 and 29 mins. \$5.95.

There are several striking things to note in connection with this disc containing, back to back, two of the greatest concertos; No. 24, with tragic portents always perceptible in the splendor of the panoply, and No. 27, bedecked in corresponding brilliance, but with tragedy in entire subjection after the opening movement. First, Westminster has here given the largest and most completely realized orchestral part we have had in any Mozart concerto, with every instrument limpid; second, the use of a variable groove has permitted both to be imprinted on a single disc, where we would have expected two.

The performances are spirited in the orchestra but not without some stolidity on the part of the pianist, a little surprising since this quality has not been apparent in his other Mozart records. — C. G. B.

**MOZART: *Quartet No. 17 in B Flat (Hunting)* (K 458) ● *Quartet No. 16***

***in E Flat* (K 428)**

Amadeus Quartet. Westminster 12-in. WL 5099. 27 and 27 mins. \$5.95.

No. 17 (only). Loewenguth Quartet. Decca 10-in. DL 7517. 26 mins. \$3.85.

Very interesting extremes of performance in No. 17. The Amadeus group, in a huge sound, rounds and softens every phrase while the Loewenguth plays with the lofty directness that characterizes all its work. The Amadeus Quartet has a tone almost incredibly appetizing and somewhat factitious, caused by the room acoustics which reinforce while caressing each instrument. It is very beautiful, but can displease. Decca has given the Loewenguth group a recording exactly appropriate to the style, chiseled admirably, and the Decca disc will certainly be accounted purer Mozart.

*Quartet No. 16* in the Amadeus version is in its general feature exactly similar to the better-known *Hunting*. There is also a Loewenguth version of this, played with a most delicate tracery, but injured in the old Allegro record by persistent low-frequency background noise. — C. G. B.

**MOZART: *Quartet No. 23, in D* (K 575) ● *Quartet No. 25, in F* (K 590)**

Aeolian Quartet. Allegro 12-in. ALG 3036. 24 and 21 mins. \$5.95.

Curiously, No. 23, which is accorded more performances, has had no other LP recording. It is mellow and lyrical Mozart, without the breath-catching emotional suggestions of the other two members of the Prussian Quartets. The Aeolian Quartet features an equality of outflow and etched

**POSTSCRIPTS TO  
OPERA BUFFA AND MOZART**

An article on Opera Buffa and a review of the Columbia *Magic Flute* in the last issue of this magazine, left readers in uncertainty as to the ultimate comparative merits of the records discussed, because the Victor LP pressings of the *Magic Flute* and the *Marriage of Figaro* had not been heard. The necessary comparisons have since been made, without affecting the conclusions reached in the case of *Figaro*, but complicating judgment in the *Magic Flute*.

There had been some rumors to the effect that the LP's of the Glyndebourne *Figaro* would insert the recitative excised for the ancient original 78's. The rumors were untrue, and this gallant, sparkling and homogeneous *Figaro* (RCA Victor two 12-in. LCT 6001) has precisely the same fundamental and disqualifying fault as the beautiful, warm, and ripely-recorded Columbia *Figaro*. In the 78 rpm. version of the Glyndebourne, the omission of the recitative was not so apparent and hence not so obnoxious: the abrupt interruptions every 3 mins. or so while a disc was being replaced by another mollified the abruptness of the transition from one great scene to another which should not have followed it without the intervention of action carried in *recitativo secco*. We have, then, three albums carrying the title *Le Nozze di Figaro*, and if the version on Cetra is plainly sung with

less mastery than the other two, it retains the Mozartian form, is properly the only complete *Figaro* on discs, and is recommended here as the one for Mozartians.

The Beecham-Berlin Philharmonic *Magic Flute* enjoyed very good recording in its epoch (1939) and that recording has been somewhat improved in the familiar LP way by the Victor engineers on LCT 6101, three 12-in. discs. This is not to say that its acoustic qualities match those of the shining new Columbia, but other factors may induce music lovers to prefer the Beecham version to the Karajan. (This critic, after repeated hearings, remains in indecision.) The greatest virtue of the Victor is Beecham himself, whose direction is tenser and brighter than Karajan's, and the Strienz of that day was an unsurpassable Sarastro. Berger and Lipp are on a par, according to the evidence of these discs, while the other singers in the Columbia version are generally superior to those on the Victor. It is certainly impossible to give a mathematical value to the varying and conflicting points of superiority in such a work as this, where neither version has outstanding faults.

The celebrated Glyndebourne version of *Don Giovanni* has been reissued by Victor on three 12-in. LP's in LCT 6102. (Seldom have we heard so emphatic an illustration of the essential benefit of LP: the original edition occupied forty-six 78 rpm. sides!) The competition here is with a commendable edition from the Haydn Society (HSLP 2030), which displays naturally superior acoustics,

intelligent direction and, here and there, some good singing, but it is marred seriously by the inability of some of the most important members of the cast to realize their vocal obligations to this score. The late Fritz Busch, who conducted the Glyndebourne records, deserves great credit for the performance, which is always on its target; for without the presence of one absolutely unforgettable singer in the cast, he has projected an interpretation we cannot seem ever to forget. The men — Brownlee, Pataky, Baccaloni and Henderson — are excellent and the women fair. Brownlee's aristocratic intonation is as right as it is rare, and it is impossible not to believe that Busch had something to do with this, since the other Glyndebourne records show a good deal of the same quality in other singers. Indeed, it is impossible to think of a contemporary baritone capable of giving invisibly such an emanation of bearing as Brownlee has accomplished in his deft and suave characterization.

We may not hesitate between the occasionally disconsolate Haydn Society edition with its brighter sonic raiment, and the pulsing, sensitive Victor version, despite its slightly threadbare but still satisfactory, acoustics. Perhaps Columbia or London can assemble a cast to surpass the latter. They cannot, alas, summon back Fritz Busch. May we beg Columbia, if she thinks of venturing again into these altitudes, not to throw the recitatives into the wastebasket?

— C. G. B.



detail within a taut framework of tempo and dynamics, in amusing contrast with Amadeus in the complex interlacements of No. 25 (noted above under No. 18), whose exuberance of tone and soaring *cantabile* are magnified by a reciprocal hall-tone, of which Aeolian has little trace. The Amadeus gets at the heart with greater eloquence, abetted by engineering artifice, suggesting an orchestra: the Allegro disc is of a string quartet, well imprinted, but with a low-frequency background. — C. G. B.

**MOZART: Quartets Dedicated to Haydn**  
No. 14 in G (K 387), No. 15 in D Minor (K 421), No. 16 in E Flat (K 428), No. 17 in B Flat (K 458), No. 18 in A (K 464), No. 19 in C (K 465)

Roth Quartet. Mercury three 12-in. MGL 8. 2 hrs. 25 mins. \$14.55. Available separately in consecutive pairs on MG 10108, 10109 and 10110. 26, 21; 22, 22; 26, 27 mins. respectively. \$4.85 each disc.

Two years ago, this would have appeared as a constructive and revolutionary effort at systemization. But the two years have produced many versions of these great quartets by various groups. No doubt the obligation of a reviewer is to compare the new set with all the existing editions, but this reviewer, undertaking elsewhere in this issue a series of comparisons of some magnitude, had not time for the added duty.

Obviously, it is easier to understand a series of quartets played in a cohesiveness of style and, fortunately, the Roths, in achieving this, do not confuse it with stylistic uniformity. They are a healthy, sane, and intelligent organization with a contempt for self-exaltation. Their method is to realize the composer's intentions and, since these six quartets are exceptionally varied in line and sentiment, the Roths adapt themselves — generally with comfort — to the different demands made upon their skill. Nos. 2 and 4 seem especially successful. The records are difficult to adjust for the best sonic results. The sound seems in proximity to the hearer, with the instruments nicely proportioned to each other, but the bass is very large and the treble requires painstaking correction. — C. G. B.

**MOZART: Six Sonatas for Organ and Orchestra: No. 1 in E Flat (K 67), No. 2 in B Flat (K 68), No. 3 in D (K 69), No. 6 in B Flat (K 212), No. 8 in A (K 225), No. 14 in C (K 329)**  
P. Messner, organ. Mozarteum Orch., Salzburg; Paul Walter, cond. Period 12-in. SPLP 534. 29 mins. \$5.95.

Tidbits of varying value, all with some interest and No. 14 with emphatic musical appeal, neatly played and appropriately recorded on a pleasant and unassuming disc.

The annotator chides Mozart perhaps a little uncharitably for the commonplace nature of the first three. Mozart was only eleven. — C. G. B.

**NIELSEN: Symphony No. 3 (Sinfonia Espansiva)**  
Inger Lis Hassing, soprano; Erik Sjoeborg, baritone; Danish National

Radio Orch.; Erik Tuxen, cond. London 12-in. LLP 100. 34 mins. \$5.95.

The earnest, well-made and aspiring music with its broad and strident but amorphous themes is of smaller importance than the seductive orchestral playing and stunning engineering. Great rolling masses of ro-tund sound fill the hall with everything in rich balance except for some slightness of registry from the wood. The brass is massively unified beyond compare on records; the strings are silk. A record more for lovers of sound than of music. — The vocal interpolations are not long, but no text is supplied, although the language is Danish. — C. G. B.

**OFFENBACH: Overtures to La Belle Hélène • Barbe-Bleue • Le Mariage aux Lanternes • Orphée aux Enfers • La Grande-Duchesse de Gérolstein**  
London Philharmonic Orch.; Jean Martinon, cond. London 12-in. LLP 350. 8, 3, 5, 9 and 7 mins. \$5.95.

No. 5 or 6 of a series called Famous Overtures, of which the fame of some is disputable and of others ill; but wherein all are given a sonorous musical propulsion of high excellence. This is the second disc by a French conductor patently demonstrating that the infusion of some knowing imagination can revitalize a category of music

## THE HAT TRICK

This item was submitted to the editor just too late for inclusion in the last issue of HIGH-FIDELITY. It was conceived as news, as information of importance, rather than as formal criticism. Since this news is not yet stale, and indeed has not been generally transmitted to the record-buying public, it is printed late as better than never.

Of five discs received from Westminster at November's end, two were generally excellent without any sensational revelation. Three unwound a spiral of magisterial acoustical accomplishment, and each was concerned with a different instrumentalism. In each, this company, which periodically erects new standards, submits an aural apocalypse. From its three-headed triumph we may draw a number of conclusions minor and major, some obvious, some not. It is plain that the Westminster entrepreneurs have critical ears — and this is not reglementary in the musical industry — that they have the musical stamina to resist both *laissez-faire* and feverish sterile experiments, and the analytical ability to discern what in records needs improvement and what are the means to effect it.

Most significant is the fact that the new triple success has been obtained in three different fundamental instrumental fields and in the standard repertory: A Tchaikovsky symphony, a Beethoven quartet, and three familiar Bach pieces for keyboard. If Westminster can so continue right down the repertory, we shall be able to take the technical results for granted; and since one company has shown that new and wonderful results can be obtained by pertinacious application of the human ear to the quality of sound, it may be assumed that before long, other companies will imitate this revolutionary process of listening before issuing.

usually patronized with blatant and perfunctory readings. The engineering maintains the brilliant standard set by the preceding records in the series. — C. G. B.

**PERGOLESI: Concertinos for String Orchestra No. 1, 3, 4 and 5**  
Winterthur Orch.; Angelo Ephrikian, cond. Westminster two 10-in. WL 4001-2. 15, 13, 10 and 9 mins. \$8.90.

There is some dispute over the authorship of these ever-resourceful and diverting little works. If they are not by Pergolesi, they are by someone who sounds just like him, no small feat. Playing is spirited and sounds serene on these, the only 10-in. discs in the Westminster catalog. — C. G. B.

**PUCCINI: Tosca**  
Simona dall'Argine (s), Nino Scattolini (t), Scipio Colombo (bne), Alfred Poell (bs), and other singers. Vienna Chamber Choir; Vienna National Opera Orch.; Argeo Quadri, cond. Westminster three 12-in. WAL 302. 1 hr. 58 mins. \$17.85.

It was inevitable that Westminster, with its technical ability and growing confidence, would attempt an opera, every other manufacturer having, with different degrees of success, lavished musical stage-works on the record-public during the last year or two.

On WL 5091, the fine young pianist Reine Gianoli plays the *A Minor Fantasia*, the *D Minor Clavier Toccata* and the celebrated *Chaconne* with an extraordinary strength and vitality matched by the extraordinarily beautiful, vibrant and unprecedentedly faithful reproduction of the piano. On WL 5096, Westminster's prime conductor, Hermann Scherchen, leads the orchestra of the Vienna National Opera in a performance of Tchaikovsky's *Fourth Symphony*, in which this old warhorse not only appears with its familiar accouterments brilliantly shining, but a regrouping of personnel vis-a-vis microphones has bared many niceties usually hidden. Contrapuntal details are revealed in a work we have thought of as a concentration of fanfares relieved by a trippant holiday among the balalaikas. For the first time, in concert or on the phonograph, no detail seems to be lost, no part suffocates another. The accuracy of timbre is not new in records of this company, but the liberation of high violins from metallic shimmer has never been more effectively accomplished on LP. We are accustomed to heavy bass, but not to a 3-dimensional orchestral depth without bass-exaggeration.

Beethoven's second *Rasoumowsky Quartet* is to be found on WL 5098, lusciously played by the Vienna Konzerthaus Quartet. The spectacular feature of this recording is less basically concerned with naked realism, for on this disc we have a quartet-sound beautifully modified by a most ingratiating hall-tone, which acts, as it were, as a benign unguent for the rasplish strings.

These observations are cursory because of the pressure of time when they were written, but it is felt better not to tamper with the text now that there is leisure to do so, on the ground that the impact of the records is more forcefully revealed by the hurried original article. — C. G. B.

It was inevitable also that Westminster, having once committed itself to an operatic edition, would produce one of outstanding excellence. What we expected was perhaps *Armide*, *Così Fan Tutte*, or *Oberon*, in accordance with the repertorial standards of this company. — We have *Tosca*.

Surely, this is the harlot in church, and so handsomely accoutered that she is not likely to be evicted. In truth, there is a curious fascination in this adaptation of Sardou's slick melodrama, which emanates in an exciting fashion from the disc when one knows the rollicking horror taking place on the stage. The recording is so transparent and realistic, in its smallest details and its loudest interjections, and the sense of theatrical presence is so skillfully maintained, that Puccini's dramatic noises seem to have dramatic significance, and his tune — the one he uses in *Butterfly*, *Bobeme*, the *Fanciulla* and elsewhere — is used to very good effect by the participants in this brilliant album. The principal voices seem very proficient with the musical material which offers no differentiation of character; the control of the orchestra by the conductor is startlingly homogeneous, and the dynamic range is truly majestic. — Perhaps a notice of these disc should have appeared here from a more sympathetic hand; but still, the grandeur of the engineering feat is possibly and properly emphasized by insistence on the excitement provided by the clash of the tawdry show in its magnificent mounting. — C. G. B.

**PURCELL: Songs**  
See DOWLAND

**RACHMANINOFF: Rhapsody on a Theme of Paganini, Op. 43**  
William Kapell, piano. Robin Hood Dell Orch.; Fritz Reiner, cond. RCA Victor 10-in. LM 126. 22 mins. \$4.67.

The only thing hypothetically detractive from this concentration of excellence is some hardness in the exceptionally clear piano sound and, to this critic, that hardness is essentially the necessary adjunct to a good *staccato*. In delicate poise and as masters of shade, pianist and conductor play as one in the difficult alternating moods of this exuberant, entertaining and rather presumptuous pastime. The engineers have contrived a disc of truly extraordinary clarity in all choirs and for the whole orchestra, from whisper to loudest *forte*. It is hard to see how the work could be more completely realized. — C. G. B.

**RACHMANINOFF: Symphony No. 1 in D Minor, Op. 13**  
Stockholm Radio Orch.; Jacques Rachmilovich, cond. Mercury 12-in. MG 10111. 41 mins. \$4.85.

Another evidence of Mercury's sudden emergence as first-class technicians of recording the orchestra. It is the recorded quality which strikes in this first version of a dramatic symphony not without spasmodic interest but overlong in the presentation of its rather obvious ideas. The loud passages are very effective, the brass showy, the wood incisive, but the technical excellence of the disc is best exemplified in the remarkable qualities of the *pianos*. — Mr. Rachmilovich, making a leisurely tour of

the world's recording studios, has certainly found his best treatment in Stockholm and, in consideration of this favor, has given us what is unquestionably his best work. — C. G. B.

**RIMSKY-KORSAKOV: Le Coq d'Or Suite**  
See FRANCK

**ROSSINI: Stabat Mater**  
Ilona Steingruber (s), Dagmar Nerrmann (s), Anton Dermota (t), Paul Schoeffler (bs). Academy Choir and Orch. of National Opera, Vienna; Jonathan Sternberg, cond. Oceanic 12-in. OCS 24. 59 mins. \$5.95.

A disc like this, not new, is the kind that extorts a tempestuous puff for records not previously reviewed here. The last extended work of the genial genius, the most easy-going and sophisticated of men, the least exact of composers, who could not suffer and could not characterize, but could endlessly invent music for the froth of life, has given in his *Stabat Mater* not only a continuation of *William Tell* and the *Barber*, but a prescience of *Offenbach* and *Zar and Zimmermann*. This is the most relaxing of music in a performance of contrary galvanic brilliance. Singing is beautiful, leadership excellent, and recording in translucent balance (the undistorted string tone is something to be noted here, as less usual than the neat amalgam of drums and trumpets). If there is some microphone-flutter from the vocal quartet *mf* or louder, that is not continuous, and has been, alas, almost conventional in bold European tapes. A fine record: spirituel if not spiritual. — C. G. B.

**SAINT-SAENS: Concerto for Piano No. 2, in G Minor, Op. 22 • Ballet Music from Henry VIII**  
Hastings Symphony Orch.; John Bath, cond. (with Arthur Sandford in the *Concerto*). Allegro 12-in. ALG 3028. 24 and 15 mins. \$5.95.

Few composers had as much musical competence as Saint-Saens and so little feeling. There is a curious contradiction in his music which never seems worth the trouble to hear, but is never dull. Certainly the best-known of his concertos, here recorded, described by some wit as progressing from Bach to Offenbach, is as entertaining as it is fundamentally empty. Mr. Sandford battles it valiantly and emerges from the encounter flushed, but not seriously hurt.

The unfamiliar *Ballet from Henry VIII* is familiar in some of the folk tunes employed, and is not without a certain charm. Mr. Bath is not a master of orchestral subtlety but these are not works in which to bewail the absence of such a quality. What may be a premonition of a fruitful future is the acoustical triumph obtained by the Allegro engineers. The orchestra is luminous and in just proportion, the piano true-sounding. — There is more of the "adjacent, anticipatory echo" than discs generally display, but some people are amused by this lingering LP gratuity. — C. G. B.

**SCHONBERG: Pierrot Lunaire, Op. 21**  
Erika Stiedry-Wagner, recitation, with

instrumentalists; Arnold Schönberg, cond. Columbia 12-in. ML 4471. 33 mins. \$5.45.

Hard on the heels of the Dial release of Schönberg's *Pierrot Lunaire*, Columbia reissues this definitive recording of the work, conducted by the composer, with Mme. Erika Stiedry-Wagner intoning the Sprechgesang. It is in the declamation of the difficult singing-speech medium that this recording excels, for Adler's work on Dial cannot stand comparison with the extraordinarily subtle and impassioned performance of Stiedry-Wagner. It is tough listening, until one's ear becomes accustomed to the vagaries of the vocal line *contra* the instrumental accompaniment; after that, the going is easier.

The recording is a little thin in body. It was originally made in 1940. Some shrill highs from woodwinds . . . particularly piccolo . . . cello and viola fare better. Surfaces only fairly quiet.

Though the liner notes offer descriptions of the twenty-one pieces, no German texts are supplied. — J. F. I.

**SCHUMANN, C.: Trio for Piano, Violin and Violoncello in G Minor, Op. 17 — BEETHOVEN: Trio Movement in B Flat**  
Mannes-Gimpel-Silva Trio. Decca 12-in. DL 9555. 26 mins. \$5.85.

The sturdiest woman in musical history had a good deal of manhood in her, as the excellent notes to this record point out. This seems to be the first of her works ever recorded: it sounds like a production of Robert, and not a weak one. The performance is sympathetic and unshowy in a recording of a agreeable, competent engineering. The Beethoven is reviewed elsewhere. — C. G. B.

**SCHUMANN, R.: Faschingschwank aus Wien, Op. 26**  
See BRAHMS

**STRAUSS, R.: Wanderer's Sturmlied, Op. 14**  
See BRAHMS

**SZYMANOWSKI: Violin Concerto No. 1, Op. 35**  
Eugenia Uminska, violin. Philharmonia Orch.; Gregor Fitelberg, cond. Decca 10-in. DL 7516. 18 mins. \$3.85.

The radiance, refinement, subtlety and delicate understatement which are so characteristic of Szymanowski's music are marvelously exemplified in this masterly, neglected score. Performance and recording are superb. — A. F.

**THOMPSON, RANDALL: String Quartet in D Minor — BARBER, SAMUEL Sonata for Cello and Piano, Op. 6**  
Guilet Quartet. Raya Garbousova and Erich Itor Kahn. Concert Hall Society 12-in. CHS 1092. 20 and 16 mins. \$5.95.

Thompson's quartet, his first, is one of his broadest, most tuneful, powerful and ingenious works. One expects this kind of



dramatic, persuasive and exquisitely calculated composition from Randall Thompson, but the virility, not to say monumentality, of the Barber sonata is rather surprising. It is an early piece and a rather Brahmsian one, but a work of decided strength despite its obvious derivative-ness. — A. F.

**VIVALDI: *Dixit Dominus (Psalm 109)***  
Rosanna Giancola (s), Luciana Piovesan (s), Maria Amadini (a), Emilio Cristinelli (t), Giuliano Ferrein (bs). Chorus and Chamber Orch. of the Scuola Veneziana; Angelo Ephrikian, cond. Period 12-in. SPLP 537. 41 mins. \$5.95.

With *Juditha Triumphans*, and the 109th Psalm in the Vulgate, Period is having a Vivaldi festival of its own. One of the major achievements of LP has been to disinter the works of this great man and make them available again for people to hear. No more engaging example of his sacred works could have been chosen than this in which the most spirited animation alternates with devout contemplation in a way to obviate fatigue with either of them. A good deal of this sounds like good Bach and much of it like good Handel; the credit being Vivaldi's, who did not imitate those great contemporaries. Ephrikian was the right man: he knows the score and has trained the forces of his will. Since the voices are, in the main, excellent, and the recording tone both bright and full, this disc can be called an unqualified success and will probably be unchallenged for years. — C. G. B.

**VIVALDI: *Juditha Triumphans***  
Rosanna Giancola (s), Maria Amadini (a), Emilio Cristinelli (t), Marcello Cortis (bne). Chorus and Orch. of the Scuola Veneziana; Angelo Ephrikian, cond. Period three 12-in. SPLP 533. 1 hr. 55 mins. \$18.50.

A couple of years ago such an edition would have been greeted with awestricken compliments expressing the most hyperbolic approval. We are so accustomed now to the daily appearance of protracted esoterica that we can receive such a tasty effusion as this with complacency and no surprise at all. No doubt that the oratorio is a work of genius, and pretty consistently entertaining in spite of its repetitions. Vivaldi was able to make a tune whenever necessary, and the rhythmic vitality here, joined to devices of an odd orchestration unfamiliar to modern ears, convey a real dramatic force beyond the power of the limping text to project. Venice was Vivaldi's city, and there is obviously something of a tradition of performance there: the present one is excellent from all hands for its six sides, while the sound is for the most part transparent and refreshing, marred at a few intervals by some extraneous sounds and some microphonic hazards. — C. G. B.

**WAGNER: *Die Meistersinger von Nürnberg***  
Otto Edelmann (bne), Elisabeth Schwarzkopf (s), Hans Hopf (t), Erich Kunz (bne), Gerhard Unger (t), Ira Malaniuk (ms), Friedrich Dalberg (bs)

and other soloists. Chorus and Orch. of Bayreuth Festival, 1951; Herbert von Karajan, cond. Columbia five 12-in. SL 117. 4 hrs. 28 mins. \$28.00.

***Die Walküre, Act III***

Astrid Varnay (s), Leonie Rysanek (s), Sigurd Björling (bne), and other voices. Chorus and Orch. of Bayreuth Festival, 1951; Herbert von Karajan, cond. Columbia two 12-in. SL 116. 1 hr. 9 mins. \$12.00.

The prestige of the Bayreuth Festspielhaus is grand, and these are recordings of public performances therein. Record lovers do not speak enthusiastically of discs made under these general circumstances, thinking sourly of the auditorium and stage noises which must intrude themselves into and over the music, but there are other detrimental things concisely revealed in these two recordings. Of the Third Act of *Walküre*, we may say that engineering and editing were confused and unstable; that hope crossed by hysteria must have dictated its issuance, for the women's voices, faulted during the recording process, are all onerous to the hearer, and this must have been plain to the supervisors. A vicious high-frequency bounce (caused presumably by the acoustics of the stage) worries every feminine voice *forte* with deceitful shakiness and, as the singers wander in their action on the stage, their voices are caught now in a bellow, now in a whisper, covering the orchestra sometimes, indistinct behind its huge curtains at others. Intoxicated with the sonorous name of Bayreuth, Columbia, the benevolent originator of LP, has used an extra side to carry eight minutes.

The Rodzinsky-Janssen-Traubel edition on Columbia SL 105, despite its age and a consequent lack of lustrous depth in the sound, is more pointed, more dramatic, more real than this Bayreuth effort, for all the deep-piled velvet of the Bayreuth orchestra.

*Die Meistersinger* has some of the faults of the *Walküre* discs and some others, but is less fatal in some; and it has some distinct and almost compelling virtues of its own. Karajan's direction is sublime, if one can say so about so earthy a work. The singing by Elisabeth Schwarzkopf (Eva), Otto Edelmann (Sachs) and Erich Kunz (Beckmesser), is consistently splendid; Gerhard Unger is good most of the time as David; but regrettably the good tenor, Hans Hopf, had a wicked day as Walther. The strings of the orchestra have been richly engraved, but the wind — both wood and brass — is weak, and also the chorus, in this partial failure undertaken in unfamiliar and tricky surroundings. The lyrical comedy is so very human, and its romantic dramatics are so beautifully maintained by the conductor, that it is a temptation, under their spell, to recommend this set. But then Walther appears; and, trying to escape this trial, we note that the richness of the orchestra is uni-colored without sparkle, and we decide to wait for the first and third acts announced by London. For the second act, already issued by London, was promising, although atrociously edited (stretched to four sides where Columbia manages with two), with the Fliedermonolog, God help us, divided in the middle. The re-issued Victor third act (original 1939) is very

good, allowance made for its age. The recent complete edition on Urania, which contains many beautiful things, was, of course, falsified from beginning to end by the predominance of the singers obscuring the orchestra. — C. G. B.

**WEBERN, ANTON: Works, Vol. II**  
Dial 12-in. 17. 32 mins. \$5.95.

This set contains Webern's *Concerto for Nine Instruments*, his *Variations for Piano*, his *Quartet for Saxophone, Clarinet, Violin and Piano*, and his *Four Songs*. Except for the songs (for which no texts are provided), these works do not exemplify Webern as the aphorist of his legend. All are compositions of some length and immense complexity; to my ear, the atonal involvements of the piano variations and the quartet are all but impervious, but the *Concerto for Nine Instruments* is a work of extraordinary fascination, its slow movement especially so. It is a study in that "melody of tone color" about which Webern and his teacher, Schönberg, often theorized; the movement consists of a kind of *cantus firmus* in the piano over which the other eight instruments spin out a long, single strand of melody, none contributing more than two notes at a time. Webernians regard the piano variations, here played by Jacques Monod, as one of the composer's major achievements. If so, the repeated hearing which recording, and recording alone, makes possible, should solve its formidable difficulties for the listener. — A. F.

## MUSIC IN HAWAII

*Continued from page 47*

records, about 75% of which are available for withdrawal. These records are mostly classical. The library also has five machines for reproduction through headphones, at the library itself. The Library of Hawaii has its own one-hour program on Sunday afternoons over station KGBM. It consists mainly of opera and dramatic selections with emphasis on LP pressings.

The present interest in custom installations is not all that it could be. This is due, in part, to the fact that many of the audiophiles are transient, being members of the Military or attached thereto. I think that this field could stand development and intended to discuss it with some of the architects, and to point up my statements with illustrations from HIGH-FIDELITY.

Possibly a point of interest will be the fact that on this island (Oahu) we have seven AM stations but there is no FM station on any of the islands.

To give an idea of the caliber of musical programs, here is the one given in the Little Symphony series on January 8, 1952:  
PERGOLESI: *Concerto for Oboe and Strings*  
ALEXANDRE TANSMAN: *Triptych for String Orchestra*

MOZART: *Haffner Serenade, K. 320*

Typical of the regular symphony concerts is the program for December 11, 1951:

HAYDN: *Symphony No. 104 in D Major, (London)*

CHARLES IVES: *Symphony No. 2*

TCHAIKOVSKY: *Concerto for Piano and Orchestra in B Flat Minor, Op. 23*

how to

# Dispose

of the

# Body

**A**UDIOPHILES and detective-story murderers have one problem in common: what to do with the body. In the case of the audio hobbyist, the body is the ever-increasing accumulation of equipment. Bookshelves and tables may be adequate for a while but, sooner or later, the day of reckoning arrives. In many cases, its arrival is heralded by angry wavings of the dust mop. In our case, it was the Audio Fair last Fall in New York which precipitated the crisis. Once and for all, equipment had to be assembled into presentable form. Then, at the Fair, a number of people asked us for design details of the cabinet in which we had managed to install all our equipment except auxiliary speakers and the Air-Coupler. With the thought that readers of *HIGH-FIDELITY* might also want to make use of some of the ideas incorporated into this design, we have made sketches and taken pictures . . . as evidenced on these pages.

Principal features of the cabinet, Figs. 2 and 3, are shock-mounting for both tape recorder and turntable, and ample space to house a considerable assortment of equipment: Concertone tape recorder, Rek-O-Kut turntable, Fairchild transcription pickup arm, Browning tuner, Brociner preamplifier, Williamson-type amplifier, loudspeaker crossover networks, and a Stephens 15-in. coaxial speaker. The cabinet was designed primarily for utility, but attractiveness was also essential so that it would not be too out of place when used in the home.

The basic dimensions were dictated by the fact that we wanted the tape recorder and the turntable equipment side by side and at a height which would permit comfortable operation while standing. Thus the compartment for the Concertone was made 28 ins. wide. A space of 24 ins. was allowed for the turntable and arm. This dimension could be reduced if a shorter arm were used. Below the Concertone is a storage compartment for tape and other accessories. The door to this compartment drops down to form a shelf. Under this compartment, and behind the grille cloth, is the 15-in. coaxial speaker. As can be seen from the sectional sketch, Fig. 1, the speaker panel is tipped upward for better sound projection into the room.

The dimensions of the speaker compartment were not critical from the acoustic standpoint because this speaker was used to carry only the middle and high frequencies. Frequencies below 175 cycles were diverted by a dividing network to a corner Air-Coupler. It should be mentioned also that, at the Fair, the coaxial unit was used interchangeably with a 12-in. Jim Lansing in a tightly-enclosed 3 cu. ft. cabinet supplemented by a Jim Lansing tweeter. The purpose of this dual installation was to enable us to demonstrate reproduction from a coaxial unit as well as that obtained with two separate speakers. In either arrangement, the corner Air-Coupler carried the bass.

The Browning tuner and Brociner preamplifier, Fig. 2,



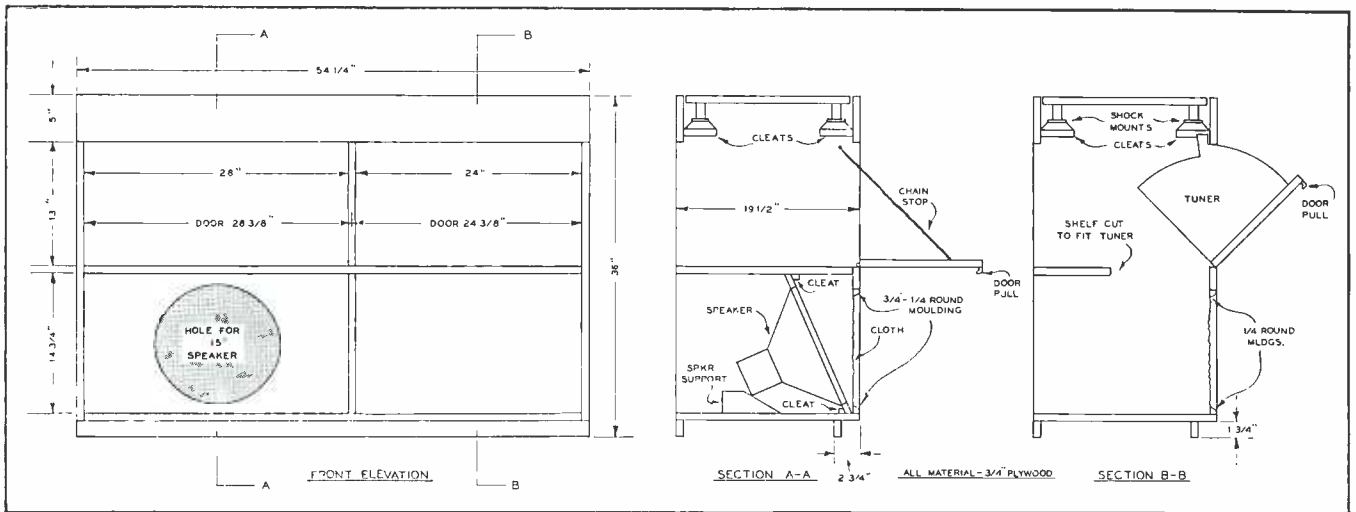


Fig. 1. These sketches show essential features of the equipment cabinet. Note that the shelf behind the tuner, section B-B, is cut off to provide clearance for the chassis as well as ventilation. The chassis itself is mounted on the door.

were mounted on the door of the compartment below the turntable and pickup arm. Three toggle switches, just visible under the preamplifier, control AC current to the various pieces of equipment. Mounted in this way, the tuner and control dials can be read easily from a standing position. It is not necessary to squat down, as is so often the case, to read the dial markings of the tuner.

Just behind the panel, at its extreme right and left edges, are side-pieces of wood, cut so that the door opens only part way. When closed, the heels of the side pieces rest on the shelf behind the tuner, as shown in the section B-B, Fig. 1.

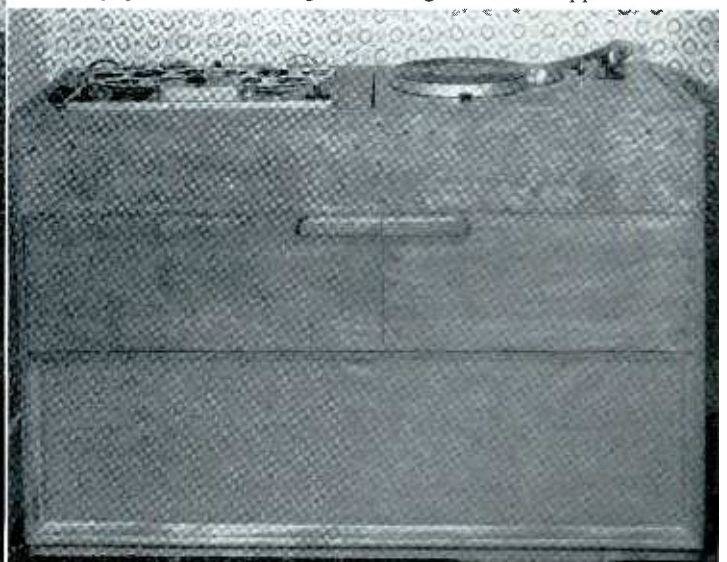
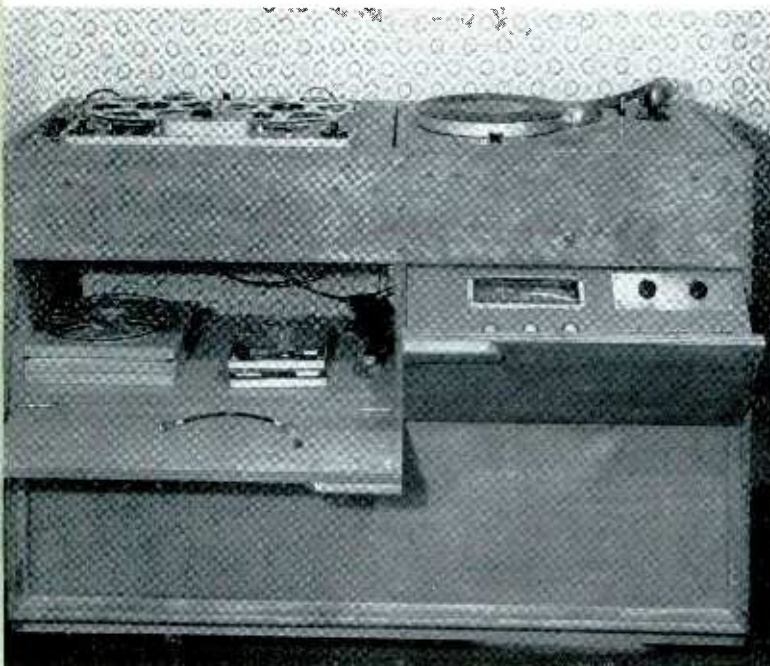
The method of shock mounting depends on the type of mounts used. We had mounts which were designed to be screwed or bolted to a support. Hence, we used the cleats shown in the sketches, attached the shock mounts to them, and then ran stove bolts from the plywood bases under the turntable and recorder into the mounts. The

stove bolts simply rested in the shock mounts; they were not attached to them. This method facilitated removal of either the tape recorder or the turntable with a minimum of effort and trouble. There was a reason for wanting to be able to remove the tape recorder easily, which will be discussed later.

The cabinet can be redesigned to accommodate different types and sizes of equipment. The photographs and sketches here are intended as suggestions to help in laying out equipment. We must apologize to the mechanical craftsmen in our readership for having taken certain artistic liberties with the principles of drafting. Note, please, that we refer to them as sketches! We realize that sectional drawings show many things which we do not show, and should not show some things which we do include. We can only hope that the sketches and photographs will give an approximate idea of construction. And to others, we must apologize for having made

Fig. 2. With doors open, left, equipment is easily accessible.

Fig. 3. Below: closing the doors gives a trim appearance.



certain changes between the time the cabinet was originally constructed (and photographed) and the time when the sketches were made. Putting the cabinet into actual use showed that certain things could have been arranged more conveniently. The major difference between photographs and sketches is in the front skirt, at the top of cabinet. In the photographs, this is actually 8 ins. high.

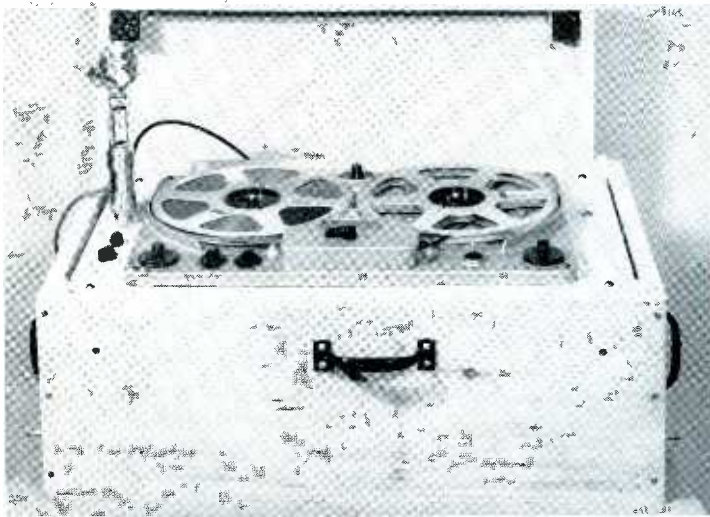


Fig. 4. Recorder fits both home cabinet and portable case.

In the sketches, it is marked as being 5 ins. high. The change was made because we have found that, for home use, it would be convenient to stand the reels of tape, as well as LP records, on edge instead of putting them down flat. The 5-in. skirt leaves room for a compartment 13 ins. high. From the artistic point of view, the cabinet will not be quite as attractive; the skirt width will look a little skinny in comparison with the compartment doors.

To improve the appearance of the cabinet when the doors are closed, another change has been suggested. The door pulls should be made longer and then centered on the cabinet, not on the dividing partition between the compartments, as shown in Fig. 3. Also, Soss invisible hinges, used on the left-hand compartment door, would make the appearance neater.

### A Carrying Case for the Concertone

Design of the cabinet described above was closely related to that of a carrying case for the Concertone recorder. The manufacturer of the Concertone makes an "official" case for it, but we wanted to be able to keep the recorder in the living room cabinet except when going out for recording on location. The case is shown in Figs. 4 and 5.

Again, shock mounts were used, and they exactly duplicate in style and position those on the home cabinet. Thus, the whole tape recorder mechanism can be disconnected, lifted out of the living room unit, and set up for operation in the carrying case in about 60 seconds. The cleats for the shock mounts can be seen in Fig. 5, an underneath view of the carrying case with the bottom of the case dropped open. The bottom was hinged to permit easy access to the underside of the Concertone.

Furthermore, for some of our work, we used an Altec 21-B microphone. This unit requires a special power supply which was mounted on the bottom of the carrying case, as shown in Fig. 5.

Normally, connections to the Concertone are made direct to the preamplifier-compensator chassis on the metal base plate of the recorder unit. As can be seen in Fig. 5, we ran wires from these connections to Amphenol connectors mounted in the plywood sub-base, so that connections could be made from the top of the recorder. There are three such connections: low-level input, high-level input, and output. In the home cabinet, the master wire feeding into the amplifier is "broken" by two Amphenol male connectors, located at the rear of the cabinet. When the Concertone is in position, its output is attached to the connector wired to the amplifier; the other connector is attached to a cable leading to the input of the recorder. When the Concertone is not in the home cabinet, these two connectors are wired together by means of the short piece of cable, with female connectors at either end, which is shown lying on the open compartment door in Fig. 2.

The top of the carrying case, Fig. 4, is fitted with pieces of sponge rubber, on pegs in each corner, which press firmly on the plywood sub-base of the recorder so that it will not fall out of position when being carried. The lid is held in place by two tension-type trunk catches at either end of the case, which supply the necessary pressure.

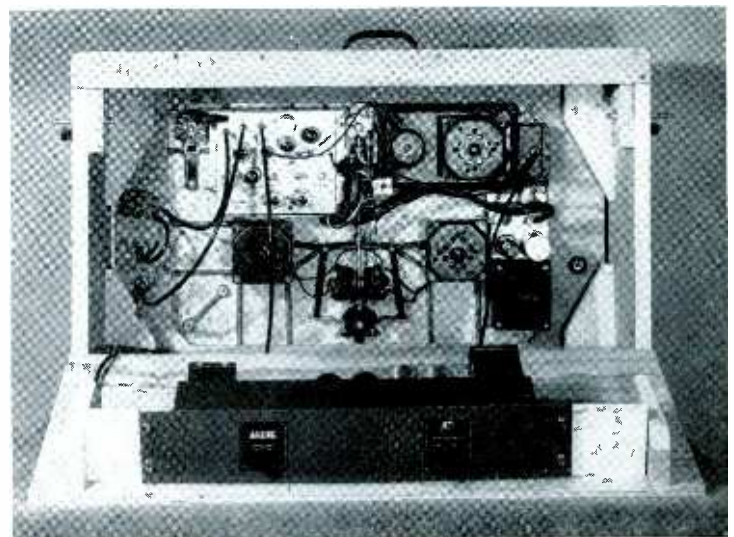


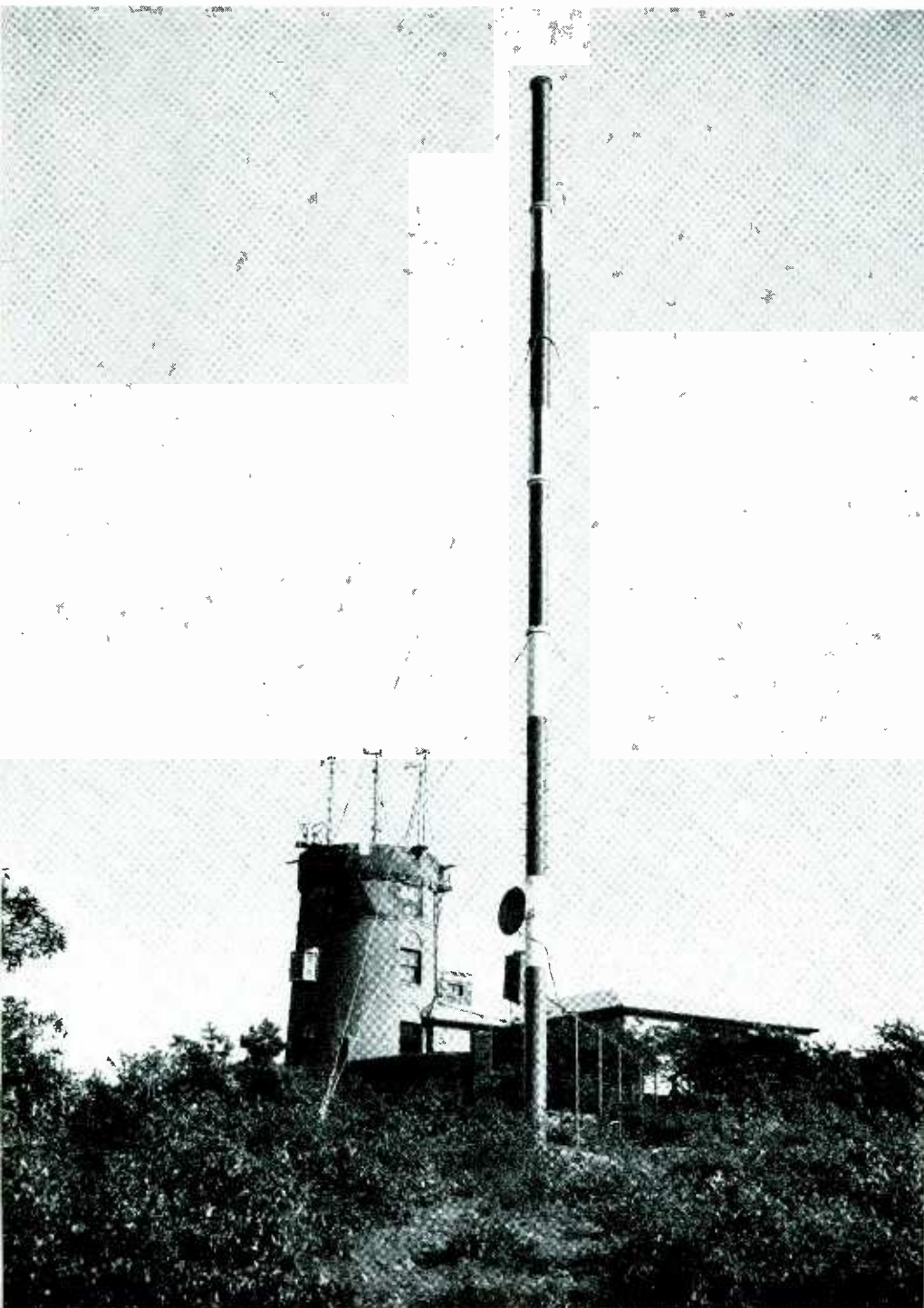
Fig. 5. Hinged bottom section exposes recorder connections.

As can be seen in Fig. 4, the top of the plywood sub-base is about  $\frac{3}{4}$ -in. below the edge of the case. This means that the sponge rubber pads on the lid of the case project a corresponding amount beyond its edges. This is a valuable feature! Even though the recorder is shock-mounted, there is still some vibration transmitted to the case. If, then, the case is set up on a wood floor, there is danger that this vibration will be transmitted, in turn, to the microphone. By putting the lid to the case on the floor, and the recorder case on the lid, the sponge rubber pads act as additional vibration absorbers. *Continued on page 74*



# WGBH: Station with a Purpose

*"... the prosperity of my native land, New England, which is sterile and unproductive, must depend hereafter, as it has heretofore depended, first on moral qualities and secondly on the intelligence and information of its inhabitants..."*



ALL THE unyielding determination, the realistic philosophy, and the will to find a way which characterized the Pilgrim Fathers are reflected in the words above, quoted from the will of John Lowell, Jr., under which the Lowell Institute was established in 1836. Last October, in furtherance of the purpose of the Foundation, one of the most interesting projects in radio broadcasting history was inaugurated when FM station WGBH went on the air in Boston.

There is always an uneasy feeling that non-commercial, educational stations are probably stuffy as to program management, and slightly sub-standard as to technical performance. Obviously, WGBH is an exception in those respects, because the percentage of homes with FM receivers in the Boston area increased over 40% in the first four months this station was in operation.

Ever since it was announced that WGBH would open up by carrying the first concert of the Boston Symphony's fall season, dealers there have been hard put to supply the demand for FM sets and tuners for use with high-fidelity audio systems, and they credit these sales to public interest in this station.

## What's New About It?

Because I wanted to know what kind of a station, educational or not, could attract such interest and attention, I went to Boston to find out. At that point, I knew only that WGBH was licensed to the WGBH Educational Foundation and that it was operated with the advice and cooperation of the Lowell Institute Cooperative Broadcasting Council. And I knew that Major Edwin H. Armstrong had presented a complete



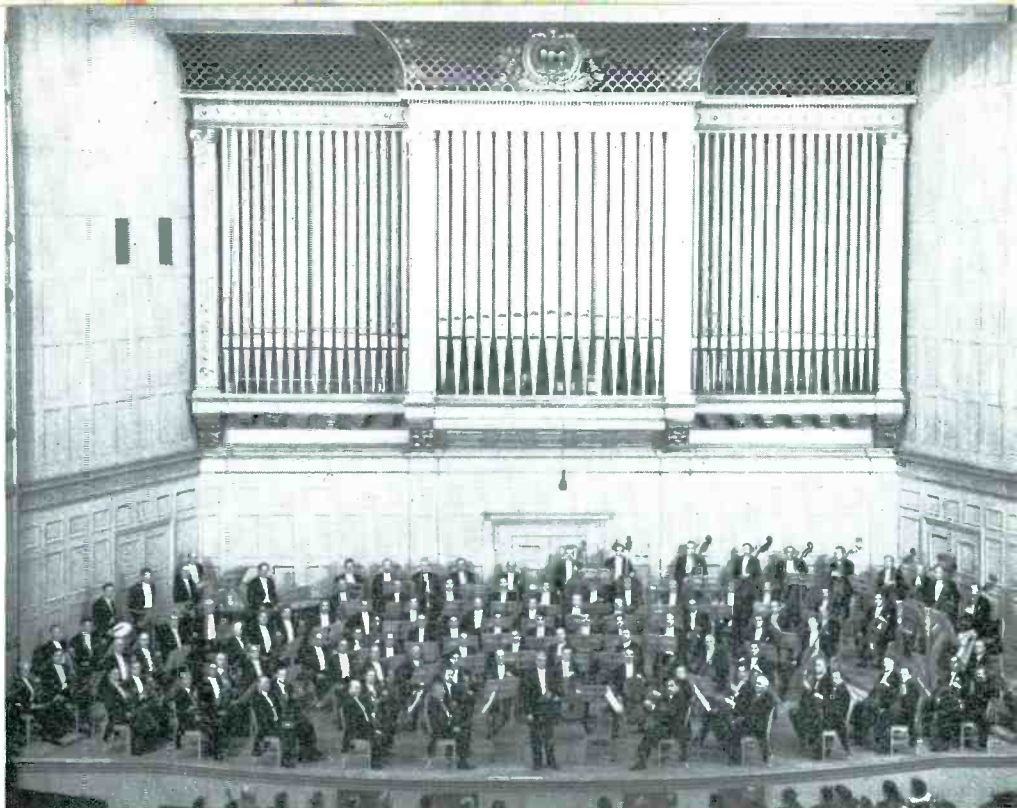
## By Milton B. Sleeper

REL transmitter to the Massachusetts Institute of Technology, for use at station WGBH.

My first meeting with Parker Wheatley, director of the Council and general manager of the station, was at the Harvard Club. Parker, I found, has that glowing enthusiasm born of idealism, and faith, and I thought as we sat in those sedate surroundings dominated by the magnificent portrait of Dr. James Bryant Conant, that it would take just such a mid-westerner to spark a project that might otherwise have relied on quality without benefit of spice and flavor.

As a prelude to our discussion of WGBH, Parker reminded me of things I had forgotten about the early days of broadcasting — how Herbert Hoover had expressed the confident opinion that such a public service would never become commercialized, and how David Sarnoff had predicted that broadcast stations, like public libraries, would operate under endowments. That was when stations were used to sell radio sets or to build good will. He recalled, and I had forgotten, that the first sponsors of radio programs were permitted to pay for talent, but not for time. They were allowed to give only their company names and addresses. Any mention of products, however, was forbidden because that was considered to be in bad taste, and station management generally held that such commercialism would offend their listeners.

In those days, the sole purpose of broadcasting was to perform a public service by providing entertainment, chiefly in the form of good music. The old formula hasn't been proved wrong, and good taste hasn't become obsolete, Parker continued, just because station



*LEFT: The WGBH transmitter at the Harvard observatory, on Greater Blue Hill, Milton, Massachusetts.*

*ABOVE: Conductor Charles Muench and the members of the Boston Symphony Orchestra, at Symphony Hall.*

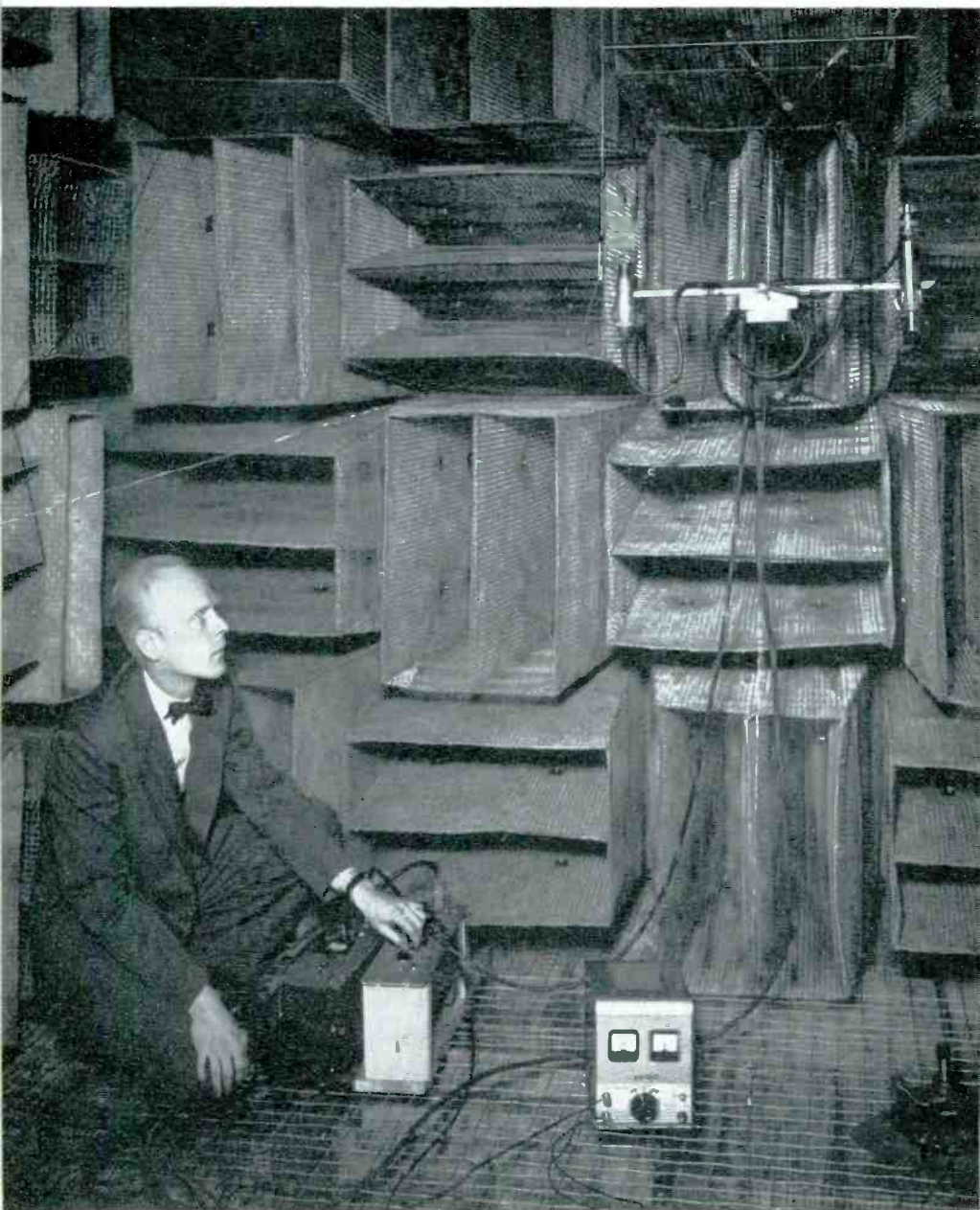
*BELOW: A photograph taken at the semi-annual meeting of the Lowell Institute Cooperative Broadcasting Council, on December 13, 1951.*

*Seated from left to right, are Dr. George R. Harvison, Dean of Science and Professor of Physics, MIT; Dr. John P. Tilton, Provost and Dean of the Graduate School, Tufts College; Ralph Lowell, Trustee of the Lowell Institute; Harrison Keller, Director, New England Conservatory of Music; George E. Judd, Manager, Boston Symphony Orchestra; Prof. Leo A. Martin, Director, Division of Radio, Television, and Theatre, School of Public Relations and Communication, Boston University.*

*Standing, left to right, are The Reverend Thomas F. Fleming, S.J., Assistant Professor of Government, Boston College; David W. Bailey, Secretary to the Corporation, Harvard University; Prof. Milton J. Schlagenhaut, Director of Public Relations and University Admissions, Northeastern University; William G. Dooley, Head of the Division of Education, Boston Museum of Fine Arts; Parker Wheatley, Director of the Council, and General Manager of WGBH.*

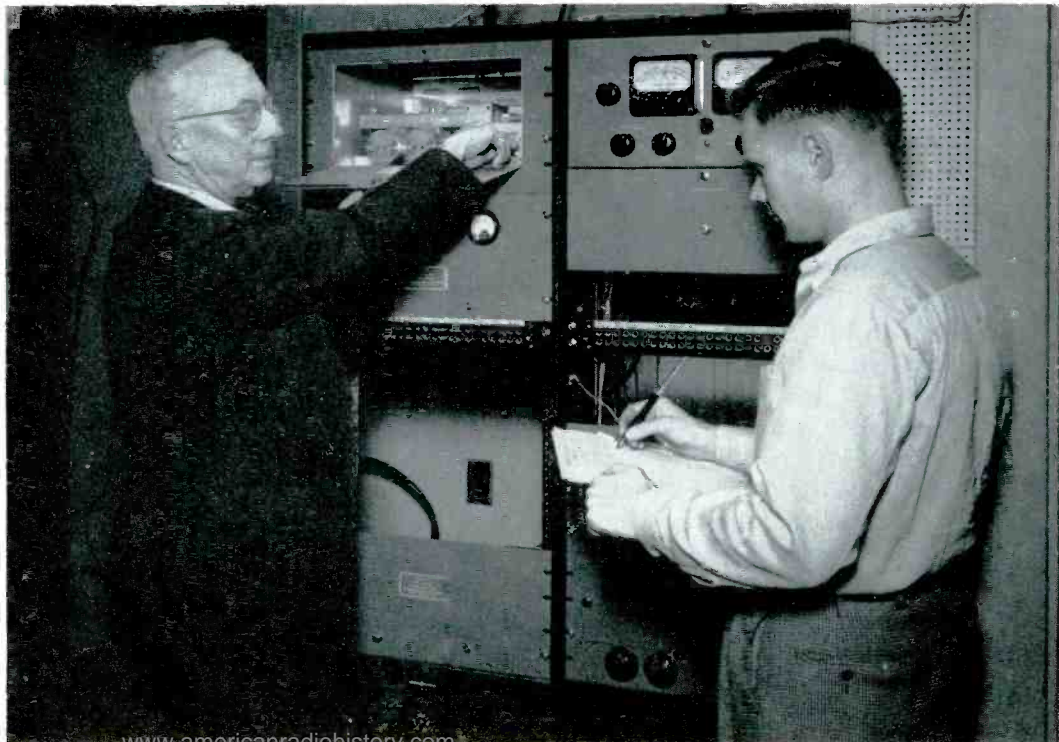
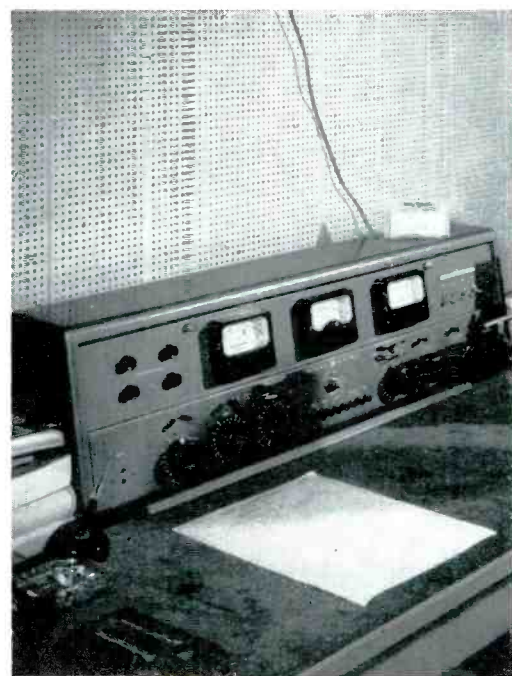






facilities are rented to companies who want to shout at people about "Tums for the tummy", and "the incredibly fast relief that Anacin brings"; to drum into their ears the demand that they should "sound off for Chesterfields"; or to jingle "smoke Lucky Strikes today" at them. Neither is there any evidence that listeners approve the shift to programs which ape the crime magazines, comic strips, and dime novels.

When I stopped to think about these things, as Parker reminded me of them that evening, I realized that we have come to accept the prevailing type of





programs only because the change was made so slowly we weren't conscious of it. And I remembered a remark someone made not long ago: "People listen to the damndest stuff on the radio. I wonder how many man-hours are wasted that way in the United States!"

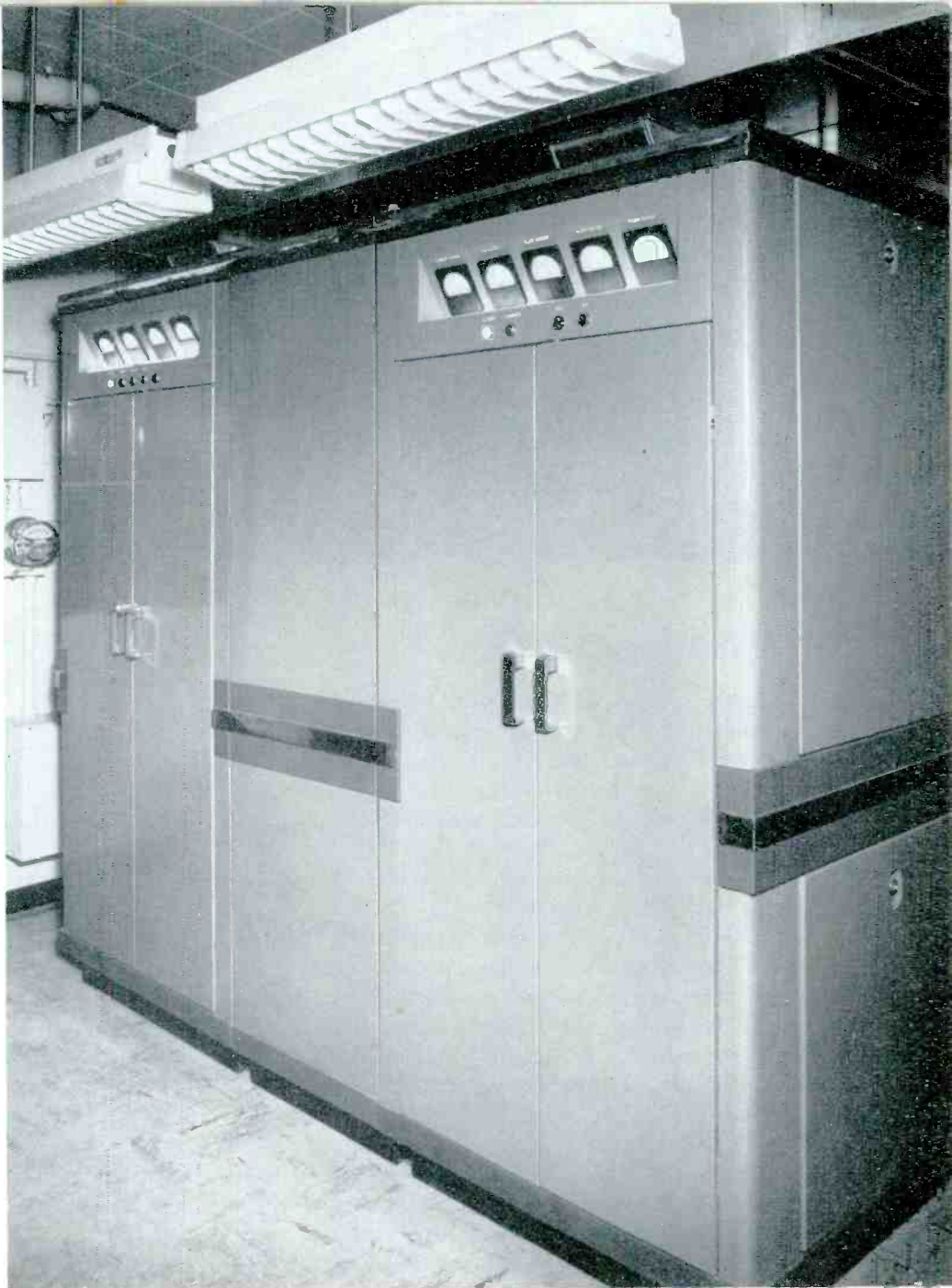
So Parker Wheatley explained the idea of returning to the policy of planning programs for the benefit of listeners, rather than for the profit of sponsors, even before he told me about the organization behind WGBH, and the operation of this new station. Here are the facts about this remarkable project:



**UPPER LEFT:** John A. Kessler, research staff member of the acoustics laboratory at MIT, with the setup used to check the microphone for picking up concerts at the Boston Symphony Hall.

**FAR LEFT:** William H. Radford, MIT Professor of Electrical Communication, serves as co-consultant for WGBH, and keeps a close check on the technical performance of the station. Through him, the engineering facilities of MIT were made available for the planning and installation of this project.

**LEFT:** Dr. E. Leon Chaffee, Professor of Applied Physics at Harvard, is also a co-consultant. As Director of Crust Laboratories, his particular interest is with the transmitter. In this photograph, he is checking the performance of the REL microwave receiver to which all programs are beamed from the radio link transmitter at the studio in Boston, 10 miles distant.



**CENTER:** This is the control console at the transmitter. In case programs from the studio are cut off temporarily, transcriptions can be played on the turntable at the right of the operator

**ABOVE:** This REL FM transmitter was the gift of Major Edwin H. Armstrong. It was presented to MIT, for use at the WGBH station. Instead of feeding the transmitter from the Boston studio by wire lines, a microwave studio-to-transmitter link is employed. This was done to provide full 15,000-cycle audio quality, and to eliminate the continuing charge for a telephone line. Use of the radio link also affords protection against interruption of service in case of a severe ice storm which might cause damage to wires run up the side of the Hill.

**RIGHT:** Chief engineer at WGBH is Richard E. Johnson, a broadcaster of long experience, who came to the new station from WCOP-AM-FM at Boston







*Looking into the control room from the larger studio at Symphony Hall. A Browning FM tuner and an H. H. Scott amplifier are mounted at the top of the racks on the right. These are used for monitoring purposes. Behind the operator are two Ampex machines which provide 15,000-cycle program quality from tape. Above the two transcription turntables on the left is the window which opens into a smaller studio, used principally for interviews.*

## The Organization of WGBH

The WGBH Educational Foundation, licensee of WGBH, is composed of Ralph Lowell, Trustee of the Lowell Institute; James B. Conant, President of Harvard University; Paul C. Cabot, Treasurer of Harvard University; James R. Killian, Jr., President of Massachusetts Institute of Technology; Joseph J. Snyder, Treasurer of M.I.T.; Henry B. Cabot, President of the Trustees of the Boston Symphony Orchestra; and Parker Wheatley.

Cooperating in the operation of WGBH is the Lowell Institute Cooperative Broadcasting Council, organized in 1946 for the purpose of adult education by radio, and spearheaded by the 116-year old Lowell Institute of Boston.

Under the will of John Lowell, Jr., one-half his estate was left for the establishment of the Lowell Institute, to provide free "public lectures to be delivered in said city of Boston, for the promotion of a moral, intellectual and physical instruction and the education of the inhabitants of said city." It is interesting to note that his will further provided that all available funds should be used for intellectual advancement, and not for the erection of buildings. That is why plans for WGBH



*Outside programs can be brought in by telephone line and recorded on this Magnacord machine, monitored by Nancy Maguire.*

were worked out in such a manner that the offices and studios of the station are located in Symphony Hall, and the transmitter, in Harvard University's weather observatory on Great Blue Hill, 10 miles away.

The Broadcasting Council is comprised of ten coordinators who represent the participating institutions, with Parker Wheatley as director of the Council and general manager of the station. The photograph on page 61 was taken last December, at the semi-annual meeting of the coordinators from:

- Boston College
- Boston Symphony Orchestra
- Boston University
- Harvard University
- Lowell Institute Foundation
- Massachusetts Institute of Technology
- New England Conservatory of Music
- Boston Museum of Fine Arts
- Northeastern University
- Tufts College

These institutions contribute nearly all the program material carried by WGBH and, though not without some



difficulty, are carrying the expense of operating the studio and transmitter. Newspaper accounts of a \$300,000 grant from the Ford Foundation last summer gave the impression that this sum was made available for the operation of the station. Actually, that was not the case at all. The grant was made to the National Association of Educational Broadcasters, comprising some one hundred stations and producing agencies, for the production of a group of educational radio programs to be distributed nationally. The confusion probably arose from the fact that Ralph Lowell, Trustee of the Lowell Institute and President of the WGBH Educational Foundation, was asked to act as trustee of the Ford grant.

In the matter of technical operation, WGBH is most fortunate. Working with chief engineer Richard E. Johnson are William H. Radford, Professor of Electrical Communication at MIT, and E. Leon Chaffee, Professor of Science and Applied Physics at Harvard, who serve as co-consultants. Thus the facilities of two of the finest laboratories in the Country are available for maintaining the quality of studio and transmitting equipment at peak efficiency.

### Programs Carried by WGBH

The service area of the transmitter has a radius of 80 miles or more, extending into all the New England states. This represents a potential audience of 5 million people, or 1.46 million homes. At the present Pulse figure of 18.4% FM set ownership, WGBH programs are now available to about 1 million people. Transmission is on 89.7 mc., from 3:00 to 10:30 P. M., except during the Boston Symphony season when, on Fridays, broadcasting starts at 2:10, and on Saturdays, when it continues to the close of the performance.

One reason, undoubtedly, for the popularity of this station is that nearly all programs are live-talent broadcasts, or are direct tape recordings of 15,000-cycle quality. The Boston Symphony concerts, of course, are transmitted

direct from Symphony Hall, with the full realism that FM can provide. This alone is ample justification for fine FM sets and hi-fi audio systems in the WGBH area.

Similarly, the plays and lectures are broadcast direct or, if the timing does not fit into the station schedule, they are transmitted from tape of such excellent audio quality that listeners do not realize that the programs are recorded. The use of disc transcriptions is limited to special productions by the British and Canadian Broadcast Companies and Radiodiffusion Francaise.



*Editor Barbara Wolfe listens to each program tape, cuts out irrelevant parts, and in this way produces smooth-flowing continuity.*

In addition to music from the Boston Symphony and the New England Conservatory of Music, the program content is made up of:

1. Regular college and university extension courses, lectures, and addresses from the classrooms of the cooperating colleges and universities.

*Continued on page 78*

**RIGHT:** *The operator at the control console watches Mrs. Harper, left, through the studio window, and listens to her voice over the monitor speaker.*

**LEFT:** *Part of the charm of Mrs. Nancy Harper's Children's Circle program lies in the fact that she sits on the floor to address the microphone just as she would talk to a group of children if they were with her in the studio. When this photograph was taken, she had her audience playing a game, and she had just exclaimed: "There it is!"*





# RESPONSE CURVES

By G. A. BRIGGS

**EDITOR'S FOREWORD:** *In the preceding issue of HIGH-FIDELITY, Mr. Briggs began what is to be a series of articles with a description of the ear and its relationship to a loudspeaker. The second article was to have dealt with room acoustics, for this is the next major link as we work back toward the original sound.*

*In preparing material for his discussion of room acoustics and their effect on sound reproduction, Mr. Briggs faced two problems: First, how to analyze the sound output of a loudspeaker, and second, how to "pictorialize" sound for his readers.*

*The standard method of analyzing frequency response is to feed a speaker with a source of undistorted, single-frequency sound, set up a microphone to pick up the sound from the speaker, and then measure with a meter the loudness of that sound as "heard" by the microphone.<sup>1</sup> As the frequency of the input is varied, the meter is read off and the readings plotted on a graph, output volume versus frequency.*

*This description is rudimentary; there are complications and refinements galore. But one weakness is characteristic: the microphone does not discriminate frequencies and the meter reports the total sound level at the microphone.*

*As an exaggerated example, we might imagine feeding a pure 50-cycle frequency to a loudspeaker. The speaker, however, might reproduce at 100 cycles, and throw in harmonics at 200 and 400 cycles, just for good measure. The microphone, and the meter, being frequency-blind, would indicate plenty of loudness. If we were not wary, we might then conclude that the speaker's reaction to a 50-cycle stimulus was excellent.*

*The primary weakness of this method is the frequency-blindness of the meter. To overcome this weakness, Mr. Briggs pushed to conclusion a series of experiments undertaken to perfect an original and improved method of analyzing reproduced sound. In essence, he substitutes an oscilloscope for the meter mentioned previously and records the results on film.*

*Development and perfection of this method enables readers of HIGH-FIDELITY to see and analyze loudspeaker reproduction in a way that has not been publicized before. Both Mr. Briggs and the Editor felt that, before discussing the complex problems of room acoustics, an explanation of present methods of analysis, and examples of results achieved by Mr. Briggs' development, would increase the value of his subsequent writings for our readers. His article on room acoustics will appear, therefore, in the next issue of HIGH-FIDELITY. Because of the developmental work described in these pages, it will have special significance for both technical and non-technical readers.*

**N**OBODY with any experience in the design or testing of loudspeakers would ignore or despise the value of the normal pressure response curve. Such curves are usually based on performance in anechoic rooms,<sup>2</sup> which have the following advantages:

- 1) Isolation from external noise and weather conditions.
- 2) Uniform acoustic conditions, with limitations known to engineers in charge.
- 3) Convenience in use.
- 4) Recording on calibrated paper with immediate picture of results.

Skilled investigators know very well how to interpret

the readings obtained under these conditions, but a true assessment is very difficult for the layman. It is therefore timely to draw attention once again to the known limitations of the response curve as usually published, and to suggest complementary methods of working.

Developments on these lines were, in fact, prognosticated by the I.R.E. under "Methods of Testing Loudspeakers", outlined in 1938. Referring to testing under actual conditions of use, the following statement was made: "As the art in sound measurements progresses, this type of measurement will become more important."

These 1938 standards appear to be the latest that have been laid down, and the free field response curve still, so to speak, holds the field.

## Limitations

A summary of the most obvious weaknesses of this method would include the following:

**NON-LINEARITY.** The conventional curve does not expose the presence of non-linearity at low frequencies, which may be caused by cone resonance, faulty or badly designed suspension, excessive cone movement, or unsuitable air-loading. The supreme importance of avoiding such non-linearity should never be overlooked. Apart from dirty bass, it produces intermodulation and distorts the high frequencies, unless these are removed to a separate loudspeaker where they are out of reach of the evil influence.

**TRANSIENTS.** The conventional curve also fails to expose the transient response. This has already been made abundantly clear by Mr. Shorter, of the B.B.C. Research Department, and by B.T.H. engineers. I will not waste time and ammunition firing at a target already riddled with holes made by such first-class marksmen, beyond drawing attention to the fact that a cheap, low-flux magnet<sup>3</sup> may produce a smoother response curve in the upper register, with a given cone and voice coil, than an expensive, high-flux magnet.

It is customary to take response curves at a standard input level of 1 watt at around 500 cycles. This is rather unfortunate and, obviously, accounts for the anomaly just described. It would be better if curves could be related to a standard output level, but this would be much more difficult to measure. The performance in the upper register would then be compared at the same intensity of cone agitation, as the input level would have to be increased

<sup>2</sup>Loudspeakers are normally tested under one or more of three basic conditions: outdoors, in a "free field", where reflections from other surfaces are not a problem; in anechoic or non-reverberant rooms — the nearest indoor approach to the free field; and in reverberant rooms in which no special effort has been made to minimize reflection and absorption by walls or furnishings. — Editor.

<sup>1</sup>For a more detailed description of this method of testing frequency response, see HIGH-FIDELITY, Vol. 1, No. 3, p. 25.

in the case of low flux density. Improved transient response always justifies the use of high flux density, which may provide sufficient damping at low frequencies to obliterate the cone resonance completely.

**AIR-LOADING.** The main indictment of the response curve in the charge of "deceiver of men" is in relation to air-loading of cone, usually accomplished, with varying degrees of success, by the speaker enclosure. The line hitherto taken up and accepted by all and sundry appears to have been: "Room conditions are variable and unpredictable; they must, therefore, be ignored." There are, of course, exceptions, but the only way to limit the differences between free field and actual use conditions to those due to the characteristics of the listening room would be to mount a loudspeaker in a totally enclosed cabinet, take a curve, and then use the speaker in the same cabinet. In all other cases, the tremendous effect of the method of mounting must be borne in mind, as radiation from the rear of a cone often has more influence on results in the home than the frontal emission used in response curves.

### Oscillograms

In a short article, it is impossible to prescribe a remedy for all the ills and shortcomings which have so far been outlined. It is, however, suggested that more intensive use of oscilloscope would help to dispel some of the illusions. The inertia of the tracing mechanism used in recording pressure curves precludes the observation of single sound-waves, and the system is too clumsy to follow the sharpest transient effects. On the other hand, the oscilloscope easily provides a record of activities at all frequencies within the audio range and for many octaves beyond, if required. The result is that, in addition to recording mere intensity of sound, inspection of quality becomes possible, through evidence of non-linearity, sub-harmonics, intermodulation, and effect of room acoustics. This appears to open up a new field of presentation of loudspeaker performance for the benefit and guidance of the quality enthusiast.

There follows brief description of some of the results obtained by the writer. I am rather fortunate in that my research room overlooks a large field which is reserved by a beneficent local authority as a recreation ground for children. The grass is usually about 18 ins. long, and there is absolute quiet. In short, I have a very nice free field — free of cost and free from noise. The unit under test is mounted in the wall of the room, facing outside, at a height of some 16 ft. above the ground, giving virtual freedom from reflection. Unless otherwise stated, the input to the loudspeaker is set at approximately 1 watt at 500 cycles — the power used has considerable bearing on results — and

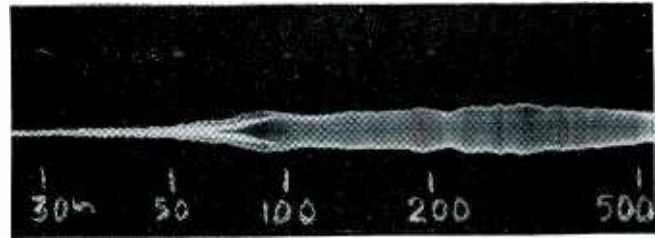


Fig. 1. Oscillogram of free field response of typical 8-in. speaker. This is a visualization of the sound output of the loudspeaker under test. The brightness of the trace in the 50 to 100-cycle zone should be noticed especially, because it indicates frequency doubling. Input level 1 watt at 500 cycles.

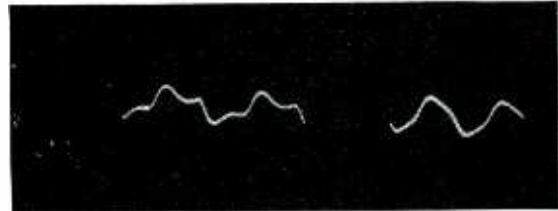


Fig. 2. Photographs of the waveform at 60 and 80 cycles of the speaker described in Fig. 1.



Fig. 3. Oscillogram of free field response of typical 10-in. speaker. Note the difference in the contour of the trace above and below the dark center line. This indicates faulty cone suspension. Input level 1 watt at 500 cycles. Microphone 12 ins. on axis.

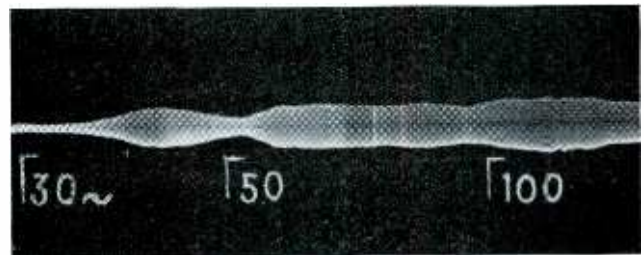


Fig. 4. Output of a 15-in. bass speaker mounted in a brick corner reflex enclosure of 9 cu. ft. This is an exceptionally even and clean frequency response; there is no evidence of frequency doubling as shown in Fig. 1. Speaker cone used cloth suspension. Input 1 watt at 500 cycles. Microphone 12 ins. on axis.

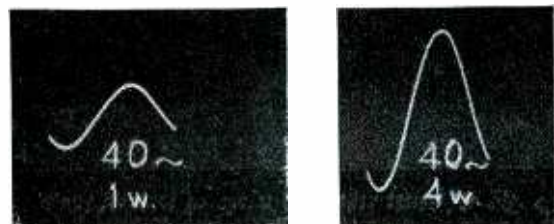


Fig. 5. Wave form at 40 cycles of speaker tested for Fig. 4, with inputs of 1 watt, left, and 4 watts, right.

<sup>3</sup>Flux density, a characteristic of loudspeaker magnet construction, is widely used in England as a measure of speaker quality — much as U. S. manufacturers report the weight of the magnet in their units. In his book, "Loudspeakers", Mr. Briggs has this to say: "Apart from improving sensitivity, high flux density increases the damping on the voice coil and gives life and attack to the reproduction with wider response range, and improved power handling capacity at low frequencies."



the microphone is placed at 12 ins. on axis. This arrangement corresponds to standard free field testing practice.

Figs. 1 and 2 show the free field response of a typical 8-in. speaker up to 500 cycles, together with an oscillogram of the wave form at 60 and 80 cycles.

It is interesting to note the build-up of cone resonance between 70 and 80 cycles, with frequency doubling and trebling shown by brighter intensity in the trace. In relation to total output, the proportion of frequency doubling below the cone resonance gradually increases. Above the resonance point the quality improves and is almost linear at about 105 cycles.

### Faulty Suspension

Because the oscilloscope records both positive and negative half-cycles of the sound waves, it exposes any non-linearity in suspension of cone or in the action of the centering device. A typical example is given in Fig. 3.

### True Bass

Any system of inspection or recording which exposes distortion or non-linearity, also possesses the virtue of confirming the absence of these undesirable elements.



Fig. 6. Free field response curve waveforms of typical 12-in. speaker. No negative feedback; impedance source 100 ohms. Note the bump in the 60-cycle zone and evidence of frequency doubling.



Fig. 7. Conditions same as in Fig. 6 except that 14 db of feedback employed. Cone resonance around 60 cycles has disappeared.



Fig. 8. Same as in Fig. 6 and 7, except feedback increased to 26 db; source impedance 1 ohm.

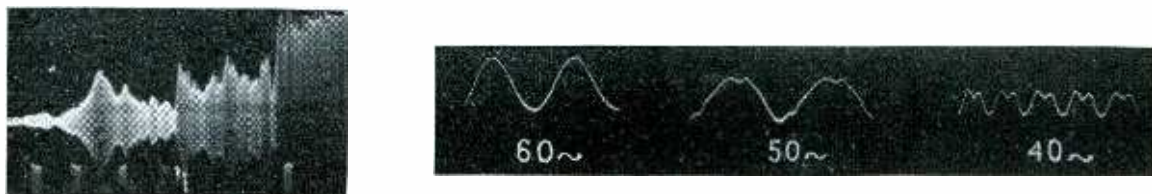


Fig. 9. Conditions here correspond to Fig. 6 except that speaker has been mounted in a reflex cabinet and the test made in a reverberant room instead of a free field. No negative feedback.

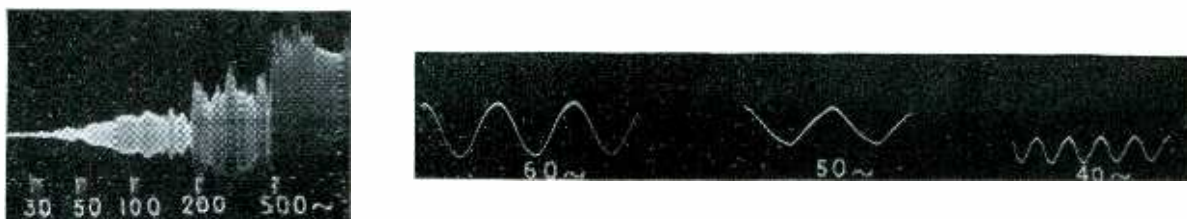


Fig. 10. Same as in Fig. 9 except for 14 db. of feedback. Note how resonant peak around 70 cycles has been eliminated and the entire response up to 200 cycles improved.

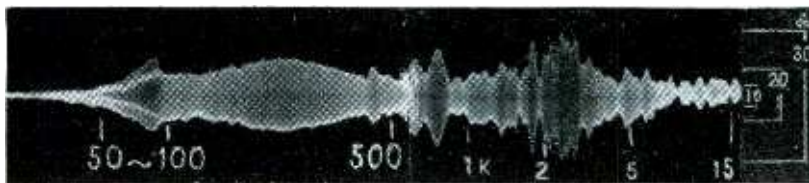


Fig. 11. This and Fig. 12 show effect of changing the magnet on a speaker. An 8-in. unit, 8,000 lines, input 1.4 volts, tested in a free field. Resonant peak at 80 cycles and frequency doubling are evidenced.

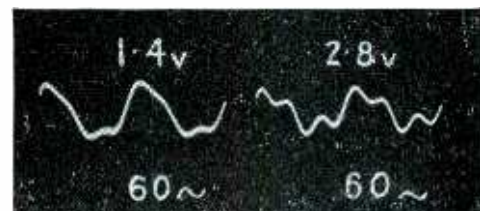


Fig. 13. Wave form of speaker used in Fig. 11.

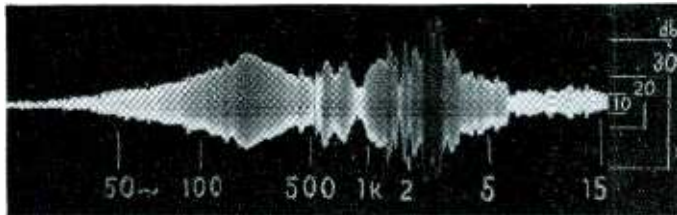


Fig. 12. Same 8-in. speaker was used here, but magnet was changed to one having a flux density of 13,000 lines. Input increased from 1.4 to 2.0 volts. Resonance and doubling have disappeared.

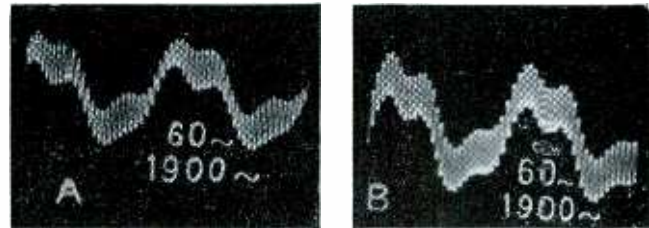


Fig. 14. Intermodulation distortion is shown in the left-hand trace by difference between contours of bottom and top lines. Speaker was 8-in.; input 60 cycles, 2.8 volts. A 1,900-cycle tone was fed in with 60-cycle tone. At right, the 1,900-cycle tone was switched to another speaker; contours of top and bottom lines become the same.

This platitude is neatly illustrated in Fig. 4. The response curve up to 150 cycles is shown and looks very clean. Pictures of the wave form at 40 cycles, with the input increased to 4 watts, show no evidence of distortion. In other words, the production of second or third harmonics is avoided.

Although the oscillograms of Fig. 4 were taken under live room conditions, they give a very good indication of the low frequency performance of the speaker system. It was observed and confirmed by numerous tests with different loudspeakers, that a corner position showed the least interference from room reflections, with maximum output. Standing wave effects at low frequencies were avoided by placing the microphone near the speaker. In the room used, (16 by 15 ft.) strong reflections became evident at about 200 cycles and upward.

### Cone Resonance

It is common practice to take response curves under constant voltage conditions, or with a low impedance source, which has the rather misleading effect of damping out the main cone resonance. The three sets of oscillograms, Figs. 6, 7, and 8, show the effect of altering the negative feedback with tetrodes from zero to 26 db, which is equivalent to reducing the impedance source from about 100 ohms to 1 ohm. A typical 12-in. 15-ohm speaker was used. Note the improved low frequency wave form as feedback is increased, and the more uniform response level. Frequency response correction had been deliberately omitted from amplifier.

No doubt some readers will be shocked when they notice the lively output in the region of 1,600 to 4,000 cycles. It must be admitted that many cones used in 12-in. speakers show a tendency to peak in this region, (with smaller cones the affected range is at higher frequencies) but it is very important to remember that these oscillograms depict both halves of the sound waves. Visually, this

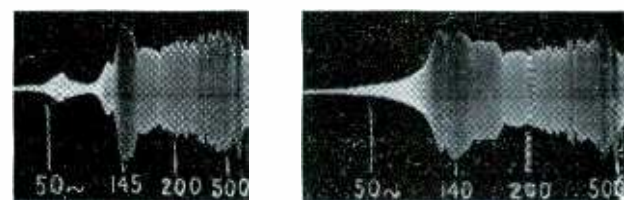


Fig. 15. These four oscillograms illustrate the difference between free field and reverberant room tests, and the effect of a closed back cabinet. Speaker was 10-in. unit mounted in a 12-in. cube lined with felt. Input 1 watt; microphone on axis. A and B are free field tests; A with back opening 1 by 8 ins., B with back closed. C and D are live room tests; C with back opening of 1 by 8 ins., D with back closed.

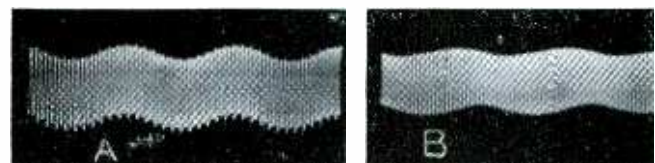


Fig. 16. A. Output from two 8-in. speakers producing respectively 90 and 2,400 cycles. Note sub-harmonic effect at 1,200 cycles, and very slight non-linearity at low frequency. In B, 2,400-cycle note was switched to speaker carrying the 90-cycle tone.

makes the peaks appear twice as bad as they really are. When room reflections are added, the significance of the peaks recedes still further, as the next oscillograms begin to show.

For the purpose of Fig. 9, the 12-in. unit was mounted in a reflex cabinet (34 by 16 by 17 ins.) and a live room record of its behavior was secured, *Continued on page 70*



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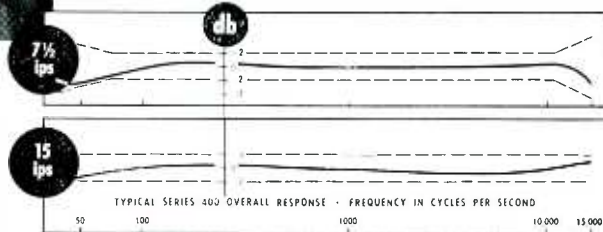
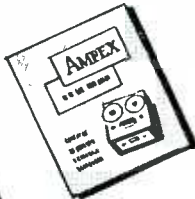
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Magnetic



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Redwood City, California  
Distributors in Principal Cities

## RECORDERS

## RESPONSE CURVES

*Continued from page 69*

using the same tetrode source at 1 watt. The reflex loading gave an increased output between 30 and 50 cycles, with a pronounced resonant peak at 75 cycles which was completely removed by 14 db of negative feedback. Room reflections start suddenly at about 200 cycles, followed by a still more prominent outburst at 500 cycles. In view of the improved low frequency quality from reflex loading, the wave form at 40 cycles is also shown.

### Input Level and Intermodulation

The folly of judging loudspeakers on the basis of a common input level has already been referred to. In order to make an exact test of the effect of flux density, arrangements were made to change the magnet on a typical 8-in. unit from 8,000 to 13,000 lines flux density. The voice coil had a resistance of 2 ohms. Input was varied from 1.4 to 2.8 volts at 500 cycles — approximately 1 to 4 watts. The two curves of Figs. 11 and 12 reveal interesting results. The impedance source in this case was 2 ohms.

Observe how neatly the high flux density has removed the cone resonance, in spite of the increase from 1 watt to 2 watts. If the power used with the smaller magnet is increased to reach an equivalent acoustic output, the cone resonance and distortion are intensified, with more and more intermodulation distortion. These effects are illustrated in Figs. 13 and 14.

Intermodulation is a problem which is widely known but often imperfectly understood. It is important to remember that there is no intermodulation distortion in a single speaker as long as there is no non-linearity at a single frequency. In the left-hand trace of Fig. 14, the contour of the bottom line does not follow the shape of the top line; the 1,900-cycle component is therefore being constantly modified. To the ear, this produces harshness, which disappears when the 1,900-cycle note is switched to a separate speaker. The low frequency distortion is, of course, audible all the time. The magnet used here had 8,000 lines flux density. Changing this to 13,000 lines would produce the same acoustic output with a reduction of input from 4 to 2 watts. This would clearly reduce the non-linearity and remove much of the intermodulation distortion. It is true that distortion becomes less objectionable to the ear as the frequency goes down. This is partly due to the lower sensitivity of the ear at low frequencies. If, however, we look upon the distortion as a disturbance which occurs in each cycle of the sound wave, it is only logical to assume that the nuisance value will go up as the frequency is raised. A further illustration of intermodulation is given in Fig. 16.

### Air-Loading

The importance of oscilloscope readings in exposing faults such as frequency doubling and non-linearity in the bass has been made abundantly clear. It is much more difficult to outline any reliable application of the

*Continued on page 72*

for new adventures in music appreciation

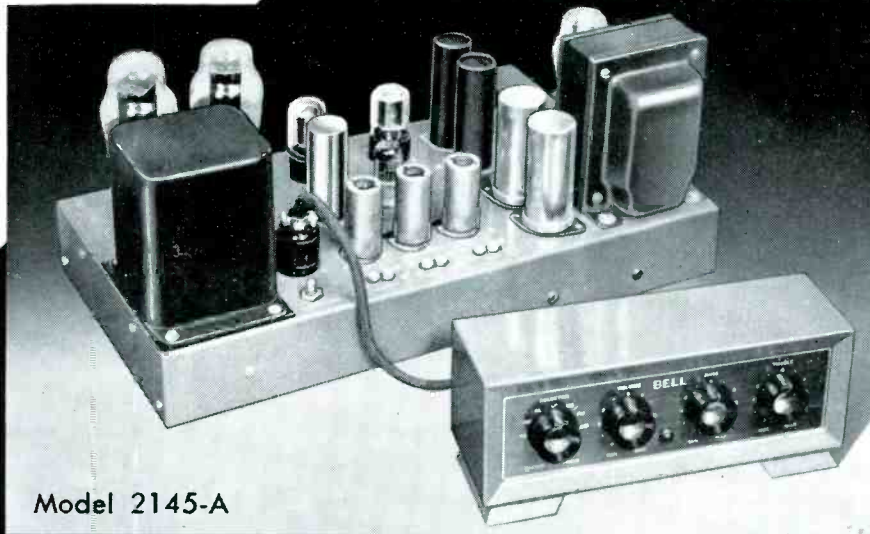
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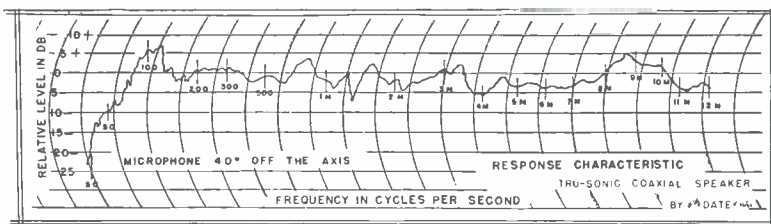
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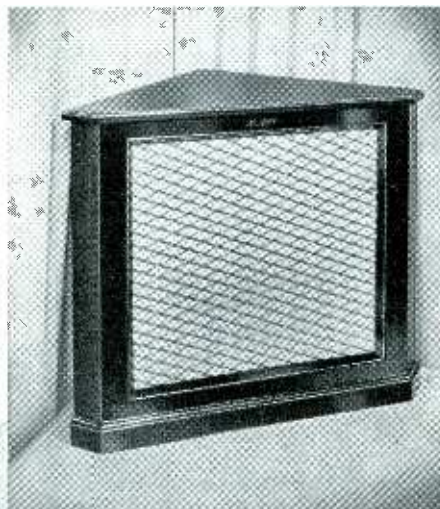


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## RESPONSE CURVES

Continued from page 70

system for revealing the benefits of suitable air-loading (reflex, horn, etc.). Room effects are even more difficult to master. We must therefore content ourselves here with Fig. 15, which illustrates the enormous difference up to 500 cycles between free field curves and those taken under live room conditions. The writer claims that the latter correspond more closely with what is heard, especially when back radiation from cone is involved.

The speaker used here was a non-commercial guinea pig; a 10-in. unit mounted in a 12-in. cube, with sliding doors to the back to provide a means of tuning the cube resonance between 140 and 180 cycles.

It is interesting to note that the totally enclosed condition reduces the disparity between free field and live room results. This is in accordance with expectations. It should be pointed out that for the live room readings the microphone distance was reduced from 12 ins. to 8 ins. in order to minimize room reflections; hence the higher intensity level.

The tests were originally made for comparing results with various tuning of the cabinet. They are being used here for a rather different purpose, but they amply illustrate the point at issue.

## Sub-Harmonics

The production of sub-harmonics at spot frequencies, usually between 1,000 and 5,000 cycles, is a well-known bad habit of "loud" cones, and is most commonly found in 8-in. speakers. The fault is easily heard by a listening test with an audio oscillator, but is not shown up by the conventional response curve. Incidentally, the trouble is intensified by increase of flux density. At a given input level the fault could be absent with a magnet of 8,000 lines flux density, but could be quite prominent with a magnet of 13,000 lines. The obvious remedy would be to fit a heavier and smoother type of cone to the improved magnet.

The oscillograms of Fig. 16 are intended to show one of these sub-harmonic effects as well as a further example of intermodulation. Fig. 16-A shows the output from two 8-in. speakers—one with an input at 90 cycles and the other at 2,400 cycles. The sub-harmonic is formed in the treble unit at 1,200 cycles, shown by the increased output in alternate waves of the 2,400-cycle trace. There is also a very slight non-linearity in the low frequency of 90 cycles.

Switching both inputs to one speaker removes the sub-harmonic due to difference in type of cone and reduced intensity, but intermodulation is introduced as a result of the slight non-linearity at 90 cycles.

## Conclusion

Electro-acoustic research is usually classified under two headings—subjective and objective—meaning, I suppose, theoretical and practical (I can never remember which is which). They are both of great importance to progress. The present article deals only with practical tests, but it is suggested

Continued on page 74



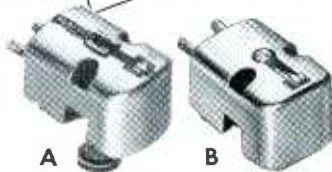
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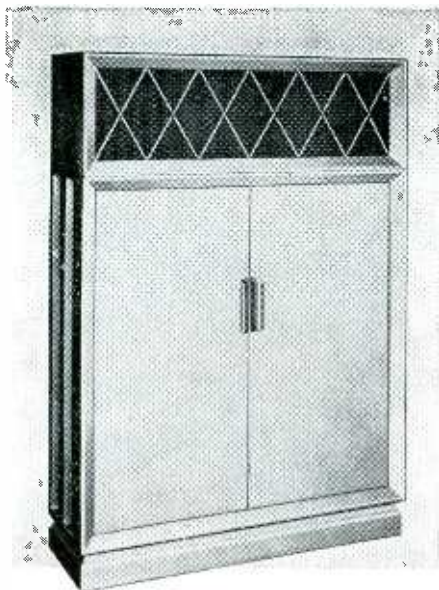
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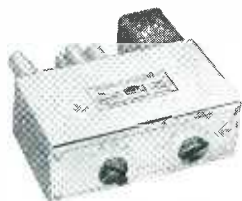
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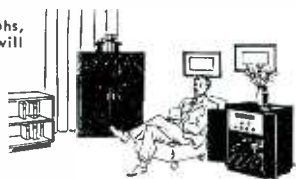
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## RESPONSE CURVES

*Continued from page 72*

that oscillograms help to bring the two fields of research into closer relationship. For example, there still appears to be some doubt about the correct interpretation of resonances which occur when reflex loading is added to a loudspeaker. No doubt oscillograms could be used to settle the problem once and for all.

It is not suggested that the pressure response curve is useless or obsolete. The object of this article is to clear the air and to help the actual user of the loudspeaker to have a better understanding of its function.

## DISPOSE OF THE BODY

*Continued from page 59*

In Fig. 4, an Electro-Voice Model 650 microphone is shown attached to the plywood sub-base. This is a useful stunt, but to be reserved primarily for emergencies. We discovered that the thread on the standard microphone cable connector corresponds to that used on microphone stands. Hence, it is possible to screw the microphone base to one of the connectors — should the regular stand have been left behind. With some microphones, there may be bad vibration pickup, however. The Electro-Voice shown here comes complete with a very good shock-mount built into the support, so little trouble has been experienced with vibration pickup. For photographic purposes, the microphone was faced across the top of the recorder; in actual practice, it should be faced away — so that the noise made by the motors will not be recorded.

## Conclusion

As mentioned at the beginning, these photographs and sketches are shown here for their value as ideas and suggestions. Each installation will be slightly different, depending on equipment, requirements, and the uses to which the equipment will be put. That, in itself, is one of the great advantages of custom installation of components: maximum flexibility and utilization of components can be achieved.

The fact that we have already seen room for improvement in these designs indicates the need for very careful planning and much forethought. It is strongly recommended that, before any construction is undertaken, a long list be drawn up of every conceivable use for the equipment under consideration. Only in this way can ultimate satisfaction be achieved.

Finally, we want to take this opportunity to express our appreciation to Marsh B. Giddings, Jr., industrial arts instructor and chief cabinet designer for Almar Woodcrafters, for his patience in listening to our endless list of conceivable uses, and for his ability to translate these requirements into something at once practical and attractive.

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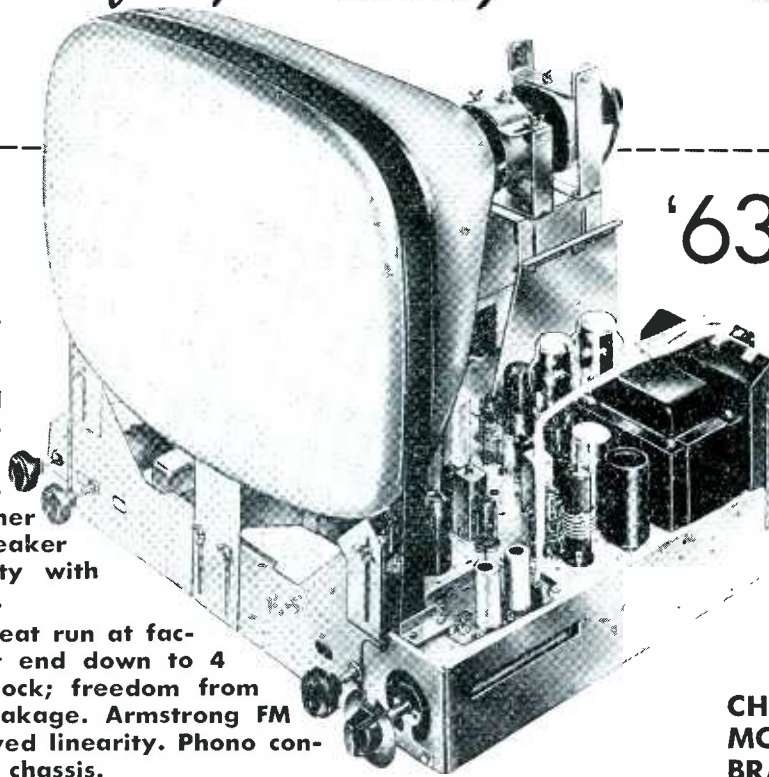
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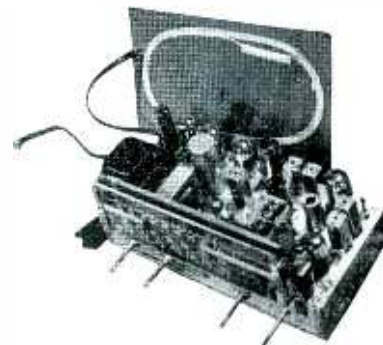
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## WORN NEEDLES

Continued from page 32

**ASTATIC "U" AND "C" NEEDLES:** The U needles are used in the U-type cartridges shown in Fig. 17. The C needles are almost identical to the U-type, and are used in early Markel changer cartridges. The U and C needles have tapered shanks that fit into a tapered groove which is part of the cartridge. This type can be removed with the thumbnail, by pulling back against the rear hook of the needle, visible as a white rectangular spot at the rear of the tapered groove in Fig. 17. (The needle tip in this photograph is slightly out of focus and cannot be clearly distinguished). To re-install a U or C needle, it should be positioned in the groove and then pushed forward against the rear hook.

## Conclusion

From the foregoing discussion, it can be seen that changing a stylus is not at all a difficult operation. The small amount of labor, and relatively low cost of using a diamond stylus will be repaid many times over by the saving in wear and tear on valuable records.

## WGBH

Continued from page 65

2. Forum discussions and interpretations of world affairs by distinguished scholars and scientists.
3. Full-length productions from the Brattle Theatre in Cambridge, Tufts College Arena, and other dramatic groups.
4. Special musical programs from the Continental Network, originating at Washington.
5. The Children's Circle, Monday through Friday, presented in consultation with Tufts College Nursery [Teachers] Training School.

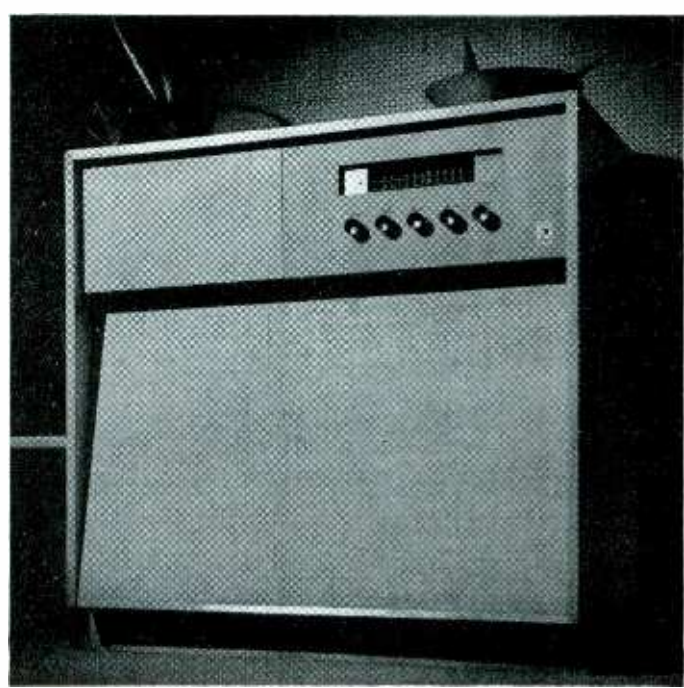
Some notes on the Children's Circle will serve to emphasize the essential difference between the aims of programs planned for WGBH and those which follow the current commercial pattern.

Mrs. Nancy Harper, who has two youngsters of her own, directs her scripts to children two to six years old. Each program is carefully planned to tie in with the seasons of the year or events that affect the daily lives of the children, or with their emotionally-based problems. In contrast to audio and video programs in which the children play only the passive part of the audience, Mrs. Harper makes them play an active part by instructing them to do certain things in the course of the program. And, having called for action, she pauses long enough for them to do whatever is necessary, whether it is to see if they have put their rubbers neatly in place, or to draw conclusions or make decisions based on the story she is telling. The practice of telling children what they should do or think, or making direct statements that Johnny Jones did this or that and so should you is strictly taboo on this program.

Continued on page 77



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And the conclusion, instead of inciting the children to buckle on their pistols for a bandit hunt or to scream for Wheaties, is carefully planned to relieve emotional tensions.

This brings up the logical question: "Can such a program attract and hold the children's interest?" I asked Mrs. Harper about that, mindful of the fact that, in timing, it is in direct competition with Howdy Doody on television. She said: "Yes, the Children's Circle is competing very successfully. Letters to the station indicate that it is preferred in a steadily increasing number of homes where youngsters can make their own choice."

Studio and Transmitter Facilities

A number of photographs of the studio and transmitter installations are reproduced here for the benefit of readers who are interested in those details. One of these illustrations shows Miss Nancy Maguire monitoring the Magnecord tape equipment used to record outside programs which come in by telephone line. In many cases, portable Magnecord units and microphones are carried out to classrooms or lecture halls where suitable telephone lines are not available.

Tapes are then edited by playing them on a desk-type machine. The editor, Miss Barbara Alice Wolfe, listens with headphones so that the sound will not disturb those working near her. A graduate of Radcliffe Teachers College, she is a former school teacher who had specialized in educational radio work. Her editorial task is to cut and piece together the tapes so as to remove pauses, interruptions, noises, and irrelevant remarks, in order to keep a smooth-flowing continuity in the program material. Sometimes, the elimination of *ers* and *aaahs* and other distracting speech habits calls for particularly frequent and skillful patching of the tape.

There are two views of the control room, one showing the operator's side of the REL control console, and the other looking in through the window of the larger studio. Ampex machines, installed behind the operator, are used for tape broadcasts. At one side are two turntables, and on the other side, racks which carry jacks for cutting in various program circuits. Above them are a Browning FM tuner and an H. H. Scott amplifier for monitoring.

This installation is immediately adjacent to the stage of Symphony Hall. However, a small, auxiliary control room, high above the auditorium, is used for the concerts. It is not illustrated because the space was too small to set up a camera.

Programs are fed from the control room to an REL microwave transmitter, with a dish-type antenna on the roof of Symphony Hall, directed toward the Blue Hills transmitter site. The picture of Dr. Chaffee shows the microwave link receiver. Originally, it was connected to a receiving dish at the base of the RCA pylon antenna. Later,

Continued on page 78



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W G B H

Continued from page 77

a second dish was put up on the observatory building, but the old one is kept as a spare.

Two other illustrations show the 3-kw. REL FM transmitter and the associated control console. The turntable beside it is provided so that records can be used in case the studio program should be cut off.

The Future of Non-Commercial Broadcasting

Although many educational stations are on the air, WGBH has been featured here because it is outstanding in the strength and scope of the organization behind it, and in the high technical standards represented in its equipment and performance.

Much less elaborate installations can be operated at considerably lower expense. However, compromise in program content and signal quality are quickly, though perhaps unconsciously, recognized by listeners. Any effort to benefit the public, no matter how sincere the effort, must nevertheless compete with the efforts of commercial stations to attract listeners. Thus, the success of a non-commercial station depends directly on both program content and signal quality. Listeners are not tolerant of compromise in either respect. The reason that the sale of FM receivers has increased so rapidly in the Boston area since WGBH went on the air is that it is not merely competing with the local commercial stations, but it is performing a distinctly superior public service in many respects.

There is no intention to infer that the WGBH type of operation should or can replace commercial broadcasting. Public interest is made up of many facets, and represents many age groups and intellectual levels. Disc-jockey shows, soap operas, and whodunits will still have their audiences, and people who want to hear them will continue to endure the cacophonous repetition of plugs for soap, cereals, cigarettes, sedatives, and stomach settlers. Still, there is every reason to expect that we shall have many more stations supported by endowments and public subscriptions. The response to WGBH has demonstrated that the broadcasters' original policy of programming radio stations to serve listeners rather than sponsors is not obsolete, but only forgotten.

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## READERS' FORUM

Continued from page 11

Would say that the purpose of Club is to listen to symphonic and operatic music, to widen our libraries by pooling our selections, and to further our appreciation of good music. Also to hide our heads, (like the proverbial ostrich) for two hours per week, from this insane world!

One member has a Scott high fidelity record player. Another has a 50-watt RCA amplifier plus two Altec-Lansing speakers. Another member has a speaker cabinet with five speakers ranging in size from 4 ins. to 18 ins. plus a very high quality amplifier and an Audak Polyphase pickup. As for myself, I have a model 585 Stromberg-Carlson player with two speakers in a coaxial mounting, which I prize very highly.

We do not discuss the recordings too much although we are very critical of the type of recording work that is done by the different companies. We serve refreshments and alternate our meetings at the homes of each of the members weekly. That gives each member about one meeting a month at his home. As for ages, we are all in the late thirties and forties. Our wives do not think too well of our meetings as they insist we play too loud!

As a group we are divided two to two on the modern living composers. We play their works but we don't agree that we like them!

C. A. Anglemire

Nazareth, Pa.

How many other HIGH-FIDELITY readers join in group listening of this sort?

—Editor

SIR:

Please send one-year subscription to address below. Thank God somebody has sense enough to publish a readable journal — free from the complex jargon of the electronics industry.

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San Francisco, Calif.

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Wish to congratulate you on an exceptionally fine magazine. Got first 3 issues at once and have spent 2 days buried in them — am driving my wife crazy. Have no hi-fi equipment now but anticipate Radio Craftsmen "500" amplifier, RC-10 tuner, Garrard changer, University 6201 speaker, and a tape recorder. Don't know what I'd be doing without you.

Capt. Charles Kaiser, Jr.

Ellington A. F. Base, Texas

SIR:

Have second copy of your new magazine and am very much impressed with the articles and the way you call a spade a spade. We need a good publication which is not so politically bound that it can't bring it-

Continued on page 80

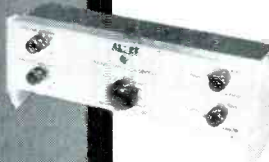
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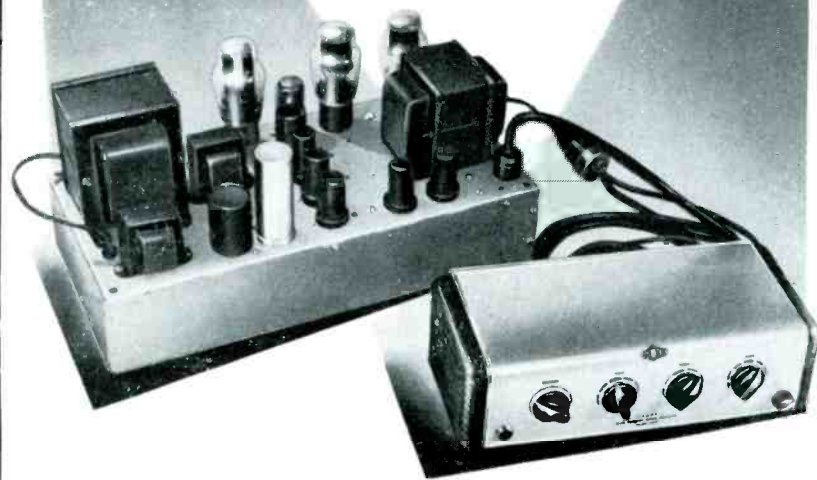
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## READERS' FORUM

*Continued from page 79*

self to saying what it thinks for fear they will step on someone's toes.

Enclosed you will find a check for \$1.25. Please send me the first issue: Vol. 1, No. 1. If I do not get a subscription for Christmas, you will have one from me shortly thereafter.

*William R. Smith*

Oak Ridge, Tenn.

SIR:

Being somewhat of a hi-fi fan, I am happy to notice your gift rates in effect at this time. Please find enclosed a check for \$6 to take care of a subscription for *myself* for the next three years. This is for Christmas. I like to get surprises, also.

*E. T. Dibble*

Ottumwa, Iowa

SIR:

Your anxiously-awaited second issue is magnificent. Many of my friends are sending for copies; it's surprising how many *more* folks are getting interested in good audio reproduction. Having become interested in high fidelity several years ago, I am somewhat immodestly taking a paternal interest in seeing that my acquaintances new to the field get started on the right track by subscribing to your splendid publication. What a vast void it is filling! For the rank amateur such as myself, it is invaluable.

May I offer a few suggestions? I would encourage your advertisers to quote prices in their ads. To know that an amplifier can be had for \$75 rather than \$200 is just as important to me as the information that it has 0.1 or 5% distortion. Also, in regard to amplifiers and advertising, uni-

*Continued on page 83*

## About NEW Subscriptions — Please Note

Henceforth, all new subscriptions to HIGH-FIDELITY will be started with the "next" issue. This means that subscriptions received up to April 15, 1952, will begin with the Summer issue, and first copies will be mailed in mid-April.

We still have on hand a limited supply of each of the first four issues — Summer, Winter, and Fall, 1951, and Spring, 1952 — and these are available at the regular single-copy price of \$1.00 each. If you would like **all four**, you can have them for **only \$3.00**, thus saving \$1.00. Address your order for any or all of these issues to: Circulation Dept., HIGH-FIDELITY Magazine, P. O. Box 600, Great Barrington, Mass.

## EDITING TAPES

Continued from page 18

pare it down gradually by repeated trials in the recorder until the precise length is attained. Of course, if this method is used for the head end, a short piece of leader must be attached each time a trial is made, in order to be able to lead the tape through the playback. In trimming very short pieces of tape, only a few inches long, it is advisable to cut the tail end before cutting the head end. This leaves a lead on the tape to thread past the playback until the final cut is made.

As pieces of tape are broken out and prepared for reassembly, they are dropped into the removable plastic bag shown in Fig. 3. The head ends are held by a row of colored plastic clothespins bolted to the edge of the table. Scenes are identified by numbers or by the color of the clothespins.

An added convenience is a wooden peg, fastened to a piece of door-spring and mounted at the rear of the recorder. This just reaches the hub of either reel, and is used instead of a pencil for threading up. It is always there when wanted, and springs out of the way after use.

A switch, cut into the eraser circuit, makes it possible to dub foreground dialogue over background music or over sound effects previously made from records or radio. It has been found that, with the eraser inactivated, the quality of the second recording is not noticeably impaired, while the volume of the first, or background, recording is reduced sufficiently for a good background balance. Whether the background sound is first recorded at a normal level or somewhat above normal level depends on the character of the background sound or music and the effect desired. A speed of 3¾ inches per second is very good for dialogue and while it is too slow for high fidelity music reproduction, it is adequate for background effects. This speed also permits accurate cutting, for one inch of tape represents a little over a quarter of a second, and with a 90 degree splice, cuts can be made to as close as a quarter inch, or one fifteenth of a second.

In editing, erasing has its uses, but is not to be compared to cutting and splicing for avoiding damage to the recording, and for precision in timing and spacing.

Finally, all finished reels are numbered and kept in a compartmented and indexed carrying case, Fig. 4.

If the basic process of recording voice and music on tape has been found enjoyable, the tape hobbyist can be certain that editing will open many new doors to further pleasure and satisfaction. Once the technique, or mechanical aspects, of editing have been mastered, full energy can be devoted to the art. And that is a source of lasting enjoyment.

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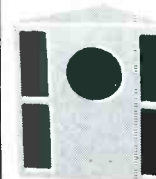


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**RELAX AND LISTEN** — John Hallstrom, 5¾ x 8½, cloth bound.

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**LISTENING TO MUSIC CREATIVELY** — Edwin J. Stringham, 479 pages, illustrated, cloth.

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## Semi-Technical

**MAKE MUSIC LIVE** — Irving Greene, James R. Radcliffe, and Robert Scharff. Profusely illustrated, 7 x 11.

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I enclose \$\_\_\_\_\_ for which please send me, postpaid, the books indicated by the circled numbers below. (No C.O.D.'s, please.)

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A list of books which will be of interest and value to you, carefully selected from the many publications related to music, records, and sound. Using our Book Service, you can have your choice by return mail. Just send the coupon with your remittance.

**ACOUSTICS OF MUSIC** — Wilmer T. Bartholomew, 242 pages, illustrated, cloth.

The physical basis of musical tone is explained in this book in simple, everyday terms. Here is a clearly presented explanation of the link between sound waves and the artist's technique in producing them. The book explains the technicalities of sound origination for the musician and music lover. Language is simple and explicit throughout. *Acoustics of Music* fills the need for a book clarifying the fundamentals of acoustics, and gives to music lovers in readable form the materials for understanding acoustical problems of composition, performance, teaching, and appreciation. The various types of sound — percussive, vibratory, etc. — are discussed in separate chapters. Ample illustrations and a very complete bibliography make this book particularly useful.

No. 21.....\$4.00

## Technical

**POST-WAR AUDIO AMPLIFIERS AND ASSOCIATED EQUIPMENT** — compiled by Howard W. Sams & Co., two vols., vol. 1: 368 pages; vol. 2: 352 pages; both profusely illustrated, 8½ x 11, paper-bound.

*Volume 1.* The initial volume was the first publication to present a uniform and thoroughly accurate analysis of the important sound equipment appearing on the market following the war. It covers a wide variety of well-known audio amplifiers, FM and AM tuners, plus data on important wire and tape recorders.

*Volume 2.* A continuation of the excellent coverage of the preceding volume, this manual provides complete information on 104 well-known audio amplifiers and 12 important tuners.

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No. 26.....\$2.50

## Miscellaneous

**SELECTIVE RECORD GUIDE** — Moses Smith, 5½ x 8½, cloth.

Here a famous critic and former director of a recording company helps you select your record library, guiding you through the great emotional and aesthetic pleasures of recorded classical music. It is far from being a mere catalog of works obtainable — which might prove more bewildering than useful — but is a truly selective, and practical, guide. And it emphasizes economy, leaving out expensive and hard-to-get foreign records and expensive domestic records. Besides emphasizing economy, the author also emphasizes quality of performance and recording. He shows his preferences among recordings, besides supplying a running commentary on composers and their place in the historical scene, and on the music itself. This book will prove a wonderful discovery for all who wish to make a discriminating collection of classical records. No. 16.....\$4.50

**READERS' FORUM**

*Continued from page 80*

form listing of characteristics (with no hedging: your advertisers have a select and critical audience) in all ads would be of value. This would include not only price, frequency range, output, but also normal and peak distortion, feedback, hum level, intermodulation distortion, and damping factor. This information may be had by writing to the manufacturer, of course, but we don't always have time to write several letters. A factual ad may produce a sale on the basis of the evidence presented.

*John M. R. Bruner, M.D.*  
Philadelphia, Pa.

SIR:

I have received the first two numbers of HIGH-FIDELITY Magazine and am extremely well pleased with them. It is certainly a much better magazine than I had anticipated and I congratulate you and the others connected with it on making such a fine publication for those of us who are interested in the reproduction of music. I especially like your section on record reviews because you tell enough about each record really to give the reader an idea of its merit. I certainly do object to one or two line reviews of a record — or a book either for that matter.

*Richard W. Norton, Jr.*  
Shreveport, La.

SIR:

I am enthusiastic about the Equipment Reports of the latest issue. They were clear and accurate. But we need more of them, and not in the form of free advertising for manufacturers. When some audio component has faults, I trust you will not soft-pedal these faults.

Your record reviews, while quite good, were too eloquent about the music on the records and not eloquent enough about the engineering excellence or lack of it that is actually the basic necessity of high fidelity.

*Robert P Stockwell*  
Charlottesville, Va.

SIR:

I have received my third copy of HIGH-FIDELITY and am very much impressed with most of the material presented and the manner of presentation. However, I am alarmed at certain trends of thought which seem to be entering the picture.

As an example, the "As the Editor Sees It" column suggests that perhaps the audio system has now evolved into a musical instrument and that we have progressed beyond the realm of mere science and engineering, and have entered the realm of art. Nonsense!

A musical instrument is just what we want an audio system *not* to be. A musical instrument is the source of the sound. On the other hand, the sole function of an

*Continued on page 84*

APPROVED • ASTATIC • ATLAS • AUDAK • AUDIO DEVELOPMENT • BELL • BOGEN • BOZAK • BROOKS • BROWNING • BRUSH • CHALLENGER • ELECTRO-VOICE • JENSEN • ESPEY

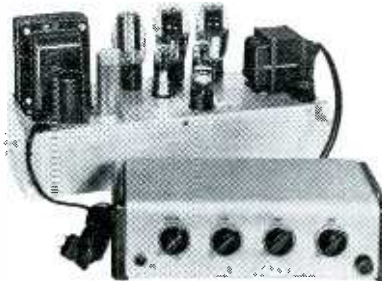
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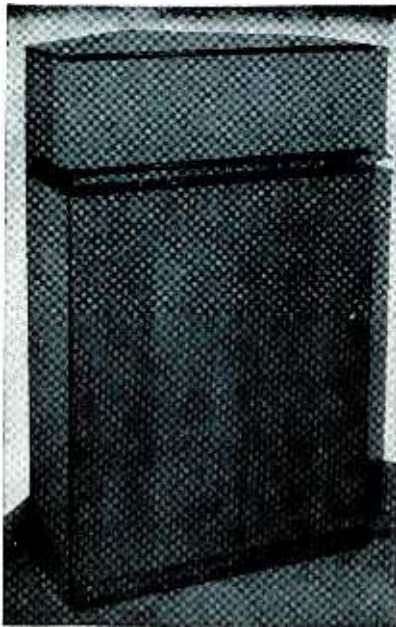
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## READERS' FORUM

*Continued from page 83*

audio system is to reproduce sounds originated by some instrument. The less one is conscious of the system — in other words, the less of itself that the system contributes to the intelligence — the better the reproduction.

A good audio system is never the result of any nebulous artistic cut-and-try procedure. Each component is the result of the application of science and engineering to the problem at hand in order to make a basic design. Then the application of suitable tests is made to analyze the results. The final test — the listening test — tells the engineer how successful he has been in applying his theory. If results are not satisfactory, then he knows there is a physical reason.

Let us leave the art to the true artists — the musicians, playwrights, etc. — and continue to develop our science of sound reproduction by following the road of reason.

*A. R. Murdison, B.A.Sc., P. Eng.  
Toronto, Canada*

SIR:

It seems to me that your editorial in the Winter issue is begging the question. While it is true that audio equipment cannot be completely rated unless all factors are given, still it can be rated by test and by *comparison*.

I would like to know how the Electro-Voice Patrician speaker system compares with the Klipschorn, and the Jim Lansing with the Altec. I, and probably many another audiophile, could not afford to buy each one and try it for himself. Yet, if your argument in the Editorial is accepted, that would be the only recourse.

I believe the greatest service you could render to audiophiles would be to help them decide correctly in their purchases of audio equipment by giving them your analyses and comparisons. That would save them money, and would enhance the value of your magazine to the readers.

*S. C. Conrad*

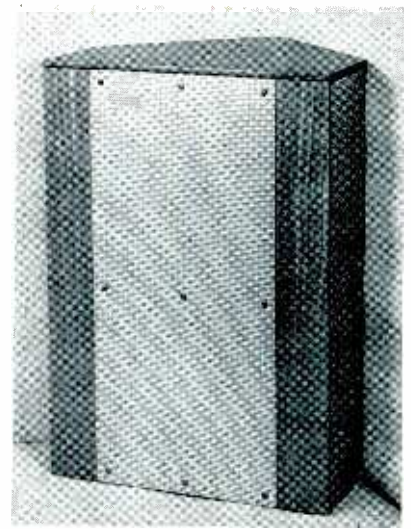
Altadena, Calif.

SIR:

The following experience of mine in hooking up my hi-fi rig may be of interest to readers of your Readers' Forum. Neither the manufacturers' instructions nor the hi-fi literature I have read warned me of the pitfall I fell into, and being a neophyte, I did not foresee it.

I have a Scott amplifier and a Pickering pickup. I mounted the pickup about 10 ins. above the amplifier. The painful result was a very strong hum. Apparently, the fields of the transformers of the amplifier were large enough to include the area which the pickup traverses in tracking the record. I had to redesign my entire installation. Experiments showed that hum from the transformer field was noticeable as much as 18 ins. above the amplifier.

*Continued on page 86*



REBEL

Since Klipschorn has been dubbed “King” we suggest Rebel deserves at least a status of “Tribal Chieftain”. This outstanding corner horn loading system for direct radiators is achieving an enviable reputation in its field. Like Klipschorn, the room walls at a corner form part of the speaker system to offer surpassing bass performance from a small physical structure. Rebel is priced from \$87 for the utility housing to \$150 for the furniture-finished housing. It is designed for application of 12 inch and 15 inch direct-radiator speakers of single and coaxial types.

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## IMPORTANT BOOKS

**Make Music Live**, by Greene, Radcliffe and Scharff. 256 pages, 6-1/2 x 9-7/8, 110 illustrations. Medill McBride, 1951. \$4.50.

As the months rolled by, we have wondered just how "pre" pre-publication publicity could be. Announced with due fanfare early last Spring, "Make Music Live" has finally appeared. We share the authors' joy at seeing the work in print, for HIGH-FIDELITY'S Book Service Department is delighted to be able to fill orders out of stock instead of spending much of its time asking the impatient to be patient a little longer.

Those who have waited so long will find themselves rewarded. "Make Music Live" covers the large field of music reproduction with a minimum of the technical and a maximum of the useful. A chapter is devoted to each major component in the audio system: record player, tuner, amplifier, loudspeaker, speaker enclosure, antenna, and tape recorder. Details of cabinet design and carpentry are covered in four chapters, and an appendix provides a glossary of technical terms, a list of hi-fi records, and a comparison of some of the technical specifications for tuners, amplifiers, and speakers.

The newcomer to high fidelity will find this book of material help in building an

understanding of the functions of the various components in a hi-fi system. It will also be valuable in guiding the selection of equipment through a knowledge of the meaning of the technical specifications.

The home hobbyist, with a well-equipped carpenter shop in the basement, will have new doors opened to him; the woodworking information in "Make Music Live" is exceptionally complete.

When examined closely, "Make Music Live" shows the need of a little more care in its preparation and much more naming of names. There are occasional technical inaccuracies, occasional bits of information which are already out of date and, more important, there is no index. These defects, however, are minor and are many times outweighed by the amount of worthwhile information presented.

More serious, however, is the omission of equipment identification. In a discussion of an "ideal home entertainment center", performance specifications for each unit are given in detail, but the manufacturer is not identified. And in the appendix, this policy of no names negates the value of much of the information presented. For instance, the careful listing of the characteristics of 19 loudspeakers becomes useless because the speakers are not identified other than by approximate price and size.

Still, for those who want an overall picture, who want to improve their understanding of the technicalities, and who do not want data about specific makes of equipment, "Make Music Live" is a worthwhile purchase.

— C. F.

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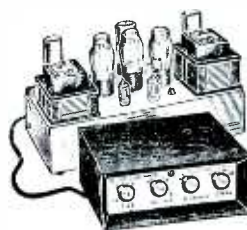
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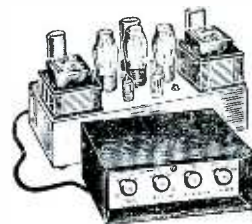
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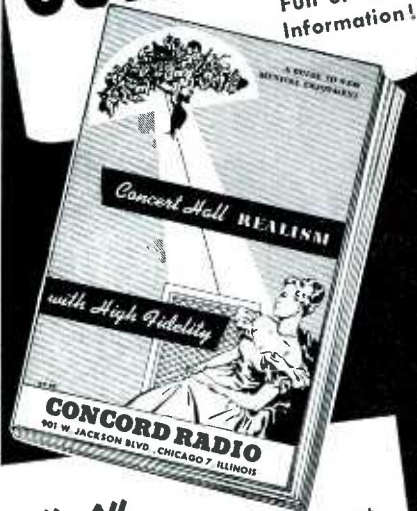
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## READER'S FORUM

Continued from page 84

I suggest that other neophytes, before making a permanent installation, move the pickup around in the air in the vicinity of the amplifier and thus delineate the area of objectionable hum. The final assembly can then be planned accordingly.

I imagine that the size of the hum area differs with different amplifiers. It is something which all manufacturers might mention in their instructions.

Olcott Gates

Lakewood, Colo.

SIR:

I just received my newest issue of HIGH-FIDELITY. It gets better all the time. Saved my life, too, on getting my new Air-Coupler out before Christmas. I can sympathize with Charles Fowler and Roy Allison in their trials and tribulations with the new Dual Air-Coupler — but at least they were not threatened by a BROOM with nothing to defend themselves with except a screw-driver.

How on earth did C. G. Burke get all that paraphernalia in his living room and remain on speaking terms with the little woman? Or is he married? I'm beginning to think that I'm going to have to do my newest Air-Coupler under "free field" conditions, too. To eliminate room acoustics, of course.

Jack Starks

Ft. Worth, Texas

SIR:

Orchids to Mr. Eton for his article on popular records. At least this is a move in the right direction, which is a happy thought to me.

I only wish that I lived around the corner from you. If that were true, I would be on your doorstep tonight with an armload of discs.

Mr. Eton had a good selection of records for trial. I have most of them, but I would like to suggest a few others. *Tennessee Waltz* with Les Paul and Mary Ford. Also their latest one, *Just One More Chance*. This one, I think, tops anything they have ever made for fidelity.

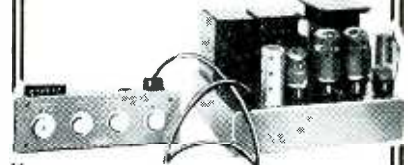
Another good album of records is *Nero Fiddles*. The best of the lot is *The Hot Canary*. This one is so well cut that in a few places you can hear the mechanical scraping of the bow in the strings, sounds which are seldom heard on even the best violin recordings. The next album I would like to suggest is *Old Refrains* by Robinson Cleaver (Decca Album 9-106). These are by far the best pipe organ recordings I have ever found. They are excellent as far as surface noise is concerned, and the organ bass has a depth I have never heard on a record before. Some others are *Good Bye* by Gene Ammons; *My Foolish Heart*, also by Gene Ammons. These are sax solo's, slow and easy to listen to. In a good many places one can hear the wind rushing through the

Continued on page 87

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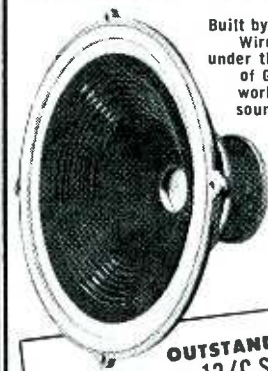
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## READERS' FORUM

*Continued from page 86*

reed before the notes are sounded. Another recording of this type is *Be My Love* by the George Auld Quintet — also a sax solo. It is easy to listen to and has good fidelity. It is on a Royal Roost Label.

I have many more such recordings in my collection. Let me add that when buying popular records in the record shop, one must have a critical ear. When a phonograph has a range no lower than 100 cps. nor higher than 5,000 cps., it is very hard to tell a poor recording. We all hope that public opinion will someday change all this for the better. If enough of us beef loud enough and long enough they will have to make some changes.

*Terry McConnell*

Petoskey, Mich.

## NOTED WITH INTEREST

*Continued from page 8*

music from time to time; in spite of the infrequency of good music, WASH has the highest fidelity of any station in the Washington area.

Best wishes to your excellent magazine.  
— M. S. Hunter, Washington, D. C.

In my city of Louisville you list WHAS-FM and WBOX which handed in their licenses many months ago. — S. A. Cisler, Louisville, Ky.

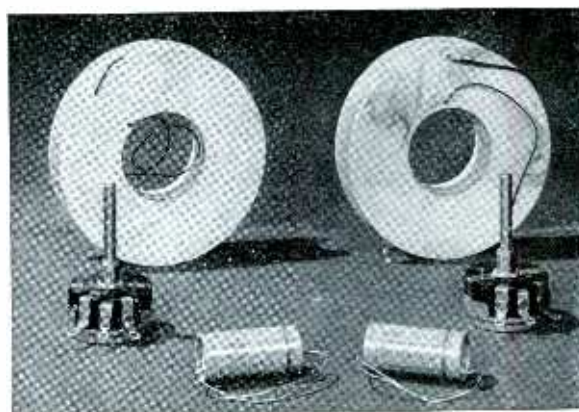
We would appreciate your adding KITE-FM, San Antonio, to the list of stations in the United States. — Charles W. Balthrope, San Antonio, Texas.

FM station WLSU in Baton Rouge, La., has had excellent supper music. This station is owned by Louisiana State University. Monthly programs mailed at request. — E. D. Trelue, Jr., New Orleans, La.

FM station KOZY, Kansas City, Mo., on your FM station list has been off the air for about two years. The University of Kansas at Lawrence, Kansas, is erecting an FM educational station. Station KCMO-FM, Kansas City, Mo., carries mostly AM network programs. — Victor W. Amoth, Lawrence, Kansas.

Please don't use my name on this, but here is the sad report on some of the FM stations. WHAV-FM seems to have quit. I think they had quite an audience for their continuous music. WPJB-FM has gone ABC and stopped their FM promotion and stopped the fine music programs they carried. WLAW-FM has a loud 60-cycle hum. WLLH-FM has a whine or squeal originating at a pumping station. The squeal stops, when the pump stops. The big network programs sound dead compared to those of WGBH. WNAC-FM has AM modulation and bursts of loud hissing from failing condensers.

*Continued on page 88*



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If you are now using a single speaker — or a coaxial — of any type, you can get richer, deeper bass response by adding a single cross-over network and an Air-Coupler.

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Actually, by a judicious selection of associated components, the three values of network inductors on which G. A. has standardized enable our customers to secure low-cost crossover networks which will operate at **14 different crossover frequencies!** They are described in full in the instruction sheet which is sent without charge with every order for networks. If you would like a copy, just send us 10 cents in stamps or coin to cover mailing charges and we'll get it off to you by return mail. These networks, by the way, can be used with systems employing **two to eight** speakers.

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We can ship you an Air-Coupler **completely assembled!** Yes, the **new design** developed by the group at **Radio Communication and High-Fidelity** gives much better results but it is also more complicated to build. The internal partitions must be positioned in **exactly** the right places and it requires a lot more screwing and gluing. So we have arranged to carry them **completely assembled**, with a hole cut for a 12-in. speaker, everything ready for you to put into immediate operation. They are made out of selected  $\frac{3}{4}$ -in. plywood, all joints are glued and screwed together. The cost is only \$47.50, f.o.b. South Egremont, Mass.

**AND** — if you have the time and inclination to put everything together yourself, the new Air-Coupler is also available in knock-down form, all parts precisely cut and carefully matched, for only \$34.50. Immediate delivery on either knock-down or completely assembled models.

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# General Apparatus Co.

South Egremont, Mass.



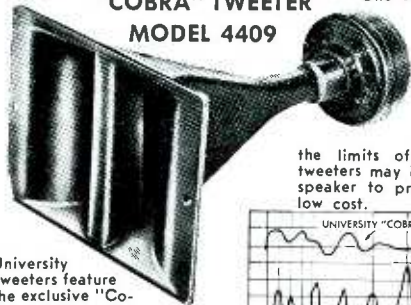
# University LOUDSPEAKERS

WITH A TRADITION FOR  
Quality and Dependability

... designed by  
**PROGRESSIVE  
ENGINEERING!**

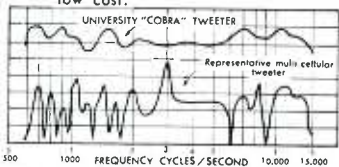


## "COBRA" TWEETER MODEL 4409



University  
Tweeters feature  
the exclusive "Co-  
bra" horn that overcomes  
the disadvantages of mul-  
ti-cellular and multi-sec-  
tional horns — affords true  
uniform wide angle polar response  
through the new University theory  
of reciprocating flares.

One of the complete line of  
tweeters for both  
2000 and 600 cycle  
crossover. Recom-  
mended for concert  
halls, theatres and  
the high fidelity en-  
thusiast, they provide  
economical wide  
range response to  
the limits of audibility. These  
tweeters may be added to any cone  
speaker to provide high fidelity at  
low cost.



Variety of  
crossover networks  
also available.



**UNIVERSITY  
LOUDSPEAKERS • INC**  
80 SO. KENSICO AVE., WHITE PLAINS, N. Y.

Every UNIVERSITY  
product is built to  
traditional standards of  
quality that have earned  
a world-wide reputation  
for absolute depend-  
ability. Highest quality  
materials, skillfully fab-  
ricated, result in unsur-  
passed performance and  
extra reliability. "Pro-  
gressive Engineering"  
assures the latest design  
improvements in every  
piece of UNIVERSITY  
equipment.

WRITE FOR FREE  
HI-FIDELITY  
CATALOG TODAY

Fully explains the  
use and advantages  
of UNIVERSITY  
HI-FI equipment  
in easy to under-  
stand language.  
Covers the com-  
plete line, gives  
full application  
and installation  
details. Write  
Desk 37.

NOTED WITH INTEREST

Continued from page 87

WHDH-FM has fine quality with almost dead silent carrier. There are five FM-only stations in the Boston area: WERS, WGBH, WBUR, WPTL and WXHR. Four of these are non-commercial. These five carry much fine music. WJAR-FM carries the NBC Symphony live. WBZ-FM doesn't carry it at all, as far as I can find out. Too bad WJAR-FM doesn't get at least 8,000-cycle feed. Too bad Boston doesn't know that WJAR-FM carries the NBC Symphony. WJAR-FM feeds a strong signal into this area: several hundred microvolts up here. WLLH-FM and WCOP-FM carry quite a bit of serious recorded music in the evening. WBSM-FM also has an hour of serious music each evening. — Name and Address Withheld by Request.

### Carpenters

In response to our request in the previous issue for names of carpenters and cabinet makers capable of handling the woodwork- ing aspects of hi-fi installations, we have received the following suggestions:

*Memphis, Tenn.:* We keep a file of work- men of all types, from skilled woodcarvers to plain hammermen. — Hirsch Electronics, 421 N. Watkins.

*Denver, Colo.:* Mr. Ditman of Designs Co., 301 W. Evans, Denver, designs and builds furniture, radio cabinets, and built- ins. He is an excellent designer and cabinet- maker and builds to the customer's speci- fications, or will design with the advice of the radio expert associated with him. — D. M. Bender, 3171 S. Cherokee, Engle- wood, Colo.

*Cleveland, Ohio:* My father, Henry Vanek, is available for "careful carpenter" work in the greater Cleveland area. — Henry J. Vanek, 13115 Coath Ave., Cleveland 20, O.

*Chicago, Ill.:* I can wholeheartedly recom- mend Mr. Sam Solomon of Neo Furniture and Interiors, 1323 S. Michigan Blvd. He is a master craftsman who has done work for me personally, as well as for Concord. He is particularly well suited as he is a high fidelity enthusiast himself. He knows the electronic and acoustic aspects peculiar to audio installations, as well as the func- tional and decorative niceties. — Albert L. Whyte, Audio Consultant, Concord Radio Corp.

*Hempstead, N. Y.:* May I enter my name in your cabinetmaker's file. I not only make the cabinets, but do wood finishing. I do this part time, at home, where I have a well equipped shop. — Matthew Marcin, 135 Martin Ave., Hempstead.

*New York, N. Y.:* This company is par- ticularly well equipped for building cus- tom jobs as the owner, Mr. Tony Rizzo, is a hi-fi fan and knows what is acoustically, as well as artistically, correct. The company is: York Furniture Co., 206 East 47th St., New York City. — J. R. Austin, Calvert Distillers Corp., N. Y.

Please — will readers continue to send us their recommendations, so the file will cover the whole Country.

Continued on page 89

The most popular, low price

## AM-FM Radio Receiver CHASSIS

The New ESPEY  
Model 7-C

### FEATURES

1. AC Superheterodyne AM-FM receiver.
2. Improved Frequency Modulation Circuit, Drift Compensated.
3. 12 finest quality tubes, including rectifier.
4. 4 dual purpose tubes give 15 tube perform- ance.
5. Automatic volume control.
6. Inverse Feedback.
7. High Quality AM-FM reception.
8. Full-range combination bass-treble tone control.
9. 10 watt (maximum) Push-Pull Audio Output, Beam Power.
10. 12-inch PM speaker with Alnico V magnet.
11. Indirectly illuminated "slide-rule" dial.
12. Loop antenna for AM and Folded Dipole antenna for FM reception supplied.
13. Provisions for external antennas.
14. Wired for phonograph operation with pre- amp tube for reluctance pick-ups.
15. Licensed under RCA and Hazeltine Patents.
16. RMA listed, Code Symbol #174.
17. Microphone input for public address use.
18. Uses latest type miniature tubes.

Makers of fine radios since 1928.

**ESPEY**  
TEL. Trafalgar 9-7000  
**MANUFACTURING COMPANY, INC.**  
528 EAST 72nd STREET, NEW YORK 21, N. Y.

### SPECIFICATIONS

Supplied ready to operate, complete with tubes, antennas, speaker and all necessary hardware for mounting in a table cabinet or console, including escutcheon. Power consumption — 80 watts.

Chassis Dimensions: 13 1/2" wide x 9" high x 9" deep.

Net Weight: 13 lbs. each.

Sold through your favorite parts distributor.

WRITE FOR CATALOGUE HF-2  
CONTAINING PRICES AND COMPLETE  
DETAILS OF ALL MODELS

## DIAMOND NEEDLES

**\$10<sup>50</sup>**  
PLUS  
POSTAGE

No doubt you have learned by now that the needle in your record player is not permanent. It is tipped with either sapphire or osmium metal which should be changed after about 20 hours of playing, in order to protect your valuable records.

This means that if you use your record player on an average of an hour a day these needles need replacing about every three weeks at a cost of between \$1.50 to \$3.50. Because of this frequent needle changing you have of course learned how to install a new one when required.

Why not, then, retip your present replaceable needle with a genuine diamond. One that will give you at least 1000 hours of high fidelity, distortion-free record playing pleasure with the comforting assurance that your costly records will remain undamaged — particularly those long-playing micro groove records, so finely grooved and sensitive to a worn stylus?

Send us your replacement needle assembly now—today. Let us retip it with the highest quality genuine diamond stylus—exactly the same kind that we make for leading radio stations the country over. Save the difference between \$10.50 for 1000 hours of playing and up to \$3.50 for 20 hours. And also save because you deal directly with a leading manufacturer of diamond styli for broadcast use who is in a position to offer the lowest price available for diamonds of this quality.

Our diamond tips are unconditionally guaranteed and are made for LP or standard records. Send check or money order for \$10.50 plus 25c for return postage with your needle assembly or complete cartridge if you cannot remove the replacement needle assembly (except Pickering non-replaceable type) to:

**THE TRANSCRIBER CO.**  
Diamond Styli Manufacturers

172 Green St. Dept. H Boston 30, Mass.

## NOTED WITH INTEREST

Continued from page 88

### Keeping Score

It doesn't take any great amount of musical knowledge but it does add a lot to the pleasure of listening, if musical scores of the great compositions can be followed while the records play. At least two organizations make a specialty of preparing inexpensive scores for just this purpose: Lea Pocket Scores, and Boosey and Hawkes. Cost is from \$1 up to \$3 or so, depending on the length of the musical work. For complete information, write Lea at P. O. Box 138, New York 32, N. Y., and Boosey & Hawkes at 30 West 57th St., New York 19, N. Y.

### Wanna Drool?

If you do, just send off to Ampex Electric, Redwood City, Calif. for a circular describing the latest addition to their line of tape recorders. This one is a portable unit, operating at 7½ and 15 ips. Response is specified as flat within 2 db. from 70 to 10,000 cycles at 7½ ips., or from 50 to 15,000 cycles at 15 ips. We quaver a little at the price (though, actually, it's well within reason, considering quality and operating features) — \$985 . . . but a fella can dream, can't he?

### Mighty Midget

While we're out in California, we bring to your attention another worthwhile product of that State: a portable transcription player announced by Newcomb Audio Products, 6824 Lexington Ave., Hollywood 38. Takes records up to 17½ ins. at speeds of 33, 45, or 78. Has a 12-in. speaker, is equipped with dual G-E reluctance cartridge, and weighs only 33 lbs.

### Static Eliminator

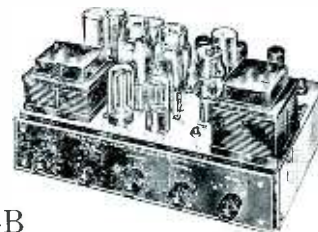
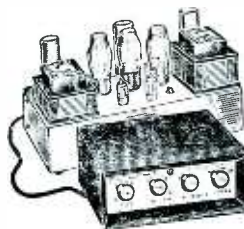
There is apparently no way of eating our cake and having it, too. We thought we had gotten rid of static by switching from AM to FM. But along come LP records, and the gremlin is with us again. The trouble is not due to the fact that they are LP's. It is caused by the plastic from which the records are made. The vinylite picks up static electricity, which picks up dust, which is ground into the record, which then makes with the customary crackles and pops — just like AM radio. However, there's an inexpensive answer for LP's: a product known as Stati-Clean, put out by Walco Products, Inc. of 60 Franklin St., East Orange, N. J. It comes in 1 oz. bottles or 6 oz. aerosol spray cans. Best procedure seems to be to take the new LP — *before* it is played even once — wipe it off with a soft, damp rag, take the spray can and go *pb-t-t* a couple of times on each side. If the LP has been used a while, wiping off with a soapy rag first will help remove some of the imbedded dust.

Stati-Clean is not a *cure*; it is a preventative. If you already have dust ground in, you'd

Continued on page 90

## FAR MORE than mere AMPLIFIERS

214-A



210-B

## H. H. SCOTT amplifiers give you complete music-control systems

Frankly, whether you buy H. H. Scott amplifiers or second-best, your wisest investment is as versatile an amplifier as you can afford. Why? In operation, you must cope with many recording characteristics and all kinds of records — old, new, noisy, quiet, clean, distorted. The real test of amplifier quality is superb music under all conditions, poor as well as good. H. H. Scott amplifiers give exactly that. No other amplifiers have any of the exclusive H. H. Scott control and compensating features.

- ... Wide-range listening flexibility of unique continuous 3-channel tone controls
- ... New automatic loudness control compensating for the different response of your ears to high and low notes at different volumes
- ... The amazing DYNAURAL noise suppressor which virtually eliminates record scratch and LP hiss without losing music, combined with
- ... A record-distortion filter and a pickup level adjustment

In all-around performance, H. H. Scott amplifiers stand unique in the field.

## hear these amazing amplifiers at LEONARD

three sound studios, courteous hi-fi experts to help you with music at its best.

You will want our new High Fidelity catalogue.  
Write Dept. A

TELEPHONE: CORTLANDT 7-0315

**Leonard**  
Radio inc.  
the house  
built on  
SERVICE  
69 CORTLANDT ST., NEW YORK 7, N. Y.



ANOTHER SIGNATURE FIRST

Now!

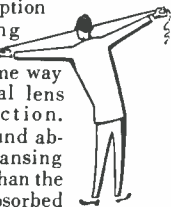
**A FULL  
ACOUSTICAL LENS  
FOR LOUD  
SPEAKER  
USE!**



Distributing a uniform sound wave over the entire audio spectrum, the new Jim Lansing acoustical lens smooths out the high frequencies and gives them a mellowness that your ear will appreciate instantly. Unlike the multicellular horn, which performs well at some frequencies but beams or distributes very poorly at others, the new lens is not sensitive to frequency... because the band width is wider than the audio spectrum with which it is used. The new lens and horn is for use with the Jim Lansing #175 high frequency driver.

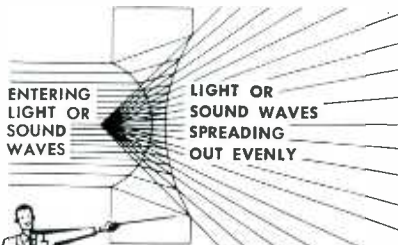
**TRANSPARENCY CAN BE MEASURED!**

Transparency or absorption in the new Jim Lansing acoustical lens is measured in the same way as it is in the optical lens — by index of refraction. The percentage of sound absorbed by the Jim Lansing acoustical lens is less than the percentage of light absorbed by the finest optical lens.



**W-I-D-E DISTRIBUTION ANGLE!**

The angle of distribution which is controlled by curvature and index of refraction can now be varied between wide limits... permitting the sound to be concentrated or diffused. The 175 DLH shown above (driver, lens and horn) distributes over a 90° solid angle.



A graphical diagram or ray tracing of the operation of the Jim Lansing acoustical negative lens showing focal point and diffusion angle as controlled by curvature and index of refraction.

Ask your audio dealer for demonstration of the new Jim Lansing acoustical lens today!

**JAMES B. LANSING  
SOUND, INC.**

2439 FLETCHER DRIVE  
LOS ANGELES 39, CALIFORNIA

FIRST IN FINE SOUND

**NOTED WITH INTEREST**

*Continued from page 89*

better get a noise suppressor. But Stati-Clean will help keep matters from getting any worse.

We asked Bob Walcutt, V. P. of Walco, if spraying Stati-Clean on our table-model AM radio would help that kind of static. He said "No".

**Packaged Custom Installations**

We had an inquiry about our Magazine from the A & A High Fidelity Associates in Chicago, so wrote to find out what they associated about. Seems they have been making packaged custom installations at a cost of \$160. That is, they have a single, standard set of components, including a Webster-Chicago 106-27 with magnetic heads, a Bell 2122-A or Bogen DB10 amplifier, a coaxial speaker, and all the necessary wires, pre-cut, soldered, ready to connect. In the Chicago area, they do simple cabinet work; elsewhere they sell the group of components, provide coordinated instructions and technical advice if needed. The street address is 1520 West Foster Avenue.

S. G. A. E.

Which stands for Sociedad General de Autores de Espana. Which, in turn, hopes to tape record Spanish music in Spain. In regard to their plans, they "are still very much in the experimental stage. It will take some time for all the equipment to be assembled in Madrid; then further time will pass before the technical difficulties, arising from the instability of the electric current in Spain, can be ironed out." — We'll keep readers posted.

**The Professional Touch**

Cabinet drawers that slide in and out on ball bearings add the professional touch, if you know where to get the drawer slides. Grant Pulley and Hardware Co., 31-85 Whitestone Parkway, Flushing, N. Y. tells us that they have two styles available, for side and for underneath mounting, in a range of sizes providing normal travel from 9 to 12½ ins.

**Relentless Energy**

If you need 1 minute and 26 seconds of Relentless Energy (backed by 1 min. 20 secs. of Hidden Power), write immediately to Audio-Master Corp., 341 Madison Avenue, New York 17, N. Y., for their record No. 272. If that sounds too vigorous, you might try No. 260, which will supply you with 3 mins. 6 secs. of Courting and 3 mins. 9 secs. of Love Scene . . . or at least, music to that effect. — We pass along this tidbit of information because the time may come when you need a specific bit of background music. Meantime, their catalog is intriguing and available for the asking. Someday, we're going to succumb and send for No. 268, which backs up 3 mins of Seduction with 1½ mins. of Good Old Times plus 1½ mins. of Peaceful Finale.

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**THE  
AUDIO  
EXCHANGE**

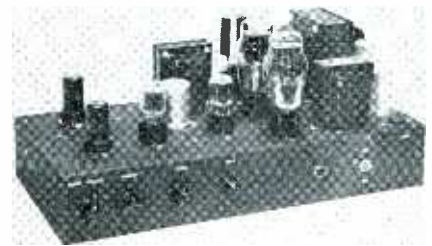
Our policy of offering best value in guaranteed used high quality audio equipment now extends to these NEW items, custom-built for us:

**WILLIAMSON-CIRCUIT AMPLIFIERS**

with complete choice of output transformers. Oil-filled condensers used throughout. 807 output tubes.

AE-100 \$85.00 to \$145.00

**TEN WATT CONSUMERS' RESEARCH  
ALL-TRIODE AMPLIFIER**



Tubes: 6SC7, (2) 6SN7, 6J5, (2) 6B4, 5U4. Radio and phono (GE, Pickering) inputs. Output impedances 4, 8, 16, 250, 500 ohms. Frequency response 20 to 15,000 cycles ±1 db. Total harmonic distortion: less than 2.5% at 10 watts, 2.5% at 11.8 watts at mid-frequencies.

AE-110 \$75.00

**SPEAKER CORNER ENCLOSURE, BASED  
ON THE FAMOUS BRIGGS DESIGN.**

(Sound Reproduction, p. 33.) A fine furniture piece with choice of finishes, which outperforms by far most corner cabinets.

AE-300 \$74.00

The workmanship on all custom-built equipment is guaranteed to be of unexcelled quality. A liberal allowance for your present equipment can be credited toward the purchase of this new equipment.

Data sheets on the above items, as well as complete catalogue of guaranteed used equipment gladly sent upon request.

**THE  
AUDIO  
EXCHANGE, INC.**

85-08 168th Place, Jamaica 32, New York

OLympia 8-0445

## AUTHORitatively Speaking

Continued from page 3

galley. It was just that we had picked the wrong time to subject our author to the tedium of proofreading: he was on his honeymoon. Unfortunately, editors are not respecters of such mundane interruptions to publication schedules. Proofreading went on as usual. Incidentally, Shirley is president of Televex, and we announce this in spite of his suggestions to the contrary. He believed that readers would feel he might be biased. We feel that a) if he is biased (which he isn't) readers ought to know about it, and b) that being who he is, he should know what he is talking about (which he does), and readers ought to know that, too.

Many months ago, we received a group of subscriptions from Hawaii. Later, another group came in — so many that we decided to find out what was going on. Thus we are now able to publish the interesting report on Music in Hawaii, on page 47, by Carl von Wehrden. About himself, the author writes, "My interest in high quality audio stems from my job as sound and projection engineer, currently (for the past two and one-half years) for the Pacific Army-Air Force Motion Picture Service and, since 1940, for the Army-Air Force Motion Picture Service on the mainland. I have been the guiding hand behind the formation of the Hawaii Audio Society and am currently its president. I sometimes wonder at my present involvement with electronics, especially in view of the fact that I graduated an ME, but I love it."

This month, we add two well-known names to our record review staff. There is little need to introduce either Alfred Frankenstein, music critic for the San Francisco Chronicle, or John Conly, writer in many publications on hi-fi and music. We are indeed fortunate to have critics of such caliber on our reviewing staff, and are grateful to them for making time in their already full schedules for HIGH-FIDELITY.

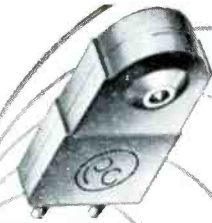
### TRADER'S MARKETPLACE

Here's the place to buy, swap, or sell audio equipment. Rates are only 20¢ a word (including address) or \$20 an inch, and your advertisement will reach 20,000 to 40,000 audiophiles. Remittance must accompany copy and insertion instructions.

**SALE:** Practically unused amplifier, direct coupled, absolute fidelity Amplifier Corp. of America Model No. ACA 100 GE. Make offer. J. Brown, 1631 Walton Ave., New York 52, N. Y.

**PARTNER WANTED** for established High Fidelity business in Washington, D. C. Write to Box D High-Fidelity Magazine, P. O. Box 600, Great Barrington, Mass.

**GET THE** greatest potential from your Hi-Fi radio-phonograph-tape-speaker, (television) units; we specialize in building custom cabinets to engineering specifications. Contemporary or period designs to suit individual taste. Expert craftsmanship, choice of woods and finishes, glass, wrought iron, used. BERAN-ORBAN OR 4-6123, 22 Astor Pl, N. Y. C.



for flawless reproduction  
**NO OTHER CARTRIDGE CAN PERFORM LIKE A PICKERING**

*Pickering* patented design  
provides **DYNAMIC COUPLING\***  
throughout the entire audible range

#### \* DYNAMIC COUPLING ASSURES

- constant stylus contact with the record grooves over the entire audio spectrum (20-20,000 cps)
- full frequency response
- full transient response

**NO RESONANCES  
NO MISTRACKING  
NO GRINDING OF GROOVE WALLS**

Pickering Cartridges transmit all of the sounds in the musical spectrum, without loss of definition, just as a fine optical lens passes all of the colors in the rainbow.

For literature address Dept. M

Well-informed engineers and technicians, schooled in the science of electro-mechanics, know that only wide-range frequency response provides full transient response; the electronic phenomena which enables the reproduction of orchestral music with all the subtle sounds that give each musical instrument its individual character.

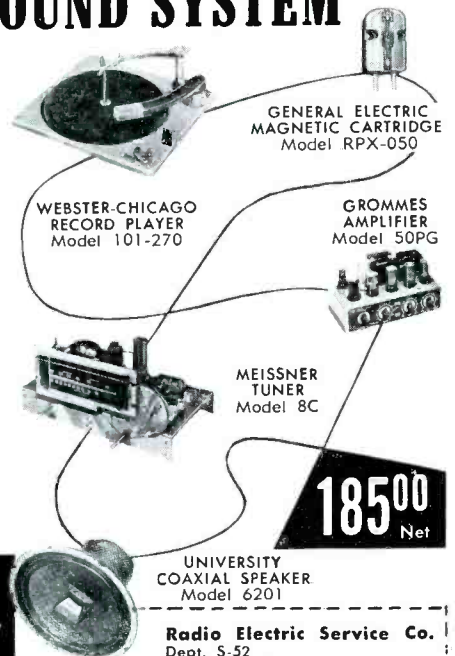
Pickering engineers and designers have but one objective . . . to produce products that will please the music lovers' insatiable appetite for the flawless recreation of recorded music . . . for the utmost in quality insist upon Pickering Audio Components.

*Pickering*  
& COMPANY, INCORPORATED  
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## The "RESCONIAN" Custom Matched HIGH FIDELITY SOUND SYSTEM

The "RESCONIAN" high fidelity system offers a brilliantly matched ensemble to delight the most devout music lover — yet the price is unbelievably low — only \$185.00. Comes ready to play — complete with connecting cables & plugs.

Every part of this superb system gives outstanding performance. The Webster-Chicago record player, teamed with the GE Variable Reluctance Cartridge, plays all three speeds with faultless reproduction. The world famous Meissner 8C has long been recognized as a classic by music lovers. The Grommes 50PG Amplifier performs with the brilliance of amplifiers selling for two and three times more. The University 6201 Coaxial Speaker was chosen for its accurate reproduction of frequencies from the very low to the very high. Come in to our modern sound department and hear the sensational "RESCONIAN." You'll be amazed at how well a system can sound — yet cost so little. If distance prevents a trip to our studio you can order this system by mail. It will be carefully packed and promptly shipped.



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Now for the first time — AVAILABLE FOR ALL RECORD PLAYERS!

hear your LP recordings as you never heard them before!

WITH

**DUOTONE**  
"diamond"



- THE ONLY PRACTICAL NEEDLE FOR LP RECORDINGS
- COSTS LESS PER RECORD. PLAYING
- BOTH DISCS AND NEEDLE LAST MANY TIMES LONGER
- THE MOST ECONOMICAL NEEDLE EVER PRODUCED

Your record collection deserves the DUOTONE DIAMOND!

Ordinary needles wear three times faster on LP records, permanently impair record quality. Duotone Diamonds finer tip retains shape, reproduces with higher fidelity, preserves record quality and affords the convenience of the most permanent stylus ever made. Enjoy all the superb original music and protect your costly recordings with Duotone's new LP exclusive! Authentic laboratory tests by recognized sound experts reveal diamond to be the only practical, economical LP needle!

SEE IT...  
HEAR IT...NOW!

Made expressly for LP players by  
**DUOTONE COMPANY**  
KEYPORT, NEW JERSEY  
Famous for phono needles, recording needles,  
discs and quality sound accessories.

CLIP . . . MAIL TODAY

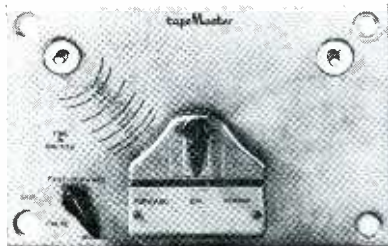
<p><b>FREE</b> WHAT EVERY AUDIOPHILE SHOULD KNOW ABOUT NEEDLES!</p> <p><b>NEW, '52 NEEDLE GUIDE!</b> Describes:</p> <ul style="list-style-type: none"> <li>• Correct DIAMOND needle replacement for individual set.</li> <li>• Simple installation instructions for all needle replacements.</li> <li>• Description of original needle supplied with each model.</li> </ul>	<p><b>DUOTONE, INC.</b> Locust Street Keyport, New Jersey</p> <p><input type="checkbox"/> Send free Duotone Needle Guide.</p> <p>Name .....</p> <p>Address .....</p> <p>City .....</p> <p>Zone .....</p> <p>State .....</p> <p>Phonograph Model .....</p>
---	---

# HIGH - FIDELITY

## tapeMaster

### TAPE RECORDER

### ONLY \$79.45 !



TAPEMASTER TH-21 TAPE TRANSPORT



TAPEMASTER PA-1 PREAMPLIFIER

### PLAY BACK THROUGH YOUR OWN AMPLIFIER

At last! A dual track  $7\frac{1}{2}$ " per sec. tape recorder worthy of HI-FI rating, at a price lower than \$80! Your TAPEMASTER includes the self-powered recording and playback pre-amplifier and the transport mechanism with the fine SHURE record-play-erase head. Transport plus pre-amplifier PLUS your own audio amplifier equals a professional tape recorder-playback worth \$300-\$400. Note: units are furnished completely wired, with inter-connecting cables — no wiring required. Available in two compact separate units (illustrated) for custom installation, or installed in a rugged portable carrying case. TAPEMASTER offers the ultimate in flexibility. Features include: RTMA standard  $7\frac{1}{2}$ " per sec. tape speed; 70-8000 cps response; flutter less than 0.5%; fast forward; rewind 20:1 speed; handles 7" reel of type "B" tape — 1 hour dual track playing time; full monitoring; inputs for radio-phono and mike; outputs to amplifier and headphones; one knob mechanism control; push-pull supersonic bias and erase; neon level indicator. Preamp has master switch for selection of tape play-record, or radio-phono!

**ORDER YOUR TAPEMASTER BY MAIL!**

Note: TAPEMASTER uses "B" tape — coating facing out. "A" tape may be used after rewinding to face out.

TYPE	DESCRIPTION	SIZE	NET
TH-21	Transport Mechanism	11x7x5 $\frac{1}{4}$ "	\$48.95
PA-1	Matching Preamp.	10x3 $\frac{1}{2}$ x5"	30.50
PT-121	Above in port. case.	12x11 $\frac{1}{4}$ x8"	89.95
B	$\frac{1}{4}$ " Plastic Tape	1200 ft.	3.60
B	$\frac{1}{2}$ " Paper Tape	1200 ft.	2.29
—	7" Plastic Reel	1200 ft.	.50
AP	Crystal Mike	—	3.35
75	Mike Plug	—	.38

### FREE! RADIO SHACK 1952 CATALOG!

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CITY ..... ZONE..... STATE.....

# RADIO SHACK

CORPORATION

167 Washington St., Boston 8, Mass.

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Now you can  
believe everything  
you hear!



## the CRAFTSMEN 500 ULTRA FIDELITY audio amplifier

Even we were amazed when we tested this remarkable amplifier. Never before, in our experience (or yours) has such remarkable performance been recorded. The C-500 is 99.99+ %\* distortion-free. We had to think of a new word to describe it. The word is ULTRA-FIDELITY. Hear the "500" and you'll know why.

### C500 Amplifier Features

- **FAMOUS WILLIAMSON** all-triode circuit.
- **FREQ. RESPONSE:**  $\pm 0.1$  db., 20 cps to 20,000 cps;  $\pm 2$  db., 5 cps to 100,000 cps.
- **POWER RESPONSE:** 12 watts  $\pm 2$  db., 10 cps to 50,000 cps.
- **TOTAL H DISTORTION:** Less than 0.1% at 10 watts, at mid-freqs.  
\*0.01% at av. listening level below 1 watt.
- **TUBE COMPLEMENT:** (2) 6SN-7GTA; (2) KT66 power output; 5V4G rectifier.

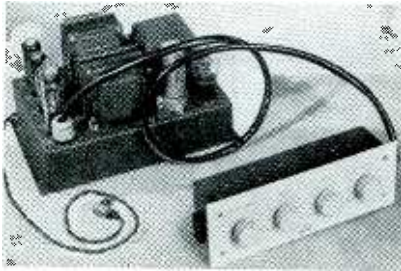
Sold by leading radio parts distributors everywhere or write to

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# You CAN Have Real High Fidelity At Reasonable Cost

Arrow knows that thousands want—and need—fine high fidelity equipment for their personal gratification, but feel that it may be too costly. That's why Arrow is happy to offer top-flight equipment that performs beautifully, at down-to-earth prices. Why deny yourself the pleasure of good music, beautifully reproduced? Arrow has just what you want, at prices that are well within your budget.



## 10-Watt Remote Control Hi-Fi Amplifier **9950** for only

This fine Lowther MA10 Remote Control 10-Watt High Fidelity Amplifier is an excellent example of the superb quality you can get from Arrow at low cost. For only \$99.50, here is the "heart" of an excellent high fidelity phono or phono-radio system that, experts claim, performs as well as units at much higher cost.

### EVERY ADVANCED FEATURE

For only \$99.50 the MA10 gives you 20 to 40,000 cps frequency range with less than 1% distortion at full power. The MA10 has separate, fully variable bass and treble controls. It has a built-in pre-amplifier for use with magnetic cartridges in its handsome remote control cabinet. It is rated excellent in components, design and construction.

### UNCONDITIONALLY GUARANTEED

Drop in to Arrow's high fidelity studio and let the MA10 itself show you how good it is. Or try one in your own home for 30 days, and if you honestly believe you can get better value for your audio dollar, we'll gladly refund your purchase price. We've sold hundreds with this bona-fide guarantee and have yet to be asked for a refund.

Drop in for full details—or send us the coupon below. But, best of all, hear it yourself—and be convinced that you CAN have real high fidelity at reasonable cost from ARROW.

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Enclosed is \$....., for which  
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Amplifier, with unconditional 30-day money  
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- Send data on Lowther MA10.
- Send Free Arrow Hi-Fidelity Brochure.
- Send Free constructional booklet on high fidelity speaker enclosure cabinets.

NAME.....  
Address.....  
City.....Zone.....State.....

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## NOTED WITH INTEREST

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### A Chance to Ogle

New York area audio-philes will have a chance to ogle the myriad wonders of the radio industry when the Institute of Radio

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LET US PUT

YOUR

LP PROBLEM

IN OUR

LAP

Hard to find classical, jazz and folk music on small labels - or any L. P. record listed in Schwann Catalog mailed to you - on receipt of check or money order - or if you prefer c.o.d.

All Records sent  
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## QUALITY MUSIC in a PACKAGE!



**\$155.00**

Music comes to LIFE right in your living room with a "Sun Radio PAGEANT Home Music System". Priced within reach of all music lovers. Top quality at a price that makes sense.

Here's what you get for . . . \$155.00  
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The Amplifier: Grommes 50PG.

The Changer: Webcor 101-270.  
The Pickup: General Electric RPX-050  
The Speaker: University Diffusicone 12  
Prefabricated for instant use within minutes after unpacking. Pre-tested for quality in our audio laboratories. Immediate delivery. Order now.  
Same Package, Less Tuner. . . \$112.50

*Free!*

### Sun Radio's "ORIGINAL" Audio Handbook

Again SUN RADIO brings you a new edition of this valuable handbook acclaimed by thousands of Music Lovers as the "Bible" for high-fidelity home music reproduction from radio & records. 132 pages of down-to-earth information on "How To" assemble, install or improve music reproducing equipment in the home. Clear, non-technical text written for the layman. New Ideas -- New Methods -- New Systems. Write today to Dept. F or come in for your Free Copy.

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## The music you love sounds better with a



50W-2 Amplifier  
50 Watts (Peak: 100)

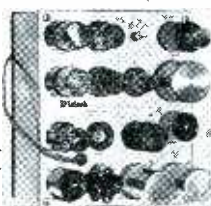
- Reaches audio peaks from 200 to 400 times the average power of speech and music
- Less than 1% distortion at peak power
- Works perfectly with variable impedance load
- 1% intermodulation distortion at peak power

### World's Most Efficient Amplifier

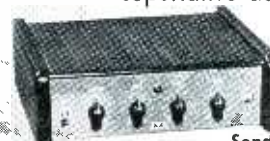
Unsurpassed for performance and quality — your entire record collection (either tape or disc) will reproduce better with lifelike reality through this new amplifier circuit.

Unequaled for quality reproduction of any sound source, the McIntosh offers **OVER 65% EFFICIENCY; DYNAMIC RANGE OVER 70 db.; FREQUENCY RESPONSE 20-20,000 cps.**

Music lovers agree that McIntosh gives superlative audio reproduction!



20W-2 Amplifier  
20 Watts (Peak: 40)



AE-2 8-stage Amplifier Equalizer perfectly matches the stable, distortion-free amplifier performance.

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- Pre-cut for your radio, phono and TV components
- Decorator designed • Superb finishes • Sectionalized

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New 1952 Edition



In these 32 pages devoted exclusively to high fidelity you will find such features as:

Contains a complete listing of all standard makes of audio equipment including such famous names as: Altec Lansing • Audax • Audio Development • Bell • Bogen • Brook • Browning • Clarkstan • Craftsmen • Electro-Voice • Espy • General Electric • Jensen • Jim Lansing • Leak • Livingston • Magnecord • Markel • Masco • Meissner • McIntosh • Pickering • Presto • RCA • Rek-O-Kut • H. H. Scott • Stephens • Thordarson • Uni-Mode • University • V-M • Webster-Chicago

- What is high fidelity
- What constitutes a high fidelity system
- The economical way to select components
- Ideas on where to install your hi-fi system
- Illustrations of typical wall installations
- Ready made cabinets for your custom installation
- Complete packages shown for the budget-wise, as well as deluxe ensembles including TV

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## NOTED WITH INTEREST

Continued from page 94

Engineers puts on its annual show at the Grand Central Palace, March 3 through 6, inclusive. Ogling hours are 9:30 to 9:00 except on Wednesday, on which day the powers that run these affairs decided we should be allowed to go home and soak our aching feet at 6 o'clock. Our sister publication, RADIO COMMUNICATION, will hold forth will full confidence in Space 325 on the third floor; HIGH-FIDELITY will be there also, standing shyly in the corner with its mouth hanging open and feeling like a Freshman at the Senior Prom.

### Factory-Sealed Records

We are not certain if this item belongs here in Noted with Interest, or if it should go into the Readers' Forum. Since it is not a letter to us, but rather a copy of one which subscriber George Burnside sent to Columbia Records, we decided on this column. Mr. Burnside's comments to Columbia were most interesting and bear quoting in full. What do other readers think about his suggestion? Here it is:

"Gentlemen:

"From my recent copy of HIGH-FIDELITY Magazine, I observe your offer to audition two superb examples of high fidelity recordings, which I would be pleased to receive and try on my Home Music System.

"I wish to take this opportunity to praise your action and interest in the audiophile. I appreciate that most of our ever-increasing group purchase regularly a considerable quantity of records. For one, I like your listing of records having good musical and technical quality, with the basic information given and the record number. I hope you will continue this practice.

"Another comment I wish to make concerns what I've found to be the weak link in this entire electronic music hobby, usually referred to as the 'Record Store'. Without malice, I must report that *at least* one out of every five LP's I have purchased have been musically impaired due to previous operation on poor equipment, or careless handling by sales people uninformed concerning the handling and playing of the microgroove record. I am forced to the conclusion that buying a record, off the shelf, that has been played by the record store, bears the same element of chance as purchasing a used car. You may get a good one, or you may get a lemon. I'll welcome the day I can buy a factory sealed record, *without* listening to it at the record store. It would be agreeable to me that such sealed merchandise could not be returned, unless defective in manufacture."

### New Book

Just as we go to press, a copy of the revised and greatly enlarged edition of Oliver Read's well-known text "The Recording and Reproduction of Sound" was received for review. We'll have full information in the next issue; meantime, those already familiar with the wealth of information in the 364-page first edition will want to place their orders now with HIGH-FIDELITY's Book Service Dept. for the new, 790-page (we said it was enlarged!) edition. Cost is \$7.95 and well worth it.

— C. F.



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## has the right combination for you... COORDINATED QUALITY, HELPFUL SERVICE and a P.D.Q.!

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### RADIO CRAFTSMEN C-10 WIDE RANGE AM-FM TUNER

Latest improved model provides brilliant performance on both bands. Has built-in preamplifier for G.E., Pickering and similar wide-range cartridges. Automatic frequency control circuit simplifies tuning and eliminates station drift. Features a flat response from 20-20,000 cps, 5 microvolts sensitivity, and less than 1% distortion at full output. Cascade limiter. Separate bass and treble controls, and inputs for phono and TV audio. Supplied with FM-AM antenna, 11 tubes plus rectifier. Polished chrome chassis 15" W, 9" D, 7" H. Shipping weight, 16 lbs.

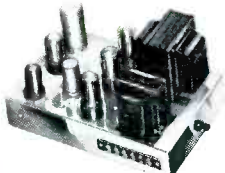


131<sup>50</sup>

**P. D. Q.  
261<sup>04</sup>**

Complete with antennas, all cables and plugs, matched housings for tuner and amplifier.

### RADIO CRAFTSMEN C-2 AMPLIFIER



New improved circuit. Designed for use with C-10 tuner. Response 20-20,000 cps. Output 10 watts with 1% distortion. Overall gain 70 db. Inverse feedback. Output impedance 4, 8 and 16 ohms. Chrome plated chassis: 7" x 10" x 16". For 105-125 V., 60 cycles AC. Shipping weight: 12 lbs.

42<sup>90</sup>

### GIVEN AT NO EXTRA COST

This superb P.D.Q. selection of matched high-fidelity equipment includes tuner and amplifier housings finished in rich mahogany leatherette to match CB-8-M corner baffle. Here is balanced tone at its musical best AND balanced appearance for attractive placement in your own cabinet or book shelves.



### V-M 955GE 3-Speed CHANGER with G.E. Triple-Play CARTRIDGE

New, improved 4-pole heavy-duty motor. An easy-to-operate mixer changer with one simple control knob. Comes equipped with GE triple-play variable reluctance cartridge and mounted in convenient metal base.



Fully jamproof—all moving parts, including pickup arm, may be held without injuring mechanism. Automatically plays 7, 10 or 12-inch records at 33 1/3, 45 or 78 rpm. Pickup arm returns to rest and motor shuts off after last record! Size: 13 1/4" W x 12" D x 8" H.

35<sup>19</sup>

### PERMOFLUX Royal 8 Folded Horn Reproducer Model CB8M-W-S

Designed to fit in the corner of a living room, den or study. Equipped with famous Royal Eight 8" PM speaker, for sparkling performance from a low of 30 cycles to a high of 12,000 cycles. Finished in rich mahogany leatherette. 24" high, 14" wide, 9 1/2" deep at top, 13 3/4" at bottom.



51<sup>45</sup>

### RADIO CRAFTSMEN C-500 AMPLIFIER



A new 15 watt "ultra-fidelity" amplifier using the famous Williamson circuit. Gives the remarkable performance for which this design is world-renowned. Frequency response 20-20,000 cps ± 0.1 db. Total harmonic distortion less than 0.01% at average listening level below 1 watt.

99<sup>50</sup>

### UNIVERSITY 6201 12-inch COAXIAL SPEAKER

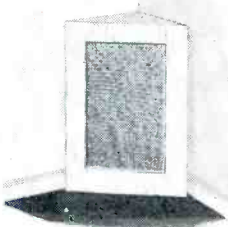
Full-range 25 watt coaxial speaker, 45 to 15,000 cps response. Complete with 2000 cycle built-in cross-over network and high frequency attenuator. 24 oz. Alnico V W-shaped magnet. 8-ohm impedance.



44<sup>10</sup>

### TERMINAL'S own KK-12 KORNER-KABINETS for 12" speakers

The answer to your space and price problems! Acoustically superior to any conventional-type speaker housing. Sturdily constructed of 1/2" thick 5-ply plywood throughout, properly reinforced to eliminate resonance and give true tone. Unfinished exterior for decorating to harmonize with your room. Complete with removable speaker mounting board, sound-absorbing pads, and hardware. Completely assembled, not a kit. 36" high, 32" wide, 23" each side.



21<sup>00</sup>

Add \$3.50 for shipping container

### NEW GARRARD Manual 3-Speed Record Player Assembly



This is the answer for those who are building LP libraries. Same high craftsmanship as found in the Garrard changer mechanism, but much more compact due to straight player arrangement. Balanced phono arm, smooth noiseless operation make this phono assembly really outstanding. Supplied with two empty cartridge holders (less cartridges).

23<sup>52</sup>

### PICKERING MAGNETIC CARTRIDGES

Marvelous fidelity with high level, distortion-free output. Delivers 70 millivolts from 40 to 10,000 cps. Stylus guard protects jewel tip. High impedance. Simple mounting in any record changer.



S-140S—Pickering magnetic cartridge with sapphire stylus for microgroove records. 15<sup>00</sup>

D-140S—With diamond stylus. 36<sup>00</sup>

S-120M—Pickering magnetic cartridge with sapphire stylus for standard groove records. 9<sup>90</sup>

AUDAK DL-6—High impedance polyphase turnover cartridge, equipped with diamond stylus for microgroove and sapphire for standard groove records. 40<sup>64</sup>

G.E. RPX-050—Triple-play cartridge, equipped with dual sapphire stylus for standard and microgroove records. 8<sup>20</sup>

### Now you can have a BETTER tape recorder... this easy, low cost way! TAPE-MASTER



Tape transport mechanism for playback with your own audio amplifier, radio or radio-phonograph combination. Tape speed is RTMA standard 7 1/2" per second. Fidelity equal to better record players. Fast forward and rewind. Complete with instructions and diagrams. 48<sup>95</sup>

### Tape-Master Preamplifier



Self-powered recording and playback preamplifier with push-pull supersonic bias and erase oscillator. Fully wired and ready to plug in. Has complete master switching for permanent installation, full monitoring, inputs for radio-phonograph and microphone outputs to amplifier and headphones. Complete with instructions. 30<sup>50</sup>

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