

SEPTEMBER-OCTOBER 1954

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Music

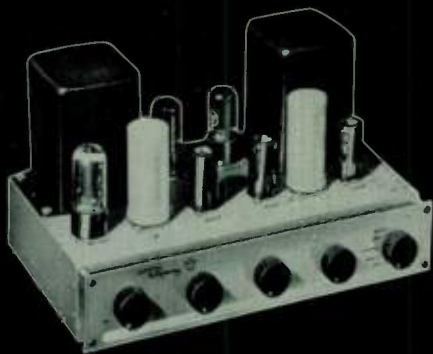
AT **HOME**



HI-FI MUSIC • EQUIPMENT • INSTALLATION • OPERATION

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World Radio History



REGENCY MODEL HF150 HIGH FIDELITY AMPLIFIER

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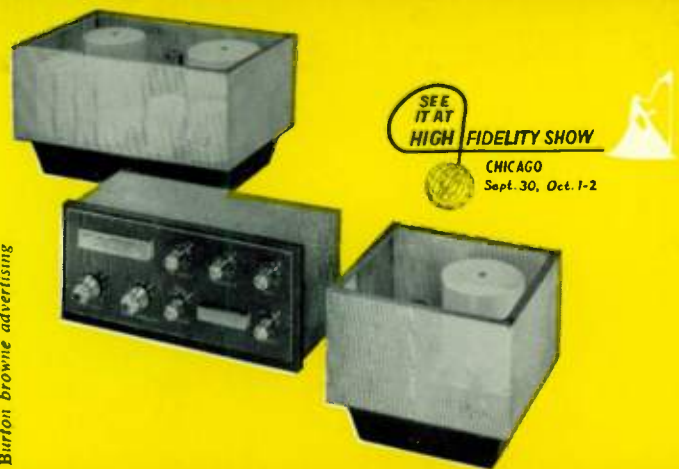
The companion to the 350A Amplifier. It is a self-contained ultra high quality audio pre-amplifier with equalization flexibility second only to the famous REGENCY HF1000. The two years research and development of the REGENCY HF1000 Ensemble are reflected in the quality of this "moderate-priced" line of REGENCY high fidelity. Standard output for all amplifiers. Audiophile Net \$154.50

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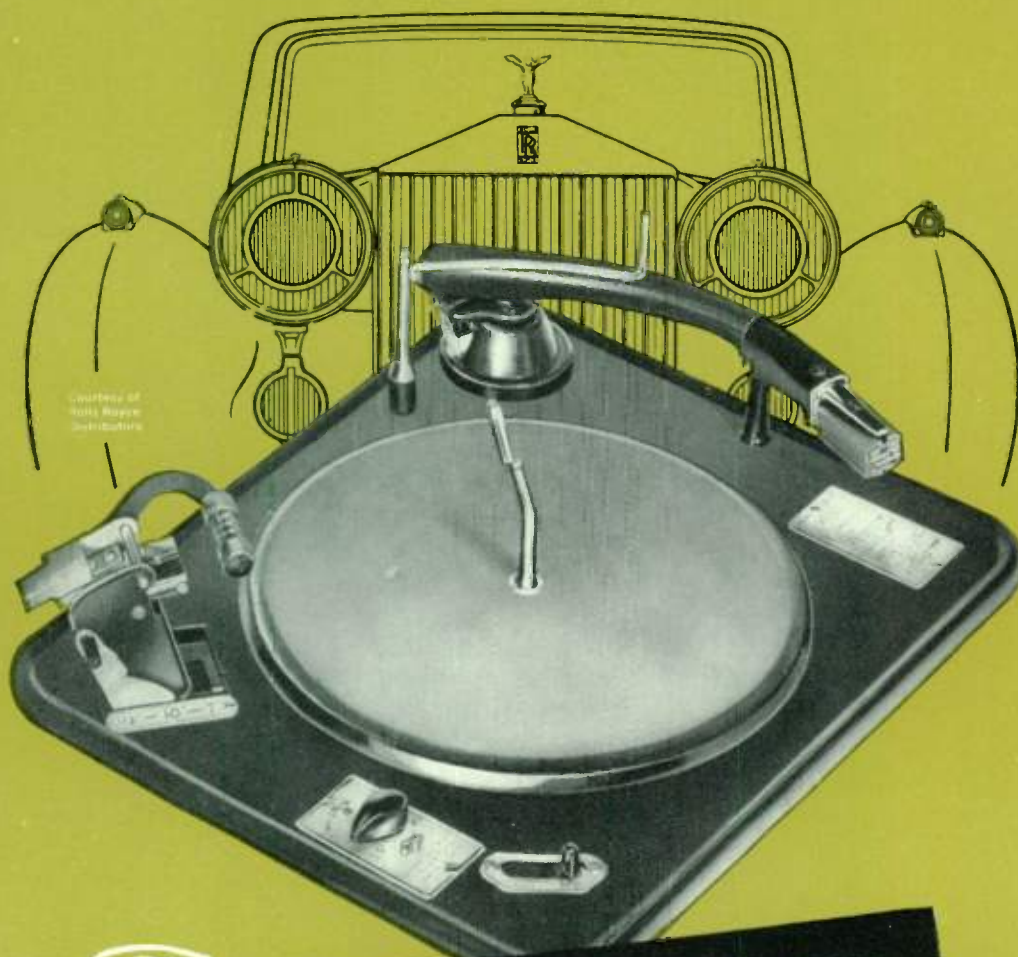
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tects long-playing records • balanced-mounted
tone arm—true tangent tracking • universal shell
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World Radio History

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Music

AT HOME

THE GUIDE TO HI-FI REPRODUCTION FROM RECORDS, TAPE AND FM RADIO



Photo by John L. Paul

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Vol. 1, No. 4 • CONTENTS • September-October, 1954

SPECIAL FEATURE

The Story of Jazz in Chicago—Fred Reynolds 19

MUSIC

Hi-Fi Record Concerts 27
Orchestral Music—Dr. Herman Neuman 28
Piano and Organ Music—David Hall 29
Music from the Opera—David Randolph 30
Spanish Zarzuelas—Dr. Herman Neuman 31
Chamber Music from Scandinavia—David Hall 32
Reviewer's Choice—Ben Deutschman 33
Children's Program—Ben Deutschman 34
Jazz Concert—Fred Reynolds 35
Music Tape Reviews—Dr. Hans Wolf 38
Report on the Newport Festival—Dorothy Gasman 44

EQUIPMENT

Better Bass Reproduction, Part I 24
Inside the Cabinets 40
FM Auto Radio 48

INSTALLATION

Hi-Fi Installations 36
How to Time Your Stylus 47

OPERATION

Top Quality from Pre-Recorded Tapes 42
Stereophonic FM Broadcasting 45

DEPARTMENTS

Records, Tape, and FM Radio 6
Music for Your Home 17
Directory of Hi-Fi Record and Equipment Dealers 56
Ideas for You 60
Advertisers Index 67
Buy, Sell, and Swap 68

COVER PHOTO: This photo of jazz in action was taken when the Louis Armstrong All-Stars were holding forth at Chicago's Blue Note. From left to right are "Fatha" Hines, Jack Teagarden, and Louis Armstrong. See "The Story of Jazz in Chicago" by Fred Reynolds, in this issue.



World Radio History

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- **Automatic Shut-off** . . . shuts off mechanism and amplifier at end of reel.
- **Dual Input Receptacles** . . . includes magnetic phono jack with built-in pre-amp, plus microphone and radio-phonograph jack.
- **Dual Output Receptacles** . . . Jack No. 1, controlled by Monitor Switch, cuts off internal speakers. Jack No. 2 permits operation of external and internal speakers.

*Slightly higher in the west. UL Approved



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September-October 1954

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Sunday from 12 noon to 6 P.M.

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*Records,
Tape, and FM Radio*

Timetable of Audio Shows

San Francisco:

September 9 to 11, Palace Hotel

Chicago:

September 30 to October 2, Palmer House

New York:

October 14 to 17, Hotel New Yorker

Boston:

October 22 to 24, Hotel Touraine

Los Angeles:

Early in February, Hotel Alexandria
MUSIC AT HOME will be represented at San Francisco, and our staff will be on hand at the Palmer House, room 805, and at the New Yorker, room 705. At this time of writing, our room has not been assigned at the Touraine in Boston.

Interest in Jazz

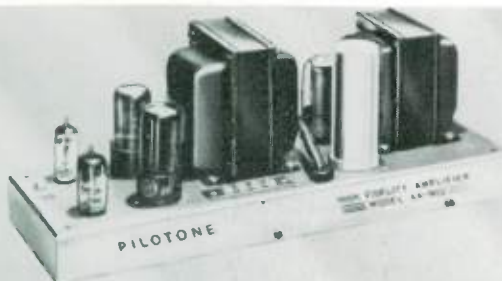
Fred Reynolds' "Story of Jazz in Chicago" was beautifully timed with the recognition



which jazz music has been given this summer in the U. S. A. Lovers of hot jazz are somewhat dismayed at the new crop of "cool" jazz musicians, and they are resentful over references to the jazzmen who started this American art form as being "musically illiterate". But no matter what is ahead, Fred Reynolds' article is a splendid documentary of this music and the men who created it. The accompanying picture was taken of him with "Mugsy" Spanier, left, during a series of interviews on Fred Reynolds' jazz program over WGN. He is also the *Chicago Tribune's* columnist-authority on jazz and its history.

South of the Border

In Mexico, the *discofilos* are becoming very
Continued on page 9



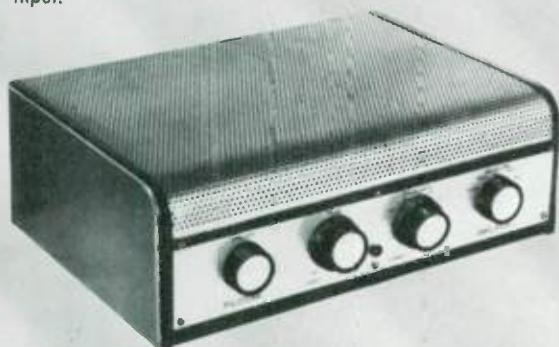
AA-902 PILOTONE AMPLIFIER \$39.95

Williamson type Amplifier with special inter-leaved wound Output Transformer and push-pull output. Contains 5 tubes including rectifier, Frequency Response ± 1 db, 15 to 40,000 cycles at 10 watt output. Distortion less than 1% at 10 watts and less than .1% at 1 watt from 30 to 15,000 cycles. Provided with speaker output impedances of 4, 8 and 16 ohms. Underwriters Laboratories Approved.



AA-903 PILOTONE AMPLIFIER \$69.50

Williamson type 10 watt Amplifier, with built-in Pre-amplifier. Seven tubes including Rectifier and push-pull output tubes. On-Off Volume, separate Bass and Treble Controls and Equalizer selector switch for LP, NAB, AES and Foreign recordings, Frequency Response ± 1 db, 15 to 40,000 cycles. Distortion less than 1% at 10 watts. Hum Level 70 db below 1 volt. Three inputs for Radio and Auxiliary equipment and one variable impedance input.



AA-420 PILOTONE AMPLIFIER \$99.50

Unsurpassed Williamson type high fidelity audio amplifier with push-pull 5881's for full 15 watt output combined with professional preamplifier for maximum efficiency and flexibility in most convenient space saving format. Six tubes plus Rectifier.

Frequency Response: ± 1.0 db, 15 cps. to 20,000 cps. at rated output. Total Harmonic Distortion: Less than 1%. Intermodulation Distortion: Less than 2% at rated output. Hum and Noise Level: 80 db. below rated output.

Dual equalization switches provide five positions of treble roll-off and five positions of bass turnover. Loudness control with individual level setting controls for three inputs.

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AA-410 PILOTONE AMPLIFIER \$49.50

Unexcelled Williamson-type High Fidelity Amplifier for consistent, dependable performance employing rugged full power 5881's for full 15 watt output. Four tubes and Rectifier.

Frequency Response: ± 0.1 db, 15 cps. to 20,000 cps. at rated output. Total Harmonic Distortion: Less than 1%. Intermodulation Distortion: Less than 2%. Hum and Noise Level: 90 db. below rated output. Potted output transformer constructed with inter-leaved winding for reduced leakage inductance.



AA-904 PILOTONE AMPLIFIER \$89.50

World famous ultra-linear Williamson Circuit using push-pull KT-66's for thirty watts audio output, now in new, convenient compact size. Frequency Response: ± 1 db, 15 cps. to 50,000 cps. at 15 watts. $\pm .1$ db, 20 to 20,000 cps. at 1 watt. Total Harmonic Distortion: Less than 0.1% at 10 watts. Less than .3% at 25 watts. Intermodulation Distortion: Less than 0.5% at 10 watts. Hum and Noise Level: 90 db. below 10 watts.

Slightly higher West of Rockies

Records, Tape, and FM

Continued from page 6

much interested in *alta fidelidad*. Welcome to the inner circle, *amigos!*

Special Records

Emory Cook, whose Sounds of Our Times records continue to delight critical listeners, has issued two new catalogs of special interest to hi-fi enthusiasts. Included are listings of new, spectacular records, both monaural and binaural, and some highly useful test records, together with information about a clip-on device for converting any tone arm to binaural use. Cook Laboratories' address is 114 Manhattan Street, Stamford, Conn.

Control Knobs and Markings

As hi-fi equipment has been made better and better, the knobs and identifications on the panels have become smaller and smaller. Dealers report that some control knobs are now so small that men with large hands just can't get hold of them. As for the lettering, many people are unable to read markings on the controls, even through their glasses, unless the light shines on the panel from a particular angle. Frequently, people do not use the controls correctly because they misread the identifications, so the dealers say. Another source of complaints is that smooth knobs on controls tend to work harder with use. There should be no difficulty in remedying these defects which, although they are minor, cause a great deal of aggravation.

Jazz Program Experiment

Each Monday night at 9:05 to 9:35, Coca-Cola is putting on a jazz program over WQXR and WQXR-FM, under the direction of John S. Wilson and George Simon. The combination of comments and music make very interesting listening.

English Components

Equipment manufactured by Pye, Ltd. of Cambridge, England will be available soon in the U. S. A. The company has opened an office at 200 Fifth Avenue, New York 10, with William M. Cagney in charge.

Good Music Broadcasting

A letter from C. M. Edmonds of KCMS-FM Manitou Springs, Colo.: "Bless your buttons, or maybe I should say bless Music at Home. I would never have known about GMB or about the average good music listener. Please send me 10 copies (July-August) and bill the station. . . . I have written a letter to the head of GMB, asking to join their group. . . . We are moving soon to Cheyenne Mountain, and then we will cover the eastern half of Colorado."

Tape Editing Service

With more and more hi-fi enthusiasts using their equipment to make tapes for various personal and business purposes or for cut-

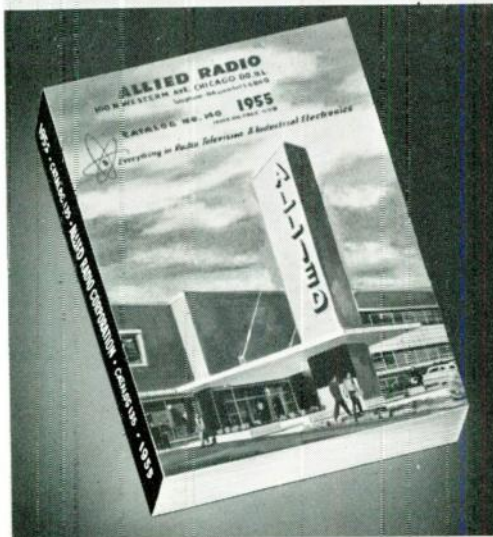
Continued on page 14

September-October 1954

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of complete
music systems
and high fidelity
components . . .

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Whether you make your Hi-Fi selections in person at our Sound Studios—or from our catalog—our audio specialists will help you to select the equipment that will completely satisfy your personal listening desires—and save you money.

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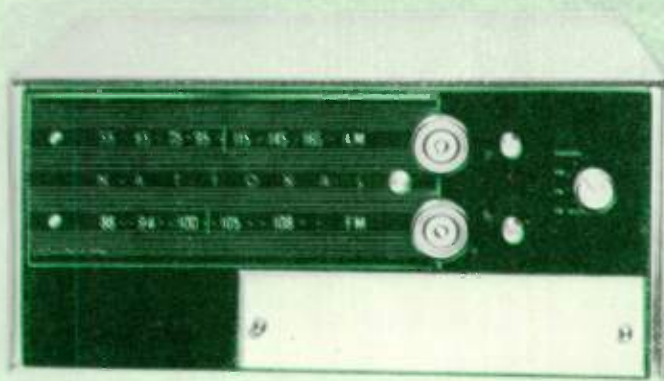


Out of Whimsy

Silence

Music . . . clean and pure . . . filling the room with an ethereal, fragile beauty. The mood is magic. But the slightest hiss, a jarring crackle, a nagging hum can shatter it into a thousand glittering fragments. The mood is never shattered when you listen through **National's** superb new HORIZON line. No distortion of any kind intrudes. "Listening fatigue" becomes a meaningless term. The sensational FM MUTAMATIC tuning, for example — a **National** exclusive — completely eliminates all hiss and noise between stations. Stations leap out of velvety silence, stay locked in. **National's** high capture ratio, gets rid of adjacent stations impossible to tune out on ordinary equipment. Another exclusive feature is **National's** new "linear impedance" detector. Extreme sensitivity pulls in weak stations strong and clear. Similarly, tube noise, microphonics and hum in tuner and amplifiers have been virtually eliminated. Such a supreme audio achievement is the result of **National** engineering — engineering respected throughout the world for 40 years — engineering that is "tuned to tomorrow!" For further details,

Please turn page!



HORIZON *Criterion*

AM-FM TUNER \$169.95 (SIZE: 16½" x 7")

Never before a tuner so versatile!

You can enjoy full-band AM!

You can listen to matchless, drift-free FM!

You can hear both at the same time, using dual sound systems!

You can receive revolutionary new binaural broadcasts as they are made available in your area! Two gain controls and separate tuning condensers are provided—one for AM, one for FM!

Exclusive Mutamatic FM Tuning eliminates all hiss and noise between stations, so annoying when tuning conventional tuners! Stations leap out of velvety silence—stay locked in automatically! Unit features new "linear impedance" detection. Superior design eliminates drift.

An exceptional capture ratio rejects all unwanted signals up to 80% of the strength of the desired signal. The FM sensitivity proves the name—"the Criterion"—by which all other tuners are judged.



HORIZON 20

20-WATT AMPLIFIER \$84.95 (SIZE: 14½" x 4")

To surpass the present high level of amplifier design, National proudly introduces new power amplifiers with a revolutionary new output circuit employing unity coupling.

With unity coupling, the output transformer is no longer required to supply the coupling between output tubes for distortion cancellation as in normal push-pull circuits. Instead, the transformer supplies only the impedance matching between the tubes and the speaker system, thus eliminating impulse distortion created by transformers. Music is reproduced with an unclouded transparency—at all listening levels—never before achieved!

The HORIZON 20 is a 20-watt amplifier with a total harmonic distortion of less than .3% and total intermodulation distortion of less than 1% at full rated output. Frequency response is ± 1 db 20 cps to 20 kcs; ± 1 db 10 cps to 100 kcs. Power response at rated output is $\pm .15$ db, 20 cps to 20 kcs. Hum and noise is 80 db below rated output.



HORIZON 10

10-WATT AMPLIFIER \$79.95 (SIZE: 14½" x 4")

Incorporating the revolutionary new unity-coupled circuit in a 10-watt amplifier design, the HORIZON 10 offers performance never before achieved at such a moderate price!

The built-in preamp-control unit offers a choice of 3 record equalization curves, a loudness control and separate bass and treble controls.

Harmonic distortion is less than .5%; intermodulation distortion, less than 2% at rated output. Frequency response is ± 1 db, 20 cps to 20 kcs; power response, ± 2 db, 20 cps to 20 kcs. Hum and noise are better than 70 db below rated output on high-level input, better than 50 db on low level input.

a new

HORIZON



HORIZON 5

PREAMPLIFIER-CONTROL UNIT \$49.95 (SIZE: 2½" x 10½")

The HORIZON 5 achieves a new high in frequency response (± 1 db, 20 cps to 100 kcs) and voltage output (up to 10 volts)—a new low in distortion (less than .2% harmonic, .3% intermodulation)!

Four inputs, 7 record equalization curves, a loudness-volume control and bass and treble controls are provided.

Entire unit slips quickly, easily into either the tuner or 20-watt amplifier.

tuned to tomorrow



National

FOR COMPLETE SPECIFICATIONS WRITE DEPT. M AT



Furniture by Hans Knoll Associates
Gown by Cecil Chapman

in high fidelity

To match the brilliant audio achievements engineered into National's new HORIZON series, top industrial designers have styled the units so magnificently they need no cabinets to enhance any room setting, traditional or modern. Yet, if cabinet housing is desired, installation is simplicity itself. The tuner locks into a plain rectangular opening. It's self-supporting and needs no shelf.

NATIONAL CO., INC., 61 SHERMAN ST., MALDEN 48, MASS.



You get...all **3**

...lyrical, brilliant highs

2 rich, vibrant bass...and...

...full-bodied mid-range 3

with the new
UNIVERSITY 3-WAY
"Companion"

here within the confines of a small, versatile enclosure has been engineered a high fidelity 3-way loudspeaker system to enhance the spatial qualities characteristic of true concert hall listening. So compact in design and decor conscious in concept that every room becomes a music room. Truly a "Companion" to provide you with the finest in musical pleasure *everywhere* in the home.

Features Galore Make the University "Companion" responsive to your personal listening tastes:

- A special balance control permits the adjustment of the system's tonal quality.
- Automatic "Sessions" timepiece plans your musical day and even records that favorite program while you are away. Set a simple control and your record player, tape recorder or radio will perform or shut off automatically.
- At home in any room... at one's easy chair, on an end table, within a bookcase, in a functional headboard, in the den, or on wrought iron legs (optional) anywhere in the home.
- Beautifully-grained and handrubbed imported birch. Available in Honduras Mahogany and blonde finishes.




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UNIVERSITY LOUDSPEAKERS
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80 South Kensico Ave., White Plains, New York

Records, Tape, and FM

Continued from page 9

ting discs, a need has developed for professional editing. To handle this work quickly and at moderate cost, the firm of Tape Production Consultants has been formed under the direction of David Hall, at 127 E. 73rd Street, New York 21.

For Free Only

Columbia has pressed 25 previously unreleased recordings which they call their Priceless Editions series, which can be obtained at no cost other than a purchase slip from a record store, and 25 cents to cover the cost of mailing. These records are not sold. A list of the titles can be obtained by writing Columbia Records, Inc., 793 Seventh Avenue, New York City.

Note for Record Reviews

From "The Second Tree from the Corner" by E. B. White: "The hope and aim of the word-handler is (or should be) that he may communicate a thought or an impression to his reader without the reader's realizing that he has been dragged through a series of hazardous or grotesque syntactical situations."

Buy-Sell-or-Swap

This special service to readers starts on page 68. Items may be sent in at any time. Those received before October 1st will appear in the November-December issue. Those coming in after that date will be held over for January-February. There's no charge for 35 words sent in by individuals. Items are not accepted from dealers or business enterprises.

More Hi-Fi Equipment

New components have been brought out by Magnavox, including an FM-AM tuner, pre-amp control, two amplifiers, and a record changer all matched in appearance as well as electrical design, and two cabinet speakers. They will be sold by dealers who carry Magnavox radio and TV sets. Incidentally, the Magnavox series 300 TV chassis, has 2 large and two small speakers operated from a 20-watt amplifier.

Why AM Has Deteriorated

Ten years ago, when there were only 700 AM broadcast stations on the air, audio quality was already being reduced by the crowding of channels, as explained by this statement in an NBC engineering report to the FCC: "Standard radio broadcasting is at present limited to an upper modulation frequency of 5,000 cycles as a result of the 10,000-cycle spacing of radio channels, but most studio equipment and transmitters are capable of transmitting up to 10,000 cycles or higher. However, satisfactory reception with this wide band is not generally possible in the evening, because of monkey chatter from adjacent-channel stations, so that a restriction in frequency

Concluded on page 55

Why you need a **TRANSCRIPTION ARM** for your home music system

Today there is much discussion of amplifiers, loudspeakers and proper enclosures . . . all necessary for top hi-fi performance in your home music system. Yet one of the most important parts of your music system has long been neglected . . . the arm that guides the cartridge across the record. The arm acts as a housing for the cartridge and plays a similarly important part to that of the speaker enclosure. An arm should not change the characteristic performance of a good cartridge by introducing resonances or distortion of any sort.



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|---------------------------------|---|
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| HIGH OUTPUT | .5 Volts working into recommended 3-meg-ohm load. No preamps, NO microphonic problems. |
| NO HUM | Inductive pickup from motors or stray fields is eliminated. |
| HIGH COMPLIANCE | Greater than unity! 1.2×10^{-6} dynes/cm. Practically NO record wear, tracking problems minimized. |
| NO EQUALIZATION REQUIRED | The Ultra-Linear cartridge is INHERENTLY linear. |

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MUSIC for YOUR HOME

THERE'S no doubt about it — the big new interest among hi-fi enthusiasts is in (pre-recorded) music tapes. And that is quite reasonable since, at this stage of technical progress, the nearest-to-perfect recordings are those made on tape. That is why all recording sessions are now taped. The master discs are then cut from the tape, not from the original music as in the past.

Those who are qualified to offer well-informed opinions seem to feel that the status of music tapes at this time is comparable to that of LP records at the time they were first introduced. There is one important difference: When LP's were first offered to the public, it was necessary to buy a new record-player and pickup in order to use them. All changers and turntables at that time were single-speed 78-rpm. models, and LP's couldn't be played with what were then standard styli!

Music tapes, however, are designed to be played on any tape machine that runs at $7\frac{1}{2}$ ips., and there are thousands and thousands of those machines in use already. So it may well be that, this fall, music tapes will get off to an even faster start than LP records did. The signs point in that direction.

Along with highly enthusiastic comments about the new tape releases there has been a certain amount of criticism of the musical quality and background hiss. The blame is put vaguely on the tapes, or the lack of perfected tape-copying equipment. Here is some information that may shed light on these points.

FIRST OF ALL, it can be stated quite definitely that equipment has been developed and is now in use that produces copies so perfect that listeners cannot hear any difference between them and the master tape. If any substandard tapes have been released, they must be considered only as the mistakes that occur inevitably in the early stages of introducing any new, highly technical product.

So, with the audio range of $7\frac{1}{2}$ -ips. tape extending well out toward 15,000 cycles, it appears that the limitation on tone quality must lie in the equipment. Some tape machines are, unfortunately, of inherently poor design. But if a good machine fails to give high-quality performance from music tapes, that is probably due to 1) faulty alignment of the head, 2) accumulated dirt across the gap, or 3) loss of the pressure pad that holds the tape against the head.

But then there's the man who says: "I make tapes off the air with my machine, and the playback quality is beautiful, so I know the poor results I get from pre-recorded tape is not due to my equipment."

That would seem to be convincing evidence against the tape. Nevertheless, the fault probably lies in the machine or, more specifically, in the head. Here's why: If a record-

ing is made with the slot at other than right angles to the tape, no harm is done when the tape is played back against the *same* head, since the lines on the tape and the slot in the head will be exactly parallel. That is not the case, however, when a music tape, made with a head in perfect alignment, is played back against a head that is slightly tipped.

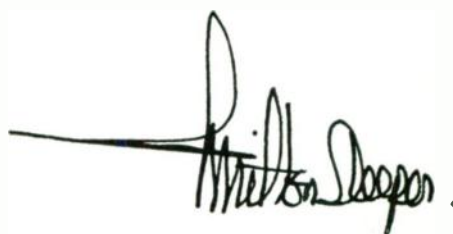
Experience in running down reports of poor quality from music tapes has shown that, in practically every case, the trouble lies in the equipment — not the tape — and usually something has gone wrong at the playback head. In fact, the use of music tape provides an excellent check on the condition of a tape machine.

TO AUDIO ENTHUSIASTS who are constantly seeking to improve the quality and realism of reproduction, the availability of binaural music tapes opens up a whole new field of activity. This raises the question: Does binaural reproduction afford an appreciable improvement?

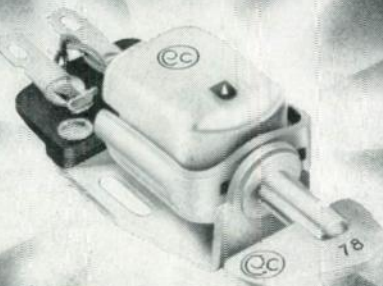
There is good reason for doubt on this point, at least on the part of those who have heard some of the public demonstrations. If the volume from a single speaker is turned up high enough, in a room that is very live, the sound will bounce around the walls, floor, and ceiling to such an extent that, if you close your eyes, you can't tell where the speaker is located. Similarly, a binaural speaker system can be turned up to such volume that the auditory perspective is lost, and the purpose of binaural reproduction is defeated. And that is just what has been done at some of the public demonstrations!

Binaural tapes can add enormously to the beauty of music reproduction. The effect is more than that due to the second dimension. It gives a *quality* of reproduction that cannot be achieved by any monaural system. It must be emphasized, however, that the achievement of this effect depends upon restraint exercised by the individual who adjusts the volume controls.

One of the nice things about a binaural system is its relatively low cost. Two moderately-priced speakers, a pair of 10-watt amplifiers or one of the biampifier units will perform wonders, and there are inexpensive binaural tape machines to drive them. Such a system will provide fascinating entertainment, and the opportunity for endless experiments, if you are so minded.



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Famous names and familiar faces are represented in these long-ago pictures. From left to right, they are the fabulous Pee Wee Russell, Jelly Roll Morton, and Ray Bauduc at the time he was with Ben Pollack's band. Photographs in this article were obtained through the cooperation of Bill Grauer Productions, producers of Riverside Records

The Story of Jazz in Chicago

By FRED REYNOLDS

BACK in the roaring 20's, bass thumper Jim Lannigan of the original Austin High School gang was playing at the old Friar's Inn in Chicago. Apparently the underside of Jim's bass reflected the light in such a way that it made an irresistible target. A local hood pulled out a revolver and fired. The bullet caught the seam, and the back of the fiddle split apart. The band played on!

Another time, a fire-brand Irish cornet player named "Muggsy" Spanier kept on blowing away while two mobsters were killed right under his horn. He can't to this day tell you what tune he was playing.

Jazz in Chicago was like that in those days!

Today, there is the Blue Note, Jazz, Ltd., and a half dozen minor spots. Occasionally a big name band plays at the Chicago Theatre, the Aragon, the Trianon, the Edgewater Beach Hotel, and that's about it. The gangsters, from what we read in the *Chicago Tribune*, are still lurking around the sewers, but jazz and good music, what there is of it, is at least performed in respectable places. The trouble is that it is so hard to find. It wasn't always that way.

Chicago got its jazz in a big way when Secretary of the Navy Josephus Daniels closed New Orleans' famed

Storyville in 1917. This sizable chunk of New Orleans represented America's first and last effort to legalize prostitution. And jazz took the rap. However, Representative Andrew Volstead unwittingly came to its rescue. With the 19th Amendment, Chicago became the home of the thirsty, the city of booze, barons, and big money. It was all the incentive necessary. Over a trail well marked by a few pioneers came the New Orleans jazzmen.

They came by riverboat, up the Mississippi, for that was the natural route and you could play the whole trip. They came in traveling minstrel shows, because you could get around that way too, and the last stop was generally Chicago. They rode up on the train, when someone sent for them. At first the Windy City's reception to New Orleans jazz was tepid. The opening wedge, apparently, was driven by Sugar Johnny's Creole band, playing at the DeLuxe Cafe on South State Street at 35th. But the great electrifying spark was provided when Joseph "King" Oliver came to town.

Oliver had been big in New Orleans, and he got big in Chicago in a hurry. Not only for reputation and for music, but big in body too. He put jazz on a business basis. When he called his musicians to a rehearsal, they were all there on time, and "The King" had an enormous



revolver with which he emphasized his point. Oliver went first of all into the celebrated Royal Gardens Cafe at 31st and State. In 1919 he was booked into the Dreamland Dancehall with a band of his own. Jimmy Noone was occupied, so Oliver sent back home for clarinetist Johnny Dodds. With his arrival, the marvelous Creole Jazz Band took shape.

It came into full flower when Oliver sent for and added a second cornetist in the person of Daniel Louis Armstrong. Here was a terrific, a daring step, and it payed royal dividends all the way 'round to home plate. Every night the Royal Gardens Cafe, renamed Lincoln Gardens, rocked to the music of the Creole Jazz Band. Musicians gawked in astonishment at the fabulous two-cornet breaks taken in unison by Oliver and Armstrong. The crowds came to listen, to cheer, and to drink whatever was offered in the way of refreshment.

Among those who came to listen and to take inspiration were Chicagoans Frank Teschemacher, Bud Freeman,

Jimmy and Dick McPartland, Eddie Condon, and Jim Lannigan. They were the Austin High School gang and the real driving spirit of what became known as Chicago-style jazz. There were other Chicagoans too, or Chicagoans by trade if not actually by birth. Among them were Benny Goodman, "Muggsy" Spanier, Dave Tough, Floyd O'Brien, George Wettling, Joe Sullivan, "Red" McKenzie, Jess Stacy, Milton Mezzrow, and Gene Krupa. Just around the corner were Bix Beiderbecke, Jack Teagarden, and Pee Wee Russell.

It was a teeming time, and the headlong trend was upwards and outwards. For a while it was wonderful. In places like Dreamland, Lincoln Gardens, the Pekin Theatre, Sunset Cafe, the Vendome, it was a mighty chorus of New Orleans jazz. A partial list of the New Orleans greats who were then playing around Chicago must include Joe Oliver, Sidney Bechet, Barney Bigard, Johnny and Baby Dodds, Jimmy Noone, Honore Dutrey, Paul Barbarin, Minor Hall, Zutty Singleton, Jelly Roll



Above: an extraordinary photographic record of King Oliver's Creole Jazz Band in 1923. Left to right are Honore Dutrey trombone, Baby Dodds drums, King Oliver rear, Louis Armstrong front, Lil Hardin, Bill Johnson banjo, and Johnny Dodds clarinet

Left: Jimmie Dorsey came into fame when Paul Whiteman was helping to usher in the era of sweet music which became swing

Right: Benny Goodman, musician, stylist, and businessman, was born in Chicago, and there, at the Congress Hotel, he won the title of the "King of Jazz"





Morton, and Lil and Louis Armstrong as the most popular.

Armstrong, or "Satchmo" as he was called by the rooters, had left Oliver in 1924 to go with Fletcher Henderson in New York. A year later he came back to Chicago and got together his own band. Before that, however, the Paramount Company had taken the Oliver Creole Jazz Band into a recording studio, and those records, along with the records Oliver made for Gennett, Okey, and Columbia at about the same time, stand as milestones in jazz history. They're among the best of New Orleans jazz in or out of Chicago. Throw in the Armstrong sessions and you have most all of it.

Meanwhile, too, the young white Chicagoans were bursting with activity. Their music, now loosely identified

as Chicago-style jazz, really didn't differ too much from the New Orleans jazz that the Negroes were playing. For Chicago jazz was just two steps away from New Orleans music, the step in between being the New Orleans Rhythm Kings — that fabulous group of white New Orleans jazzmen, with Paul Mares, George Brunis, Leon Rappolo, and Ben Pollack, who had come to Chicago's Friars' Inn in 1922. Separating the two jazz styles, however, was a basic difference which you can hear clearly on the records. That was the rhythm. The beat was almost an even four-four. The music didn't flow quite the way the New Orleans style did, the ensemble was hard and driving, and there was a marked tendency towards more extended solo work by various members of the band.



Above: Once upon a time, the late Bix Beiderbecke's band looked like this. The legendary Bix is seated at the far right, but there are no records to show the names of the others, nor when this picture was taken

Left: The genial Count Basie in a serious mood. From Kansas City he took to Chicago a kind of jazz that had a new swing to it, played by a solid rhythm section

Right: Daniel Louis Armstrong left New Orleans to join "King" Oliver's jazzband in Chicago right after the first war. Called "Satchmo" by his rooters, he is still a top figure





The Condon Club band in 1946: Brad Gowans and Jack Teagarden trombones, Tony Parenti clarinet, Jean Schrador piano, Murray Fel drums, Wild Bill Davison cornet, and Jack Lesberg bass



Hickory House fifteen years ago, left to right: Hot Lips Page, next unidentified, Joe Marsala, Bud Freeman, last unidentified

In the picture "A Song Is Born": Barney Bigard, Vic Dickenson, Louis Armstrong, (Danny Kay), Lionel Hampton



Chicago-style jazz culminated in a series of recordings by the McKenzie-Condon Chicagoans, the Chicago Rhythm Kings, the Jungle Kings, and several other groups. These records mark the epitaph and the epitome of Chicago-style jazz.

Jazz in Chicago began to come apart at the seams for a number of reasons. Or rather it followed the times and outgrew itself. As the roarin' 20's roared to a furious climax, and the big bull market bulled its way to the inevitable crash, the synthetic fashion called for everything to be bigger, more expensive, more imposing. An 8-piece jazz band wouldn't do any more; the boys and girls wanted 12 pieces and the sentimental trash of the day. When you take an 8-piece jazz band and expand it to 13, usually the arranger takes over, and spontaneity, which is the very heart and soul of jazz, springs an uncorkable leak. By 1928 the jazzmen weren't playing jazz so much.

Practically the only place where jazz continued was in the recording studios. Thomas Alva Edison's unique invention, the phonograph, was attracting more and more attention, and what made the greatest distinction of all was the new electrical recording process. So records were improved a thousand per cent, and this made a difference in three ways. The records were heard by bandleaders the country over, and they hired away many of the boys who did the playing. This happened especially to the Austin High Gang, and their side-kicks, who had to take what was offered for economic reasons. Away they trickled to New York. And because New York City was fast becoming the center of the record industry, the New Orleans jazzmen headed that way too, thinking to find better recording contracts and steadier employment. It was in New York that the bands were booked and the songs published. Finally, a gadget that eventually became known as the jukebox was finding its way into restaurants and clubs. The jukebox was a cheap, sometimes profitable, slick, easy way to give the public music that it wanted to hear, and the electrical recording had a quality far superior to the old mechanical disc. This gave a kind of in-the-room sound to the music, without the expense and sometimes the trouble of hiring a live jazzband.

One more thing that began to tell on the New Orleans and Chicago jazzmen was the terrific pace of the times, and the bathtub gin. A lot of them simply dropped dead.

Around 1928 jazz in Chicago, save for a few isolated spots, gave way to an era of sweetness. This carried through the depression to a certain night in November, 1935. It was very tough going for many of the Chicago and New Orleans jazzmen, as the name leaders insisted that their sidemen be able to sight read, and too many of the jazz immortals couldn't even read "Tom Swift." So they fought for a livelihood and lived on ozone sandwiches, while music in Chicago was headlined by such citizens as George Olsen, Jan Garber, Wayne King, Ted Weems, Ted Lewis, Edgar Benson, Coon-Sanders, Bernie Cummins, Henry Busse, Paul Ash, Art Kassel, Ben Bernie, Isham Jones, Guy Lombardo, Anson Weeks, and Hal Kemp. Don't get me wrong; most of these gentlemen made splendid dance music, especially Kemp and Jones,

and some of their recordings are unforgettable. Besides that, their music was what the public wanted, and what the people were willing to pay for in those days was what counted. These bands could play "Brother, Can You Spare a Dime?" and "I Can't Give You Anything But Love, Baby" with the best of them.

Even though the years 1928 through 1935 can be safely termed the sweet era in music, the kernel of swing was germinating in New York. This building process was under the direction of big bandleaders like Fletcher Henderson, Duke Ellington, Red Nichols, Ben Pollack, Luis Russell, Glen Gray, and you've got to include Paul Whiteman simply because he had Bix and Tram and the Teagardens and the Dorseys. If it could go in New York, then why couldn't swing go in Chicago? Why not indeed! Carlton Coon and Joe Sanders played "Nobody's Sweetheart" a little more daringly than they had in the past. Ted Lewis brought into his band "Muggsy" Spanier, George Brunis, "Fats" Waller, and Benny Goodman, and even the "Poet of Circleville" couldn't keep them down all the time.

By late 1935 we were hardly out of the depression. But by then we'd got used to it, and the spirit of the American people was more optimistic. Swing music rather reflected that change in spirit. Here, too, that one-two punch known as radio-and-records became important for, by records and on the radio, a new band could come to fame almost over night. And fame usually brought with it grand financial advantages. In Chicago, the Blackhawk Restaurant was known as the cradle of name bands, not so much because of the Blackhawk, but because the *Chicago Tribune's* great voice of the Midwest, WGN, broadcast from there to a nation-wide audience every night of the week.

By Christmas time, 1935, we were ready for a change, and the man most qualified to give us that change was the best of all the Chicagoans. He was the finest all-around musician, the most businesslike, the most persuasive stylist. He was and is Benny Goodman.

Benny Goodman and his orchestra had done right well playing their kind of music on the last hour of the National Biscuit Company's program, "Let's Dance." Then the band had made a sensational showing in person at the Palomar Ballroom in Los Angeles. However, as it's been proved so often, what goes for L. A. assuredly does not apply necessarily to the rest of the United States of America. Shortly after the affair at the Palomar came to a close, the Goodman band was booked into the Joseph Urban Room of the Congress Hotel in Chicago. Here was a tough proposition. If the Goodmanites made it here they were pretty much in all over. The room had been closed for months, and there recently had been some trouble with the drinking water. The room wasn't to be redecorated, or its name changed. The hotel simply wanted to open up and do business.

For the first time, actually, the band was billed as a "swing band," and for the first time folks began to refer to Benny as "The King of Swing." On November 6, 1935, Benny Goodman and his orchestra took over the Joseph Urban Room. It wasn't terrific, but it was good,



Sid Bechet's kindly smile has survived the ups and downs of the hectic years since he left New Orleans for Chicago, more than 30 years ago

and the reviews next morning in the Chicago papers were excellent. Gradually, it all began to build. The engagement was extended from month to month, and the band got a fine commercial radio program for the Elgin Watch Company. Swing had arrived! Benny Goodman was its King, and he attained his greatest success in the same city where he was born.

Continued on page 52



Big Sid Catlett and his drums are gone, but Muggsy Spanier, with his trumpet, still upholds the traditions of original New Orleans jazz



Part 1. The Air-Coupler Provides Deep and Powerful Bass Reproduction. Here are Instructions for Assembling it — By Milton B. Sleeper

UNLIKE conventional speaker cabinets which are designed for wide-range reproduction, the Air-Coupler enclosure with its speaker is used only for bass reproduction, up to 175 or 200 cycles. Thus it does not replace conventional cabinet speakers, but is strictly an accessory device, and must be used in conjunction with a coaxial speaker or a combination of mid-range speaker and tweeter.

It is four years since the details of the Air-Coupler were first published in *FM-TV Magazine*, but the interest in this device for bass reinforcement of speaker systems has not diminished. In fact the article "Origin of the Air-Coupler" in the March-April issue of *MUSIC AT HOME* set off a flood of requests for details of this enclosure design, and subsequent, up-to-date information.

This series of three articles will cover construction of the enclosure, the networks required for complete speaker systems, and methods of installing the Air-Coupler inconspicuously.

What the Air-Coupler Accomplishes

To understand what the Air-Coupler contributes to improving the quality of music from records, tape, and FM

radio, it is necessary to consider first the basic problems of sound reproduction. The discussion can be shortened considerably by proceeding on the generally-accepted assumption that good reproduction is relatively easy to obtain at frequencies above 150 cycles.

A high-quality speaker system, driven by a good amplifier, can reproduce frequencies above 150 cycles in a manner which even the most critical listener will find acceptable. Below 150 cycles, however, new problems arise, and the faithfulness of audio reproduction, obtained by conventional methods, begins to fall apart.

A related and familiar effect is the loss of low frequencies at low volume. This explains the general practice of turning up the volume for demonstrating hi-fi systems. Then, if the system cannot deliver true bass notes, at least the harmonics are strong enough to give a synthetic effect of reproducing the very low, fundamental tones.

Much criticism has been made of wide range systems in which the extension of response is only in the upper frequencies. That is not hi-fi reproduction. It is nothing more than over-emphasis of the upper range, leaving a serious deficiency in the low frequencies upon which most music depends for the rhythm.

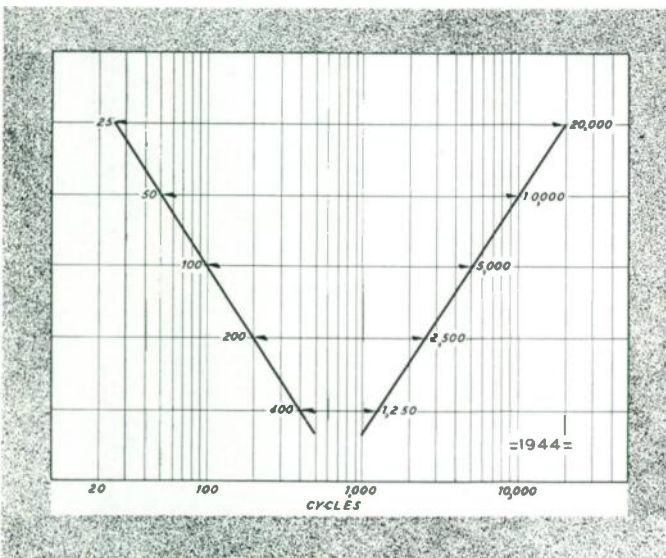


Fig. 1. The original chart indicating balance of upper and lower response

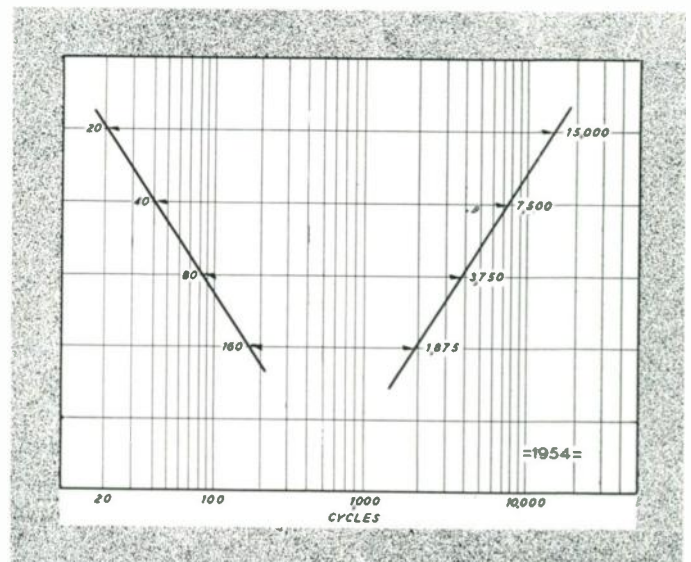


Fig. 2. This chart is modified in accordance with present-day thinking

It is widely agreed among audio experts that the most pleasing quality from an audio system is obtained when the product of the lower and upper frequency limits is approximately 500,000.¹ Thus as indicated in Fig. 1, if the response of a given system only goes down to 200 cycles, the treble should cut off at about 2,500. If it goes higher, the frequencies will seem over-emphasized, since the bass and treble will not be in proper balance. As treble response is extended, there must be a corresponding extension of the bass in order to maintain a pleasing balance.

Today, the aim is to reproduce all frequencies from 20 to 15,000 cycles. Therefore Fig. 2 was plotted on the basis of maintaining a product of 300,000, rather than 500,000. Moreover, and this is of the utmost importance, the output

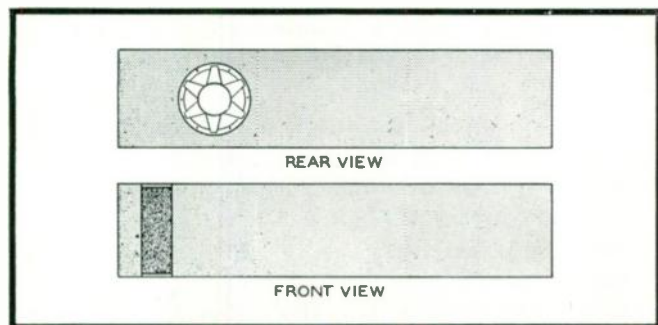


Fig. 3. The Air-Coupler enclosure is a plain box, only 6 ins. thick

level at each end must be in the same relationship as the power output of the instruments which create the music. Reproduction cannot qualify as being truly hi-fi that does not maintain this balanced relationship.

In practice, it is easy enough to obtain all the sound output needed for the middle-range and treble frequencies. The difficulties are encountered in reproducing fundamental tones with adequate output from 150 cycles down.

The Air-Coupler is comprised of a very simple enclosure and a 12-in. speaker, as illustrated in Fig. 3. The box is 6 ft. long, 16 ins. wide, and 6 ins. deep, with the speaker mounted on the *outside*. There is a slot on the opposite side, near the end, from which the sound issues. Inside are simple partitions which form air columns of different lengths. Very rigid construction is employed to prevent vibration of the enclosure itself, so that all the energy is devoted to driving air through the slot. That's all there is to the Air-Coupler!

The Importance of Bass Reinforcement

A good amplifier delivers sufficient power to provide all the volume required at 28 or 30 cycles. The power is dissipated, however, by the inefficiency of most speakers at the low frequencies, due to lack of adequate air-loading of the cone. As a result, the cone vibrates, but it either vibrates without producing sound at the fundamental frequency, or it makes a sound at some harmonic frequency.

Yet the importance of full bass reproduction is obvious when it is considered that, while the frequencies above

¹ This subject was discussed in considerable detail by G. M. Nixon, C. A. Rackey, and O. B. Hanson of NBC, in a paper written in 1944 entitled "Down to Earth on 'High Fidelity' ". This paper was reprinted as part of an article entitled "Checking up on Audio Progress" in *FM-TV Magazine*, July, 1951.

perhaps 200 cycles provide most of the melody, frequencies below that point furnish most of the rhythm.

This can be demonstrated by the use of filters. If all frequencies above 5,000 cycles are cut off, the music is not pleasant, but it is bearable. But if all frequencies below 200 cycles are cut off, the music isn't music any more. It is like clothes without a body to wear them! In other words, the bass provides the substance, the roundness, and the rhythm of the definitive sounds produced at the higher frequencies.

Thus it can be said that, for all the criticism of the one-note bass, or beer-barrel boom characteristic of juke-box installations, the fact that people spend millions of dollars in nickels to get such music does not indicate necessarily that they have tin ears, but rather that they want the emotional content which the bass supplies. A false bass is generally preferred to music with no bass at all.

Quality and Volume Level

The secret of the enjoyable tone from an Air-Coupler system — that special quality that keeps listeners asking to hear another record and then another — lies in the fact that this type of installation provides full bass reproduction in balance with extended treble range at all levels, even when the volume is turned down to bare audibility.

That characteristic is of special importance to hi-fi enthusiasts who must operate their equipment in small living rooms, or keep the level down to avoid disturbing

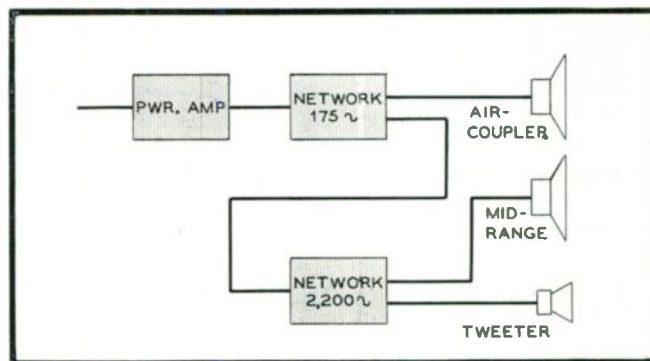


Fig. 4. There will be complete network diagrams in Part 2 of this series

neighbors or small children. To cite a specific example: There is a passage in the Saint Saëns *Symphony No. 3 in C Minor* when the organ notes drop down softly to a point where you would expect to hear nothing more. With a conventional speaker system, there is a moment of silence or, at best, an unmusical fluttering sound. The Air-Coupler, however, delivers the full magnificence of the 32-cycle notes, and it rolls out with such power that the vibration of the air can be felt as well as heard. Even with the overall level control turned down until the music is barely audible, the bass notes are maintained in their proper proportions.

Probably you want to ask at this point: "How much bass boost is required to get that kind of reproduction from an Air-Coupler, and what kind of compensation is used in conjunction with the volume control?"

The answer is that neither bass boost nor volume compensation should be used with the Air-Coupler. Music

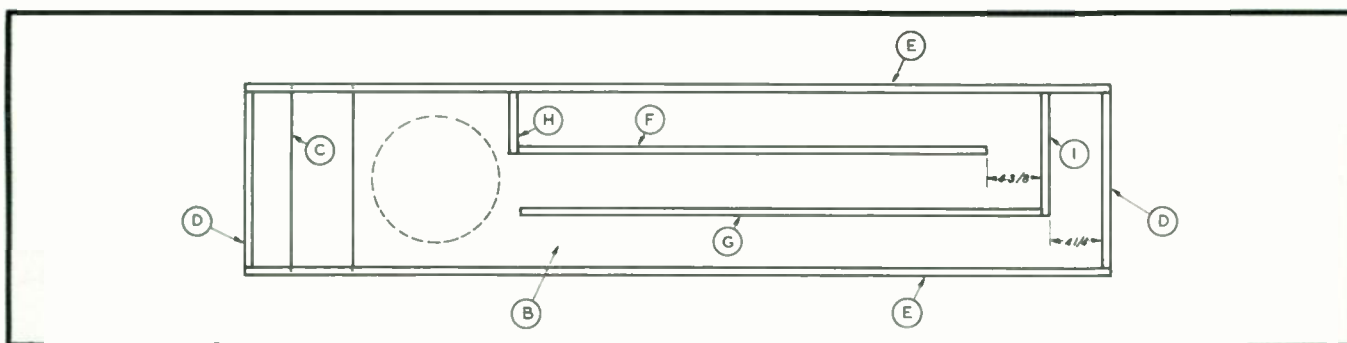


Fig. 5. The sides and partitions look like this when they are fastened to the under side of the front plate. Letters correspond to Fig. 6

from any source should be played flat, except for such equalization as may be needed in the preamplifier to match the recording characteristics of individual records. You will find the bass reproduction so clear that you will hear distortion introduced when any artificial control is applied to the bass.

Many people, hearing an Air-Coupler installation for the first time, have remarked that they had no idea that there were such bass tones engraved on ordinary records. Never having heard them before, they simply assumed it was impossible to record them. Actually, the problem is not one of recording, but of reproduction!

The Basic Air-Coupler System

It is a very simple matter to plan and install an Air-Coupler system, or to add an Air-Coupler to an existing installation. Although the original idea was to build the Air-Coupler under the floor, conventional designs to be described are suitable for use in any living room.

Fig. 4 shows the speaker system most commonly used. The output of a high-quality amplifier is connected to a dividing network with a crossover point at about 175 cycles. This feeds all frequencies below 175 cycles to the Air-Coupler, and the higher frequencies to a second network with a crossover at about 2,200 cycles. In that way, the output of the amplifier is distributed as follows:

Air-Coupler Speaker: All frequencies up to 175 cycles

Mid-Range Speaker: 175 to 2,200 cycles

Tweeter: All frequencies above 2,200 cycles

Reports from a great number of owners indicate that, from their experience, this is the preferred arrangement. Each of the three speakers handles the range that it can reproduce to best advantage. Moreover, this setup provides maximum flexibility in determining the optimum locations for the mid-range speaker and tweeter with respect to the Air-Coupler. That is very important. The location of the Air-Coupler is not critical at all, because there is no directional effect at the

Continued on page 63

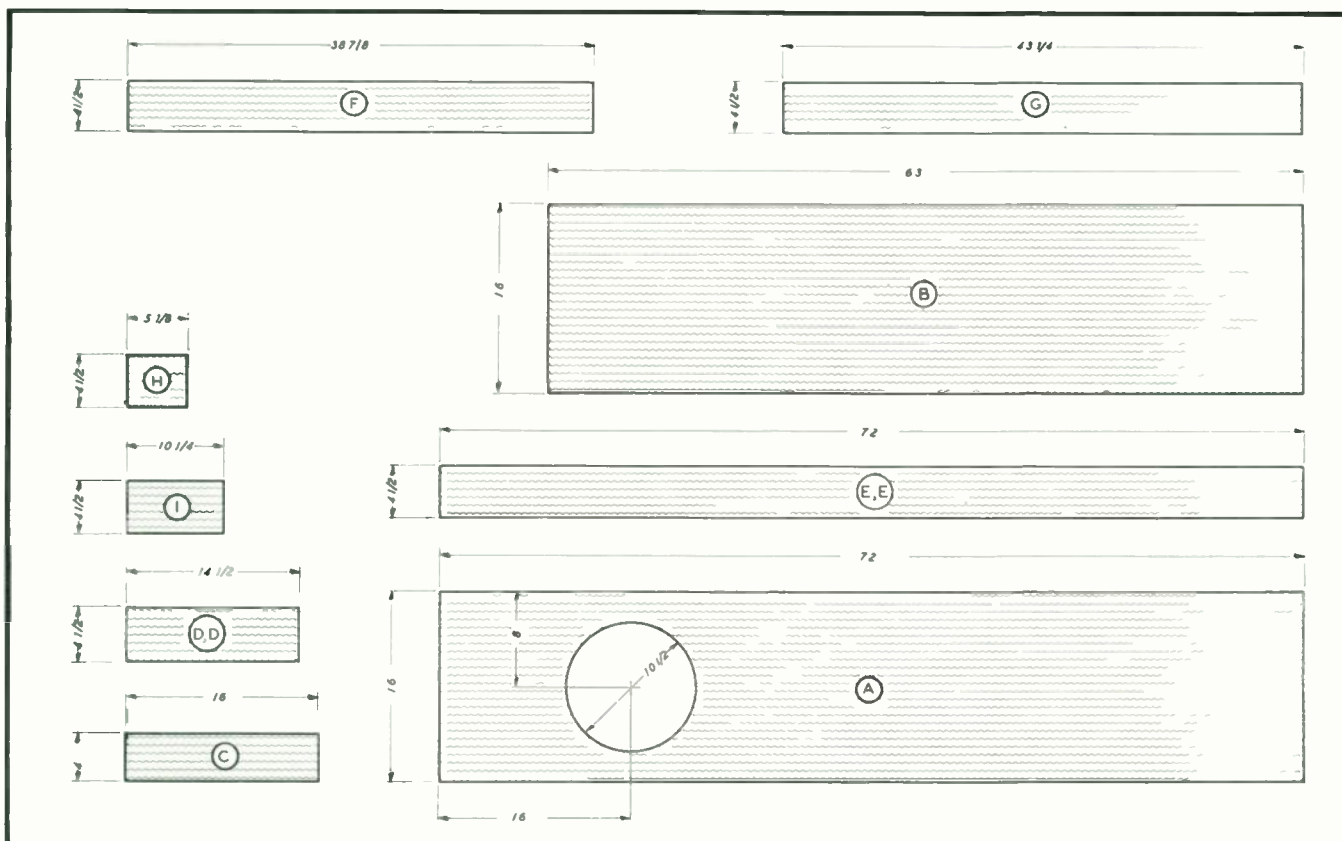


Fig. 6. The dimensions of the 11 pieces which make up the Air-Coupler enclosure. All are of 3/4-in. plywood. They must be cut very accurately

HI-FI RECORD CONCERTS

Eight Different Types of Music Recommended for Your Entertainment

WHEN the first Music-at-Home Programs were presented in this Magazine, there was no doubt about the advantages of the plan, but there was no way to know, in advance, how they would be accepted by our readers. As letters about these Programs began to come in, and at this time they have been received in great numbers, certain facts emerged.

There is even more interest in these programs than we expected. Many of our readers are checking their records against the programs in order to fill in and round out their collections. Criticisms of the planned-program idea have been received, however, from such people as those who say they always listen alone because no one else understands their choice of music, from the cultists who say that this is no way to show off a hi-fi system, or from those individualists who admit they wouldn't think of doing anything they hadn't thought of first!

Accordingly, as you will see from the pages following, the format of the programs has been changed so that they also serve the needs of those who are only interested in reviews of records which merit recommendation by the experts who make up the programs.

Group Listening Is Not New

It has been quite a surprise to learn that, although Music AT HOME was the first magazine to offer planned programs of recorded music, a great many listening groups were already in existence, some of which were formed long ago.

Here, for example, is a letter from George A. Brewster, 9433 221st Street, Queens Village, New York:

"Every once in a while a fuss is made about an innovation that turns out not to be an innovation at all, but a good idea that's really been kicking around for years and years. Such is the suggestion of the Music-at-Home Hi-Fi Concert Society . . . I must be hiding my light under a bushel, because when some of my friends and I started collecting records some twenty years ago, that's exactly what we did. We compiled concerts of about an hour's duration, and listened to the selections as though they were parts of a formal evening concert, and this was two decades before we had a magazine to tell us how . . .

"The idea was so fundamentally sound that later, as proud owner of a new radio-phonograph (high fidelity 1940 style) I determined to set aside a period each week for a formal recorded program of my own . . . Even with the limitation of my disc collection (this was eight years before LP's) I managed to compile a series which ran for many weeks without repetition. This last point is of some importance. How many collections have withered simply through playing some particular favorite to death, to the neglect of less well-established, though not necessarily inferior, music? My concert series, which I started

in May of 1940, was to continue, with some interruptions, to the present day. Over this period some 400 concerts were attended, covering every phase of recorded music . . .

"The sprawling mixture of piano sonata, operatic aria, symphonic fragment, and five Strauss polkas that so often is the only kind of home concert that far too many record collectors know, must necessarily be made more orderly if the greatest benefit is to be derived from discs. The formalized Home Concerts which I (and others, no doubt) have been presenting for ourselves all these years is certainly the best method for preventing musical malnutrition, indigestion, unbalanced diet, and similar aesthetic ills."

More Variety in Program Types

Thus Mr. Brewster explained his own experiences, and summarized the comments of others. Meanwhile, we have been studying the programs which have been presented in Music AT HOME, exploring the possibilities of further improvement in the format in the light of comments and suggestions from our readers. An immediate result is the change in this issue of *types* of programs. That is, we have worked out a list of eight different kinds of music which should be represented. These are:

Orchestral music	Chamber music
Keyboard music	Special feature
Opera	Children's music
Operettas or show music	Jazz

This assures greater variety than in the past, and answers the requests of those who have said: "The kind of music I enjoy most was not represented in the last group of programs." You will see that provision is made for a Special Feature program. That leaves one open for unusual music, or music of special interest.

Recommendations and Reviews

Another modification is in the notes about the individual records. For the benefit of those who have asked for record recommendations, it should be pointed out that the programs are made up of *recommended* records, carefully and thoughtfully chosen for the benefit of collectors as to comparative merit, importance of the music, and audio quality in the opinions of the experts by whom the programs are planned. Now the comments will be in the form of reviews, rather than program notes.

Thus, the format of the hi-fi programs is being perfected in response to the opinions of our readers, while the idea of planned programs is maintained and improved in its details. The extent of the modifications already made can be seen by comparing the programs in this issue with those published in March-April. And we shall continue the careful study of letters from our readers to the end that further improvements can be made.

ORCHESTRAL MUSIC

17th Concert, 1954 Series

By DR. HERMAN NEUMAN

TO BE HEARD AT HOME

1. **Berlioz**—Trojans at Carthage (complete)—Paris Conservatory Orchestra, soloists, and vocal ensemble under Hermann Scherchen **Westminster WAL 304**
2. **Berlioz**—L'Enfance du Christ (complete oratorio)—Little Orchestra Society, Choral Art Society, and soloists under Thomas Scherman **Westminster 199**
3. **Berlioz**—Symphonie Fantastique—London Symphony Orchestra under Hermann Scherchen **Westminster 5268**
4. **Berlioz**—Romeo and Juliet Op. 17 (complete)—Boston Symphony Orchestra, Harvard-Radcliffe Chorus under Charles Munch **Victor LM 6011**

INTRODUCTION

WITH the drawing to a close of the Berlioz year (he was born 150 years ago last December 11th), it is gratifying to note that the spirit of the old master is finding worthy media dedicated to the high purpose of renewing interest in the richly varied musical message of this unique tonal creator.

In the very front rank of devotees, one must count the growing number of just plain music lovers, collectively united in the recently organized Berlioz Society of America. This flourishing group was sparked by the enthusiasms of W. E. Gillespie, of the faculty at Phillips Exeter Academy; John Squadra, New York plastics designer; Duncan Robinson of New York, an ardent Berliozian; Jacques Barzun, whose brilliant two-volume study "Berlioz and the Romantic Century" is just about the finest biography in English; and other kindred souls. Today, with the eminent conductor Charles Munch serving as president, an Advisory Board of leading professionals, and a host of well wishers and supporters from the ranks of musicians and music lovers, the Spirit of Berlioz must rejoice in this major effort in its behalf.

Louis Hector Berlioz was the son of a well-to-do doctor, who decided that his son should take up the career of medicine. But, from his youth, Berlioz showed a natural aptitude for the art of music. At fifteen he was even attempting to have some of his works published by the famous firm of Pleyel in Paris. Dutiful son that he was, Berlioz completed his medical course, received his Bachelor of Science degree, promptly shelved the whole business, and proceeded to concentrate on music.

Berlioz, like Mahler, has been the object of perpetual controversy. The fervent admirers point to his brilliant orchestration (even the most persistent detractors grant that) and the power and originality of his descriptive and dramatic ideas. The detractors point up lapses into bad taste, vulgarity, and exhibitionism. In view of the constant ebb and flow of musical thinking about this or that composer, it is better that each music lover arrive at his own estimate of Berlioz after a thorough exposure to the tonal creations of the French master. The disks listed above are recommended for the consideration of future Berliozians.

ABOUT THE RECORDS

1. Hermann Scherchen's characteristically penetrating command of the work at hand, aided by Westminster's acclaimed technical treatment, assure a performance of quality. In the early days of his youth, Virgil's Aeneid made a deep and lasting impression on Berlioz, culminating in his writing the lyric drama *Les Troyens*. Originally, an opera in five acts consuming about six and one half hours to perform, Berlioz was finally obliged to divide it into two parts — *La Prise de Troie* and *Les Troyens à Carthage*. It was the latter part that achieved success when produced at the Theatre Lyrique in Paris (1863).

2. This is a masterpiece of beautiful simplicity. For those who may think of the Berlioz music as rousing and at times noisy, we suspect they will find this piece subtle and soft. The famous trio for harp and flutes is a gem. It is possible that Berlioz was expressing the emotions of his own childhood after the stormy years of experience. It

is not a great religious masterpiece such as the *Messiah* or Bach's *B Minor Mass*. It is rather a series of pastel-like musical pictures, reverent and gentle in character.

The concluding movement of the Flight into Egypt is one of the most beautiful and original parts of the work. It depicts the Holy Family resting by the wayside and concludes with the word "Alleluia" sung offstage by four sopranos and four contraltos. It begins with an overture scored for strings, two flutes, oboe, and English horn. The chorus of the shepherds is especially charming in its melodic simplicity. This recent Columbia release made in America is rewarding and decidedly a must for Berliozians.

3. For your Berlioz Library, you will no doubt want at least one copy of his best known work — the *Symphonic Fantastique* (*Episode de la Vie d'un Artiste*). The composer was 26 when he wrote it. Franz Liszt attended the premiere performance and later made a masterful piano arrangement which helped to establish the reputation of Berlioz in Germany. The recently released Westminster reading by the able Scherchen is worth your attention, although I am personally loyal to the Pierre Monteaux performance (Victor LM 1131) or Van Beinum's (London LL 489).

4. Another Berlioz masterpiece is the dramatic symphony *Romeo and Juliette*. This excellent recording, made in America, has been awarded the Grand Prix by the French Academic Charles Cros. Charles Munch knows his Berlioz, and it will be interesting to hear his forthcoming Victor release of the *Damnation of Faust* music.

HI-FI RECORDS for a MUSIC-at-HOME CONCERT of

PIANO and ORGAN MUSIC

18th Concert, 1954 Series

By DAVID HALL

TO BE HEARD AT HOME

1. **Samuel Barber**—Four Excursions for Piano, Op. 20—Rudolf Firkusny
Columbia ML2174
2. **Charles T. Griffes**—Piano Sonata (1917)—Leonid Hambro **Walden W100**
3. **Charles Ives**—Hawthorne, The Alcotts—from Piano Sonata No. 2 ("Concord, Mass., 1840-1860")—John Kirkpatrick
Columbia ML4250
4. **Roger Sessions**—Choral No. 1—Marilyn Mason, organ **Esoteric ES522**
5. **Virgil Thomson**—Come Ye Disconsolate (No. 1 of Variations on Sunday School Tunes)—Marilyn Mason, organ
Esoteric ES522

INTRODUCTION

IT HAS been said that American music consists not of one but many musics, so varied in style have been the creations of American composers for the concert hall from the days of Edward MacDowell to the present. The program offered here bears this out in a number of unexpected ways, and covers a full generation of American composition for the keyboard—from 1909, when Charles Ives began his *Concord Sonata*, to 1949, when Samuel Barber composed his *Excursions*.

Samuel Barber, one of our most popular contemporaries, has long been considered to be the refined cosmopolitan lyricist of American composers—as represented by his beautiful *Adagio for Strings* and tersely dramatic *Essay No. 1 for Orchestra*. Yet he is represented on this program with four charming piano pieces in the American regional manner.

Though the youngest composer represented, he is also the most conservative in musical language. Charles Ives (1874-1954) is the oldest and also the most "modern" and original of the lot—a New England regional tone-poet with a mind of his own, endowed with a magnificent capacity for poetic evocation. The *Concord Sonata* is in many ways his most representative and completely-realized, large-scale work. The four movements evoke in turn the transcendentalism of Emerson, the satanic fantasy of Hawthorne, the tenderness of the Alcotts, and the brooding of Thoreau at Walden Pond. Most brilliantly pianistic is the music of Charles

Tomlinson Griffes, whose impressionist pieces *The White Peacock* and *Poem for Flute and Orchestra* won him the beginning of a following during the World War One period. In the dynamic and intense *Piano Sonata* of 1917, we discover Griffes searching out new paths of musical expressions—paths whose destination he was never to find, since he died only a few years later.

Some striking American music for the organ is to be found in the powerful toccata-like *Choral No. 1* by Brooklyn-born, New England-reared Roger Sessions. The musical language here is international, not regional. With composer-critic Virgil Thomson's *Sunday School Tune Variations*, we have not only a vivid return to American regionalism with a vengeance, but also some of the same tongue-in-cheek humor that pervades so much of the music of Charles Ives.

ABOUT THE RECORDS

1. Barber's *Excursions* might be styled regional American counterparts to Schubert's *Moments Musicaux*—thoroughly delightful listening, with fine playing by Czech-born Rudolf Firkusny and good recorded sound.

2. The Griffes *Piano Sonata* is fiercely intense music, cast in a very personal modern-romantic style—extremely "pianistic" in idiom, a "natural" of its kind which most concert virtuosi of Griffes's day and ours have chosen to overlook. Leonid Hambro, one of the best of our younger pianists, offers here his finest performance on records with

strikingly fine recorded sound to match on the Walden label.

3. The Ives *Hawthorne* will sound like wild music on first hearing, which is not surprising, since the composer meant us to think of "fantastical adventures into the half-childlike, half-fairylike phantasmal realm . . . the old hymn tune that haunts the church and sings only to those in the churchyard, to protect them from secular noises, as when the circus parade comes down Main Street . . ." The *Alcotts* music evokes the beauty and tenderness of that family's way of life, and more specifically the pleasure taken in playing from Beethoven's *Fifth Symphony* four-hands at the old spinner. John Kirkpatrick has long been known as the interpreter of this particular work, and as such his reading of the Ives *Concord Sonata* can be accepted as definitive.

4. Roger Sessions's *Choral No. 1* offers not only a modern counterpart of the grandiose early baroque *intonazione per organo* of the Venetian Giovanni Gabrieli, but also, in this particular recording, a thrilling hi-fi showpiece. Superb playing by the gifted young woman organist, Marilyn Mason.

5. Virgil Thomson's treatment of the Sunday school hymn tune *Come Ye Disconsolate* is a delight! Like his music criticisms, Thomson's music offers a cunningly contrived juxtaposition of the witty, the serious, and the poetic. Again fine playing by Marilyn Mason and an excellent recording.

HI-FI RECORDS for a MUSIC-at-HOME CONCERT of

MUSIC from the OPERA

19th Concert, 1954 Series

By DAVID RANDOLPH

To Be Heard at Home

1. **Monteverdi**—Il Combattimento di Tancredi e Clorinda—Chamber Orchestra of the Scuola Veneziana, under Angelo Ephrikian. **Period SLP 551**
2. **Mozart**—The Magic Flute—Soloists and Vienna Philharmonic Orchestra under Herbert von Karajan. **Columbia SL-115**
3. **Moussorgsky**—Boris Godunov—Chorus, Orchestra and Soloists of the Bolshoi Theatre, under N. S. Golovanov. **Period SPLP 554**
4. **Berg**—Wozzeck—Soloists and Philharmonic-Symphony Orchestra of New York, with Dimitri Mitropoulos. **Columbia SL-118**
5. **Strauss**—Der Rosenkavalier (Finale Act I, Finale Act III)—Soloists and the Württemberg State Orchestra, under Ferdinand Leitner. **Decca DL 9606**

ABOUT OPERA MUSIC

THE famous Englishman Dr. Samuel Johnson defined *opera* in his dictionary as "an exotic and irrational entertainment". It might be argued that since the venerable Dr. Johnson lived several centuries ago, his definition applies only to opera as it existed in his day. However, subsequent developments in opera have served to prove the rightness of his definition, even — alas — as to its irrationality. It cannot be denied that many opera plots do strain the credulity of the beholder, since they abound in improbable stories involving assorted types of violence. However, it cannot be denied that opera has drawn from composers some of their most appealing music—at times tender and lyric, at times extremely dramatic.

In a sense, there is an advantage in listening to opera through the medium of the phonograph. While it is true that we are denied the visual spectacle that often accompanies a stage production, we are able to concentrate on the music itself, with fewer distractions. Thus, an evening at home spent listening to an opera concert can be a very rewarding musical experience.

ABOUT THE RECORDS

1. This is more than just a curtain-raiser. Nor is it merely one of those dutiful nods in the direction of old music. Rather, this opera is an extremely moving, emotional experience. While it is true that the innovators in music were not always able to infuse their works with as much inspiration as originality, Monteverdi is one composer who did combine both. It is necessary only to read the text as you listen to the music, in order to realize with what care Monteverdi sought to express the emotions behind the words. Historically, also, this work is a landmark in music, since it contains the first known use of the tremolo — the rapid repetition

of the same note, which makes for a feeling of expectancy — and the pizzicato — the plucking of the strings. The taxing role of the narrator is sung in this recording with great conviction by the contralto Maria Amadini. You should have this Period disk in the opera section of your record library.

2. For sheer "irrationality", the libretto of Mozart's *Magic Flute* should be awarded some sort of prize. The music, however, is some of the most sparkling and beautiful ever to come from Mozart's pen. One can choose at random any one of the 6 LP sides comprising this album, and still be certain of a treat! The recording, I am pleased to report, is *not* complete. Columbia has wisely chosen to omit the *recitativo secco* ("dry recitative" — how aptly named!), with the result that this set consists of the arias, and the concerted portions of the score. It emerges as pure gold!

3. Few operas in the entire history of music are as believable, as pure drama, as is Moussorgsky's masterpiece. In the first place, it is based on an actual historic character, Boris Godunov, who became the Tsar of Russia in 1589. Moreover, and perhaps most important of all, the action centers around the doings of credible human beings, who behave under the influence of emotions that we can recognize. At no point are we expected to put credence in any supernatural or magical occurrences. As a result, the story is genuinely moving. Moussorgsky has written music that at all times underlines the action, and heightens the sense of drama. I would suggest that, for this opera concert, the final two sides be played. The "Death of Boris" is an unforgettable musico-dramatic experience.

Moussorgsky wrote two versions of the opera, the first in 1870 and the second, two years later. Because his orchestration was considered crude, the opera

is usually heard nowadays with Rimsky-Korsakov's revisions of the score. Most modern performances end with the death of Boris. In the Period recording, however, the final two scenes appear in the order in which the composer originally planned them: first the death of Boris, and then the scene in the forest in which a simpleton, who is left alone on the stage, laments the fate of the Russian people. One must hear this final scene to realize how heart-rending it can be.

4. For believability of another type, one could hardly out-do this story. Alban Berg, the disciple of Arnold Schoenberg, completed the composition of what the famous English critic Ernest Newman called an "original, ingenious, amazing and gripping opera", in 1921. At that time, Europe was seeing the development of an artistic movement known as *expressionism*. Surprisingly, though, in spite of the fact that this opera seemed to follow 20th Century trends, it was actually based on a story by George Buechner, a German dramatist who died at the early age of 23, as long ago as 1837!

Ten years after he finished the opera, Berg himself said that it was his intention to make "the music serve the realistic action of the theatre". One has merely to listen to the final side of this LP album to realize how well he succeeded. The work is sung in the original German, but a very clear synopsis of the action accompanies the album. The entire set is excellent from the standpoint of both the performance and the recording.

5. As an encore to this entire opera concert, Strauss' music supplies a tuneful and appealing close, which will have everyone humming. The performances are entirely sympathetic ones, and are recommended because of the sheer entertainment they provide.

HI-FI RECORDS for a MUSIC-at-HOME CONCERT of

MUSIC from the SPANISH THEATRE

20th Concert, 1954 Series

By HERMAN NEUMAN

TO BE HEARD AT HOME

1. **Emilio Arrieta**—Marina—Orquesta de Camera de Madrid
Montilla FM 23-24
2. **Amadeo Vives**—Maruxa—Madrid Chamber Orchestra under Ataúlfo Argenta
Montilla FMLP 4-5
3. **Alegrías Y Penas de Andalucía** (Joys and Sorrows of Andalucía)—Luis Maravilla guitar, Pepe Valencia voice
Westminster WL 5135
4. **Gonzalez Riog**—Cecilia Valdes—Cuban Operetta
Cetra Soria 70001

INTRODUCTION

It is just possible that you may have had your fill of the overplayed items from the pens of the mighty four—Beethoven, Mozart, Brahms and Schubert. If so, it's time for a change. Why not try some of the interesting and pleasant music from the Spanish lyrical theatre, dating back to the 17th Century, in which spoken dialogue is intermingled with song, à la operetta or musical comedy. It all began at the Royal Palace of La Zarzuela near Madrid, during the reign of King Philip IV. Usually, the occasion for a Fiestas de Zarzuela was an important event in the household of the royal family, a birth or a wedding. Dramatists of great renown collaborated with musicians of lesser fame. Through the years the zarzuelas changed in character with the changing times.

The earliest zarzuelas were something resembling pastoral eclogues, frequently religious plays dealing with the Mystery of the Eucharist or comedias harmonicas. Lope de Vega's *La Selva sin Amor* (1692) was close to opera, perhaps the first in Spain. In the 18th Century, the zarzuela had definitely established itself as a Spanish comedy with popular music and dances currently in vogue. With the introduction of Italian opera, the zarzuela declined. Other minor forms of entertainment came to the fore, notably the *tonadilla*, often approximating a theatrical sketch, frequently satirical in character, and evoking matters concerned with the everyday life of Madrid. Pablo Esteve and Blas de Laserna were two of the most renowned composers of tonadillas.

In the first half of the 19th Century Spain fell upon evil days, politically and financially. Outside influences took

over and the battle for survival tested the spirits of the more progressive and patriotic nationals. A new type of zarzuela sprang up, something akin to the French *opéra comique* but nationalistic in character. The leaders in this trend were Barbieri, Hernando, and Arrieta. After the founding of the Teatro de la Zarzuela (1856) came Tomas Breton, Ruperto Chapi and Amadeo Vives. There were *Zarzuelas grande* (3 acts) and *zarzuelitas* (1 act). Of the former, *La Dolores* by Breton (Montilla 14) and *Marina* by Arrieta (Montilla FM 23-24) are outstanding examples. Breton's *La Verbena de la Paloma* (Montilla — 2) is a gem in the zarzuelita genre. So if you've a mind to go Spanish, these records are recommended for your listening pleasure.

ABOUT THE RECORDS

1. Emilio Arrieta, the composer of *Marina*, was born in Navarra. At the age of 16, he sailed a catboat from Barcelona, Spain, to Italy. He arrived in Milan 60 days later. The voyage made such an impression on him that he seems to have carried the atmosphere of the sea into the major portion of his compositions.

This zarzuela tells, in the delightful Spanish manner, of a young sea captain, (Jorge) who is secretly in love with an orphan (Marina). When a ship builder (Pascual) asks her hand in marriage, she undertakes to test Jorge's affection. She asks Pascual to obtain Jorge's consent. Thinking Marina is in love with Pascual, Jorge consents, thus upsetting Marina's plan. However, in a jealous rage, Pascual accuses Marina of receiving a letter from a sailor. It develops that her father wrote the letter prior to his death. Jorge wakes up just in time to declare his love for Marina, Pascual is rejected, and Marina gets her man.

I first became acquainted with this work through the old Columbia 78's. The fine cast included such stellar singers as Mercedes Capsir, Jose Mardones and that extraordinary Spanish tenor, Hipolito Lazaro. Unfortunately, this is now a collector's item. So we will have to be content with the Montilla recording, starring Maria Caballer in the title rôle. It is quite good.

2. Another zarzuela worthy of your listening attention is *Maruxa* by Amadeo Vives. He was a bandmaster at Malaga and a choirmaster at the Chapel of Loreto in Barcelona. In collaboration with Millet he founded the famous Orfeo Catala. Remember their superb (Victor) 78's of the Bach Cantatas? Later, Vives went to Madrid to become a highly successful composer of zarzuelas. He composed over 140 stage works. Perhaps *Maruxa* is closer to opera than the previously mentioned work.

3. Here's a fine cross section of flamenco music. Without benefit of the experience of visual participation, it nevertheless exudes all the excitement, despair, sensuality, and simplicity of the flamenco music, including the sideline comments, foot tapping, hand clapping so characteristic of a Spanish *jaleo*. Note the strong Arabic and Mozarabic flavor. The record includes *bulerias*, a favorite of all Flamenco artists; *judea* with its strong Hebraic character, and *granadinas*, suggesting the music of Albeniz.

4. The well known Cuban composer Gonzales Riog carries on the zarzuelas tradition with this popular Cuban operetta. A favorite of our West Indian and South American friends, it is music that everyone will enjoy thoroughly.

CHAMBER MUSIC

21st Concert, 1954 Series

By DAVID HALL

TO BE HEARD AT HOME

1. **Grieg**—Violin Sonata No. 3 in G Minor, Op. 45—Fritz Kreisler with Sergei Rachmaninoff at the Piano
Victor LCT1128
2. **Nielsen**—Quintet for Winds, Op. 43—Copenhagen Wind Quintet
London LL734
3. **Sibelius**—Quartet in D Minor, Op. 53 ("Voces Intimae")—Played by the Griller String Quartet
London 11304

INTRODUCTION

FOR MOST of us, the music of the Scandinavian countries—Norway, Sweden, Denmark, Finland, and Iceland—is summed up in the work of two masters: Edvard Grieg, lyric tone-poet of Norway, and Jean Sibelius, epic bard of Finland. Only since the end of World War Two have we begun to discover through recordings the music of the North in its broader aspects—in terms of Denmark's great symphonist, Carl Nielsen, as well as through the work of such gifted composers of a later generation such as Harald Saeverud and Fartein Valen of Norway, Knudage Riisager and Svend S. Schultz of Denmark, and Dag Wiren and Lars-Erik Larsson of Sweden.

This particular program offers highly representative chamber music by the three giants of Scandinavian creative music—Grieg, Nielsen and Sibelius. A lyric poet at heart with a profound understanding of the folk-songs and tales of his beautiful and rugged country, Grieg as a composer looks back in some respects to the ardent romanticism of Robert Schumann; but in others he anticipates the impressionism of Debussy and the folkloristic modernism of Béla Bartók. The Schumannesque aspect of Grieg is best revealed in his beloved *Piano Concerto*; while Grieg the modern shines forth in his wonderful piano settings of Norwegian peasant dances known as *Slaater*, Op. 72. By far the most important and representative of Grieg's piano music is to be found in the powerful and impassioned *C Minor Violin Sonata* of 1887—music which is a product of his richest creative period when he wrote his finest songs (such as the *Haugtussa* cycle) and the delightful *Holberg Suite for Strings*.

Carl Nielsen, though a Dane to his fingertips, marks a departure from the romantic nationalism of Grieg and the

early Sibelius. In his *Fourth* and *Fifth* symphonies, dating from the years just after World War One, we find Nielsen striving for a synthesis of Scandinavian regionalism with the universal humanism represented by the symphonies of Beethoven. It was after he had finished his mighty *Fifth Symphony* that Nielsen wrote as a form of relaxation his lovely *Quintet for Winds*, scored for flute, oboe (who plays English horn in the first movement), clarinet, French horn and bassoon.

Jean Sibelius, the great Finn, also found his own path away from the romantic nationalist language that he cultivated so brilliantly in his first two symphonies, *Finlandia*, and such tone-poems as *The Swan of Tuonela*. The Sibelius of the Third, Fourth, Fifth, Sixth, and Seventh symphonies, of *Tapiola* and the *Oceanides* becomes an intimate poet of nature instead of a bardic patriot, and achieves therein a classic musical utterance purely his own. The String Quartet *Voces Intimae* ("Intimate Voices"), composed midway between the Third and Fourth symphonies, is an expression in terms of chamber music sonority of the composer's thoughts as nature poet and symphonist.

ABOUT THE RECORDS

1. This recording of the Grieg *C Minor Violin Sonata* is scarcely hi-fi; but it stands as a great and lasting memorial to the unique collaboration of two of the most wonderful performing artists of the era following World War One. In our opinion, this reading (recorded on 78's in the late 1920's) stands as one of the most treasurable experiences in the entire literature of recorded music. If you insist on up-to-date sound at all costs, then we can say that the Decca LP DL9571 of this work with Joseph Fuchs and Frank Sheridan is also endowed with many musical excellences, as well as good recording; and so we

can suggest this as a first-rate alternate.

2. The modern literature of chamber music for wind instruments boasts this Carl Nielsen *Quintet* as one of its most substantial masterpieces. At the time of its writing, Nielsen knew personally the players he had in mind, and many of the humorous touches in the music stem from this fact. There are three movements—a classically oriented prelude and minuet, followed by a beautiful set of variations on a Danish hymn tune which range in spirit from profound gravity to outrageously funny satire. The London recording with the Copenhagen Wind Quintet is altogether splendid; and the music provides a perfect foil to the ardent romanticism of the Grieg *Violin Sonata*.

3. This *String Quartet* by Sibelius stands alone of its kind, for though it follows the five-movement format of the late Beethoven quartets, it makes no pretenses to either the expressive profundity nor the richness of texture found in those of the great Viennese master. Neither, on the other hand, does Sibelius cultivate the melodics and color common to the nationalist-romantic quartets of Smetana, Dvořák and Grieg. Thus both the partisans of the classical and of the romantic outlook on string quartet writing may find themselves somewhat nonplussed on first hearing this music. Actually, this *Quartet* is exactly what the composer says it is—an expression of "Intimate Voices", with the composer thinking out loud to himself amid his beloved Finnish lakes and forests, and giving voices to his thoughts in terms of the logic dictated by the sonority and melodic textures of four stringed instruments. The Griller Quartet, one of England's best, is endowed with a fine understanding of Sibelius's now lyrical, now laconic musical language—an excellent recording throughout.

HI-FI RECORDS for a MUSIC-at-HOME CONCERT of

REVIEWER'S SELECTIONS

22nd Concert, 1954 Series

By BEN DEUTSCHMAN

TO BE HEARD AT HOME

1. **Harald Saeverud**—Sinfonia Dolorosa, Op. 19, Galdreslatten, Op. 20, Rondo Amoroso, Op. 14, No. 7—Oslo Philharmonic Orchestra
MERCURY MG 10149
2. **Rameau**—La Joyeuse; **Martini**—Gavotte; **Dandrieu**—Play of the Winds; **Mendelssohn**—Spinning Wheel; **Mendelssohn**—On Wings of Song; **Granados**—Spanish Dance No. 5; **Debussy**—Clair de Lune; **Salzado**—Steel—played by Carlos Salzado and Lucile Lawrence
Mercury MG 10144
3. L'Anthologie Sonore, Vol. 1, Gregorian Chant 9th to the 13th Century
Haydn Society AS-1
4. **Jannaquin**—Ce Moy de May; **Lassus**—Soyons Joyeux; **Pilkington**—Rest, Sweet Nymphs; **Morley**—April Is in My Mistress Face; **Palestrina**—Sicut Cervus; **Dowland**—Weep You No More Sad Fountains; **Ravel**—Trois Beaux Oiseaux du Paradis—The Hufstader Singers
Cook 1092
5. **Richard Ellsasser**—Icarus; **Alexander Russel**—St. Lawrence Sketches—Richard Ellsasser, organist
MGM E3066

INTRODUCTION

THERE is much in the field of records that cannot be classified. There are records in the field of sound and speech that make very interesting listening. There is music of the early composers as well as some of contemporary compositions that would become favorites of many people if they gave the records adequate listening time. These are the records we are going to present in this Hi-Fi Program. To bring out unusual and, in some cases, provocative sound in this program we have called upon people like harpist Carlos Salzado, Richard Ellsasser, composer and organist, the Robert Hufstader Choral, and the Oslo Philharmonic Orchestra. We are going to present music that ranges from Gregorian Chants of the 13th century to Composer Harald Saeverud's music of the 1930's.

ABOUT THE RECORDS

1. We start our program of the unusual with band three of the record. This is intentional and is done to open with music of extraordinary dramatic power and lyrical beauty. Saeverud wrote this impassioned musical elegy during the Nazi occupation of Norway. The style is that of a theme that is unashamedly based on an element of deep and rich passion and variations that delve into the depths of man's feeling for his home and its enemies. Here is music that tells in music what would be unprintable in words. When we listen to this music and remember that the composer was, for the most part, self-taught in the art of music and composition, we cannot help but feel that his use of melody and harmony must have been inspired by something greater than just a human

mind. It is, rather, music of the soul.

For an encore play band one of the record. The *Rondo Amoroso* is an earlier composition of Saeverud. The composer does not use any known folk tunes, but rather seems to be writing folk tunes of his own.

Band two is a theme and variations called *Galdreslatten* which might be freely interpreted as the "Enchanter's Ballad"

2. Let's do a bit of skipping around for this part of our program. The harp has for a long time been relegated to a minor position in the orchestra and, except for celestial melodies which as yet have not been recorded, has been ignored as a solo instrument. This is not as it should be, because in the hands of real artists the instrument is capable of many moods and music that is most interesting. Carlos Salzado is such an artist and, with an assist from Lucile Lawrence, will thrill you when you hear the intricate and even robust rhythms of Granados' *Spanish Dance*. Then to change the mood, hear the melodic and harmonic beauty of Debussy's *Clair de Lune*. The rest of the record is perfect encore material.

3. Religion and music have always been handmaidens. From the Gregorian chants of the period between 800 A.D. and 1100 A.D., we hear some of the greatest music of the ancient church. It is most interesting because this was the period when church music had reached a peak of purity in form, before a new era of polyphony started. True, the later chants were an improvement in that words and music were more symmetrically balanced, but these changes caused us to all but lose the early church form. It is most interesting to note the

influence of primitive and middle eastern music in these chants, and to note by comparison the music changes that have taken place in the music of the last nine centuries.

4. Of all the sensitive subjects known to the recording craft, the human voice is the most delicate and the hardest to record. This part of the program combines the excellent musicianship of Robert Hufstader, Director of Choral Music at Julliard, and the outstanding engineering of the Cook Laboratories. For our concert we will confine ourselves to the music of the Renaissance madrigals. The beautiful ways that were used by Lassus, Palestrina, and others to mix the melodies of the different voices are brought out with exquisite delicacy. Whether the composer used a religious theme as Palestrina does in the *Sicut Cervus* or Morley's idyllic theme in *April Is in My Mistress Face*, the results are always enjoyable.

5. The pipe organ of the John Hays Hammond Museum comes to life from this record under the touch of a master of musical magic. The first number is called *Icarus* and is played by the composer. It is based on a poem by Earl Marlatt. Marlatt, former dean of Boston University School of Religion, wrote the poem around the Greek fable of Icarus, who made for himself a pair of wings fastened on with wax. The story tells of his flight from reality and the eventual loss of the wings by the heat of the sun.

Following this you will be treated to a musical Cook's Tour of the St. Lawrence. Through the writings of Alexander Russell you will travel with Richard Ellsasser to the Citadel at Quebec, up the Saguenay.

HI-FI RECORDS for a MUSIC-at-HOME CONCERT of

CHILDREN'S MUSIC

23rd Concert, 1954 Series

By BEN DEUTSCHMAN

TO BE HEARD AT HOME

1. **Don Gillis**—Alice in Orchestralia—Story by Ernest LaPrade **Rexford ROK20**
2. **Charles Saint-Saëns**—Carnival of the Animals—Boston Pops Orchestra
Vic. LM1761
3. Ballads of the American Revolution—Sung by Wallace House
Folkways FP5001
4. **Sergi Prokofieff**—Peter and the Wolf—Boston Pops Orchestra under Arthur Fiedler; story told by Alec Guinness
Vic. LM1761
5. Do This, Do That—Story by Mary Robison; sung by Rita Hertzog
Child. Rec. Guild CRG040
6. **Delibes, Chopin, Tchaikovsky, Adam**—The Little Ballerina—Leopold Stowkowski and his orchestra
Vic. LRY8000

ABOUT THE PROGRAM

OUR last program was about the way composers use music to tell you about different places in the world, and to tell stories in music. This time we are going to listen to music that was written to help you play and sing. We will also have music written about the instruments that make all the different sounds we hear in an orchestra. One of the very nicest ways to tell a story is to play music at the same time that brings out all the colors and feeling of the story. So let's get ready for our concert. Part of the time we'll just sit quietly and listen, but some of the records will ask us to get up and do things. Then we can join in having some special fun.

ABOUT THE RECORDS

1. We all remember the famous story of Alice in Wonderland. This is the story of another Alice who, like the one in Wonderland, went to sleep and woke up in a brand new place. This land was one where the instruments of the orchestra lived and talked and walked just like you and me. The funny part was that in Orchestralia, Alice found that each instrument carried a case around but instead of keeping trumpets and fiddles and drums in the cases they kept musicians in them. Old Mr. Bass Fiddle takes Alice around Orchestralia and she meets the Violins, Trumpets, Drums, Bells, Flutes and all the other instruments. They're all interesting and funny folk, and you'll be able to visit with all of them if you will just listen closely. Here we go to Orchestralia.

2. Charles Camille Saint-Saëns (*Saint-Sabn*) was a great French composer.

Much of his music was written for the organ and for church, but when we hear the *Carnival of the Animals* we find that he spent some of his time having a lot of fun, and wrote music that was meant to tell some very funny stories. On this trip to the zoo you will meet many animals, some very familiar and some very strange. All of them are interesting, however, and most of them are quite entertaining. We will not attempt to go through the whole zoo at one time, so let us visit the elephants, the tortoises and the beautiful swans. Then at some later date when you are making up one of your own programs you can visit the other animals in Mr. Saint-Saëns' zoo.

3. Whenever there is a war, many people write songs about soldiers, battles, and heroes. In 1776, when the American colonies were fighting for their independence, the boys and girls sang many songs they learned from the soldiers. One of the most famous has remained a favorite until the present time. You have sung it and heard it many times. It is called *Yankee Doodle*. This was really a British song, but the colonial soldiers made words to fit their own side. Another song that was used to tell the story of the American heroes of the sea was called *The Yankee Man of War*. As you listen to this song you will learn many of the words of the sea language used in the early U. S. Navy, and all about a great sailor named John Paul Jones.

4. In Russia they tell a story about a little boy named Peter who just didn't mind his Grandpa, and went to the meadow where little boys should not have gone. Well, as it turned out, Peter

got into quite a situation with a bird, a duck, a cat, and a great big wolf, but it all had a very happy ending. Mr. Prokofieff (*Pro-koff-eeoff*) — and be sure to put the accent on the *koff* — wrote some very wonderful music to be played while the story is told. Listen closely and you will hear how the music helps Mr. Guinness (*Gy-ness*) tell the story.

5. Well, we've had a chance to visit in Orchestralia and we have heard the songs that boys and girls sang in 1776 when the Revolutionary War was fought. Now I'm sure you would like to get up and play along to music that was written just to make you dance and sing. Here is a part of the program that will ask you to play musical games and sing along, so listen now and let's all visit with one of the jolliest people in the world, the Banjo Man.

6. Many great composers wrote music for people who wanted to tell a story in dance. This is called Ballet (*Bal-ay*) music. Mr. Tchaikovsky, who came from Russia, wrote ballet music for the story of *Sleeping Beauty*. As you listen to this music and read along in the story book that comes with this record, you will hear how beautifully Mr. Tchaikovsky uses music to tell all about the princess and her prince. In this music and the other pieces written by Chopin (*Sho-pan*), Delibes, and Adam, you will notice that ballet is a wonderful way for boys and girls to use music to tell a story. And here's a suggestion for you: Whenever you listen to music of any kind, see if you can make up a story to go along with it. It will make listening more fun, and will help you to remember the music when you hear it played again.

HI-FI RECORDS for a MUSIC-at-HOME CONCERT of

JAZZ for the COLLEGE CROWD

24th Concert, 1954 Series

By FRED REYNOLDS

TO BE HEARD AT HOME

1. College Fight Songs—Lawson-Haggart Jazz Band **Decca 5427**
2. Jazz Goes to College—Dave Brubeck Quartet **Columbia CL 566**
3. Songs from "The Glenn Miller Story"—Louis Armstrong and his All-Stars **Decca DL 5532**
4. The Pajama Game **Columbia ML 4840**
5. Inside Sauter-Finegan—Sauter-Finegan Orchestra **RCA Victor LJM 1003**
6. Lucy Ann Polk and the Dave Pell Octet **Trend TL 1008**
7. The Firehouse 5 plus 2 Goes South—Firehouse 5 Plus 2 **Good Time Jazz L-23**

JAZZ FOR COLLEGE MEN

SINCE the middle 20's, jazz has found a ready and enthusiastic reception at colleges and universities the country over. A group of Bent Eagles at the University of Indiana, of whom Hoagy Carmichael was one, booked Bix Beiderbeck and the Wolverines for dances, and it mattered a great deal. The students from Northwestern University and New Trier High School in Winnetka came nightly to cheer Benny Goodman at the Congress and Bob Crosby at the Blackhawk. Someday, when it's all going nicely, ask Dave Brubeck what the College of Pacific has meant to him. Or dig back and find out how Bunny Berigan felt about certain under-graduates at Princeton, especially "Squirrel" Ashcraft, the Washington lawyer. Ask "Doc" Evans how things are at Carleton College at Northfield, Minn. Ask Les Brown about Duke.

ABOUT THE RECORDS

1. A terrifically spirited package, and a touchdown every time! The Dixieland band that makes these college fight songs go along so wonderfully well has Bobby Haggart, bass; Yank Lawson and Billy Butterfield, trumpets; Bill Stegmeyer, clarinet; Lou Stein, piano; Jim Thorpe, tuba; Lou McGarity and Cutty Cutshall, trombones; and Cliff Leeman, drums.

2. I think that Brubeck and his little group make an enormous amount of sense — far, far more than most modern jazz outfits. They also make astonishingly fine music. Dave Brubeck, piano; Paul Desmond, alto sax; Bob Bates, bass; and Joe Dodge, drums, play together. Their jazz is a never ceasing

development of techniques and ideas, ideas that may stem from one but are immediately apparent to and expanded upon by the others. Their rapport is complete. *Balcony Rock* is a light jam session on a blues theme. *La Souk* is a monument to Desmond's imagination and is rather Casablancon in spirit. *Take the "A" Train*, *Out of Nowhere*, *The Song Is You*, *Don't Worry 'Bout Me*, and *I Want to Be Happy* are simply superb Brubeckisms.

3. Along the hi-fi road via the Armstrong route, this 10-in. LP has King Louis and his All-Stars, plus tenor tooter Bud Freeman, doing full-length productions of *Basin Street Blues*, *Orchid-Or-Ni-Ya* (to find out what song this is, pronounce it!) and *Struttin' with Some Barbecue*. *Basin Street*, anyhow, is nearly the definitive performance. Then "Satchmo" and Velma Middleton duet on *Big Butter and Egg Man*, while Margie belongs entirely to tromboning-singing Trummie Young.

4. The score of *The Pajama Game* was composed by Dick Adler and Jerry Ross, who, oddly enough, are connected in a music publishing firm with Frank Loesser, and he did "Guys and Dolls." The show stars John Raitt, who is one whale of a singer, Janis Paige, Eddie Foy, Jr., and let's elevate Miss Carol Haney to stardom simply for her brazen vocalizing of *Hernando's Hideaway* and *Steam Heat*, both of which are terrific. *The Pajama Game* was brilliantly recorded and produced by Goddard Lieberson, who is getting to be an old and valued hand at this kind of thing.

5. Here is one of the most interesting, entertaining, and, if I may say so, intelligent of the new hi-fi albums which, with excellent engineering, is really

brilliant. This Sauter-Finegan showcase is tinged with ideas from the modern classics and surrounded by the purer sounds of modern jazz, all imaginatively arranged. Happily, it makes sense. Both Bill Finegan and Ed Sauter are prone to try anything for effect, in order to achieve that musical description for which they are striving. So, as *Inside Sauter-Finegan* moves along, you'll hear such odd sounds as profane buzzing on the low strings of a harp by Mary Jane Barton, and a swinging glockenspiel by the marvelous Ralph Burns.

6. Miss Lucy Ann Polk, a splendid singer who has worked with many big name bands, is represented at last by her own album. And an admirable acoustically fine album it is too. Backed by Dave Pell's skillfully modern, cohesive octet, Lucy Ann freely swings her way through 8 delightful tunes by composer Jimmy Van Husen, including *But Beautiful*, *Swinging on a Star*, *Polka Dots and Moonbeams*, and *Aren't You Glad You're You*.

7. The first LP by the flamboyant Firehouse 5 in more than a year. Apparently, Ward Kimball and the other smoke-eaters from Walt Disney's studios felt the cruel lash of the boss's whip, and had to put work before music. At any rate, Kimball picked up an Oscar for his *Toot, Whistle, and Plunk*, cranked the siren, and got the band going again. Fidelity is full and lovely, while the album notes by Walt "Pogo" Kelly are nearly as much fun as the music. There's a cocky sound and a carefree beat to every note of *At a Georgia Camp Meeting*, *I'm Gonna Charleston Back to My Old Shack in Charleston*, *Basin Street Blues*, *Tuck Me to Sleep in My Old Kentucky Home*, *Alabama Jubilee* and *Original Dixieland One-Step*.

Designed to Be Handsome in Appearance

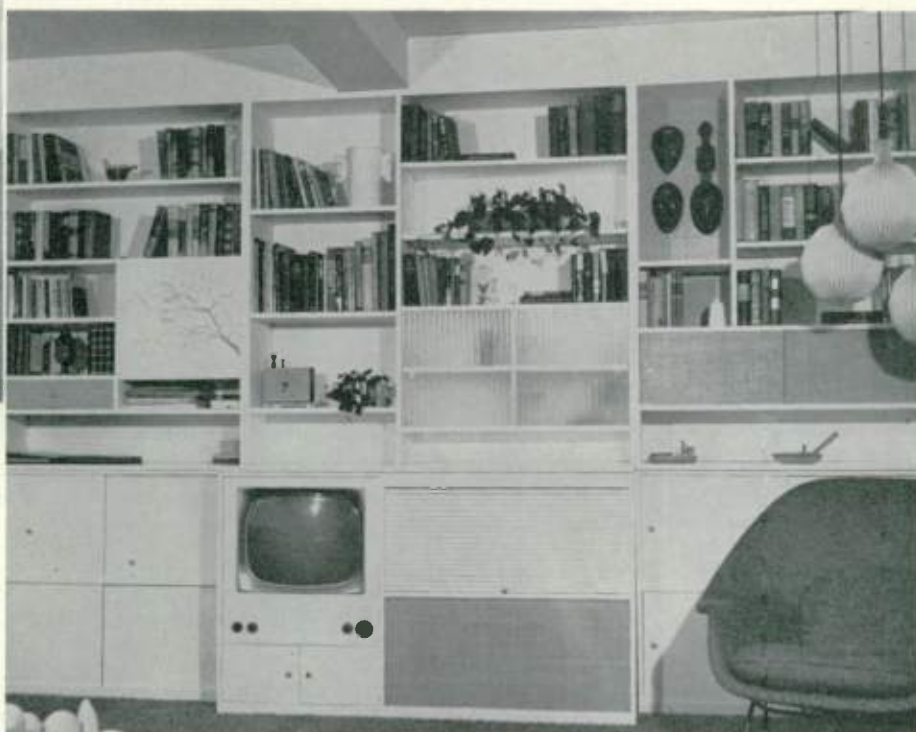


Above: Robert N. Marion, of Seattle, built this flush-wall installation in a closet. Door at left closes over the equipment, and pull-out shelf goes up to cover TV tube. Jacks at left of the TV tube are for connecting a recorder. Top section houses a bass reflex speaker; record storage at the bottom has two sliding doors



Roll-up door discloses control for 50-watt amplifier, FM-AM tuner, and drawer for record changer, with speaker below

Below: a storage wall installation designed by George Orban for M. Alden Porter's apartment at Peter Cooper Village, New York City. Audio units are at the right of the TV tube, with all electrical outlets behind two small doors beneath. Records are stored behind sliding doors at left and right. Coaxial speaker is mounted behind pandanus cloth grille under the audio section. Woodwork is painted white to match the walls. See detail below



Many readers have inquired about the installation shown on the front cover of the July-August issue. Here is a detailed view. Simplicity of arrangement is its special virtue



and Fine in Performance



Below: in the home of Mrs. Lois Place at Birmingham, Mich., McCallum & Dean carried out the decor of this pine-paneled living room by mounting the equipment behind louvered doors. The speaker occupies the space enclosed by the three closed doors below

Above: these two cabinets of korina wood were custom-built for Roy Mumma, of Pittsburgh. The speaker is at the right. The equipment cabinet, shown at the top of the page with the doors open, contains a preamplifier and FM-AM tuner above, a turn-table and changer in the center sections, and a tape recorder in the drawer at the bottom left



These illustrations point up the trend to the use of separate or built-in cabinets, and storage walls to house hi-fi components. Note how the equipment is made inconspicuous when not in use, emphasizing the new idea that an audio installation can be as handsome in appearance as it is fine in the quality of entertainment it provides



This functional arrangement of shelves and counter-high cabinets is a Voice & Vision design. It combines an FM-AM tuner with a roll-out changer and an amplifier located below. Speaker is behind the grille at the right

Music Tape Reviews

By DR. HANS WOLF

THROUGHOUT the professional field of sound recording, *tape* is the magic word. It is employed universally for master recordings made from the original, live performances. Now, with the perfection of multiple tape-copying machines, tapes can be made for home use which truly mirror the audio quality of the master tapes.

Here are the latest facts: RCA Victor, Webcor, Audiosphere, Hack Swain, Folkways, Livingston, Celestial, and Tempo have come out with new tape releases, both classical and popular. Others may be announced by the time these comments appear in type.

Rumors: Columbia, Decca, Capitol, and Westminster are ready to follow. Further news: Several companies, among them RCA Victor, are ready to release binaural tapes, the sound equivalent of 3D photography.

For the last two years or more, most of the principal recording companies have been making 3 or 4-track tapes at their recording sessions. The reason is that it simplifies the mixing of individual microphones during a performance. With multiple-track tapes, the work of mixing to produce a single track can be done later, without benefit of the musicians, and done over and over, if necessary, until the desired effects are obtained exactly. Also, the multiple-track masters can be used to make binaural tapes, and very fine ones, to be sold at moderate prices for home use.

Thus it appears that we are headed toward new heights in the quality of music available for home entertainment, and further revisions in hi-fi equipment which must, of course, do justice to the tapes.

Following are reviews of the best music tapes among the first to be released through the record, hi-fi equipment, and camera stores:

Brahms, *Symphony No. 1*

Toscanini — The NBC Orchestra
7.5 speed, double track, 41¾ min.
RCA Victor Tc-8

Unquestionably the music-loving public will extend a hearty welcome to this first series of tape releases by RCA Victor. This magic medium reveals here with stunning reality of sound, instrumental color, and dynamics Toscanini's superb rendition of Brahms' *First Symphony*. And somehow, as we listen, it is as though we were hearing this beautiful work, which has been so overplayed, over-

recorded, and overdiscussed, for the first time.

Toscanini, as perhaps no other of our great conductors, is known for his authentic renditions of the great masterworks of music, and for his contempt of so-called interpretation. Nevertheless, it was Puccini who once said of the maestro: "Toscanini does not conduct a work as it is written — no — he conducts it the way the composer has planned it, seen it in his mind, and *not* written it down." It is obvious that Puccini wanted to point out that those unwritten laws of music which cannot be registered by musical notation are part of Toscanini's performance.

One wonders by what magic this distinguished and beloved conductor recreated each and every piece of music he touched. Is it the authentic reading?

Authenticity can only be the *basis* of a great performance, not the secret behind it. And how would we, with authenticity, explain some of Toscanini's most beautiful tempo modifications (especially in the last movement of the Brahms *Symphony*) which are dictated by the melodic line and harmonic texture, but not by written tempo indications? What is the power of Toscanini's introduction in the first movement of which a composer once said: "It comes in like God Almighty!" What is the secret of his exciting introduction of the last movement, of the beautiful horn and flute solo in it? What is the magic of his dramatic *finale* which is absolutely breath-taking? Can all these luscious treats be explained by "authenticity"?

The famous pianist Harold Bauer once said to a pupil, struggling over a passage: "When in doubt, play what's written." And later in the same piece: "Ah, but the right notes won't help you there." To explain the secret of a great conductor and his interpretation, "the right notes won't help." It has much to do with his imagination, with his capacity to recreate musical contents, with his mastery over style, drama, and form. Toscanini's music-making is not philosophical or metaphysical. It is straightforward, simple and absolute in its purest sense. It is always music for the sake of music. The form and its dramatic contents have to be fulfilled according to their own law. This Brahms *Symphony* reveals again Toscanini's powerful capacity to unfold four movements of the most dramatic contents, and at the same time make it appear as one great and beautiful entity.

The work was recorded on November 6, 1951 in Carnegie Hall, New York City. Its merits had ample previous reviews on the occasion of the release on records.

Rossini, *William Tell Overture*
Brahms, *Academic Festival Overture*
Massenet, *Under the Linden Trees*

Vittorio Gui, Conductor
Florence May Festival Orchestra

7.5 speed, full track or binaural, 26 min.
Audiosphere 705 full track, BN705 binaural

In the first selection on this tape, Maestro Gui is in his Italian element as he leads his orchestra in a brilliant performance of the *William Tell Overture*. Following the beautiful sound of the introductory cello quintet is a truly realistic thunderstorm, an idyllic Alpine duet between French horn and flute, and a stirring *stretta* introduced by brilliant trumpets and horns. Thoroughly enjoyable, Italian, with sun all over. After completion of his *William Tell*, Rossini gave up composing and retired with these words: "I have written enough in Italian, I don't want to write in French, and I cannot write in German."

Following the Italian opening, Gui becomes a "German" conductor of stature. Actually, Italy claims him as her classical conductor *par excellence* and German critics admire him for what he does with Brahms. The *Academic Festival Overture* represents the composer's thanks to the University of Breslau for having conferred on him an honorary doctorate in 1879. He called his work "a very gay medley of students' songs in the manner of Suppé." Actually, he wrote a full-size overture, both gay and serene. In that spirit Gui interprets the work.

In a concluding selection, this tape treats us to a rarely performed and almost forgotten idyllic episode called *Under the Linden Trees*, written by Massenet, the famous French composer of *Manon* and *Thais*. The selection is taken from the composer's *Alsatian Suite* (1887). It portrays the Alsatian countryside which is so rich in its resources of folk music. Gui is a superior master in conveying the appealing charm of this music. For the binaural listener, the romantic duet between solo cello and clarinet is an instrumental feast of the very first order.

Tchaikowsky, *Symphony No. 5*

Stokowski and his Symphony Orchestra
7.5 speed, double track, 47¼ min.
RCA Victor Tc-2

This recording of Tchaikowsky's *Fifth*, under Leopold Stokowski, was released previously on records and was widely and enthusiastically reviewed. Nevertheless, the new RCA tape release is a step ahead in the achievement of greater fidel-

ity. The splendid orchestral palate of this symphony, with its brilliant treatment by Stokowski, especially of the string section and its sonorous basses at end of first movement should delight every tape enthusiast. The orchestral colors are reproduced with sparkling realism, and the conductor knows how to fascinate with the broad and passionate sweep of his rendition.

Stokowski once wrote: "... a conductor must have a complete understanding of the music's emotional content ... because great music has the power of suggesting moods in us which are remote from this life, and utterly different from the outer world in which we live. The more a conductor can — through his imagination — intensely evoke these remote and subtle states of feeling, the more is he a worthy collaborator with the composer." If, in the light of these thoughts, we listen to Stokowski's dynamic interpretation of the *Fifth*, we certainly understand his concept of the symphony; though it by no means necessitates some of his "super-treatments" of certain phrases such as the echo effects of clarinets and bassoons at the end of the third movement or the unnecessary crescendo of violins and trumpet in the coda of the 4th movement.

It might be interesting to quote here from the composer's incomplete notebook which was found in the Tchaikovsky museum at Klin. Referring to the emotional content of the *Fifth*, he wrote:

"Program of the first movement of the *Symphony*: Introduction complete resignation before Fate, or, which is the same, before the inscrutable predestination of Providence.

"Allegro I. Murmurs, doubts, complaints, reproaches against xxx [3 crosses in the original] II. Shall I throw myself into the embraces of Faith???"

In a corner of the notebook leaf: "A wonderful program, if I would only carry it out."

A tape collector should treasure this release for its fullness and beauty of perfectly-balanced orchestral sound.

1ST TRACK

Debussy, *Quartet in G Minor, op. 10*

The Fine Arts Quartet: Leonard Sorkin violin, Joseph Stepansky violin, Irving Ilmer viola, George Sopkin cello.

2ND TRACK

Granados, *Lady and the Nightingale*
Ravel, *Alborado Del Grazioso*
Liszt, *Sonetto Del Petrarca*
Liszt, *Mephisto Waltz*

Robert McDowell, pianist

7.5 speed, double track, 59 min.
Webcor 2923

Erik Satie, the French composer who greatly influenced Debussy against Wagner enthusiasts of his time, once put this prophetic question before the musical public: "Might it not be a good thing if

the French could have a music of their own — if possible without sauerkraut?" A few years, later, in 1893, Debussy's poetic *Quartet op. 10* was born. It was first performed by the famous Ysaie Quartet and immediately created a sensation. With its new style, its freedom in musical texture and line, its freshness in the use of instruments, it represents a milestone in the history of chamber music. One of Debussy's letters will best describe the inspiration back of this music which made it click: "I shall always prefer something," he wrote, "where the action will be subordinated to a long and patient expression of feelings and states of mind. It seems to me that in that way music might become more human, more closely linked to life, and its powers of expression deepened and refined ... anyway, that is the only kind of music I could write."

Debussy's *Quartet* is the highlight of this tape release. It is played brilliantly and with perfect blending by a group of splendid musicians, equipped with beautifully-sounding instruments. A charming Andante from Haydn's *Quartet op. 76, No. 2* concludes the presentation of the Fine Arts Quartet.

This splendid group is now quarter-in-residence at Northwestern University, Evanston, Ill., and has regular chamber music concerts over WFMT, Chicago.

The effect of Robert McDowell's splendid and sensitive recital on the other half of the tape is diminished because the microphone must have been placed so close to the strings of the piano that a continuous pedal effect is created. Also, the coupling of a piano recital on a chamber music tape seems artistically not too desirable.

Richard Wagner, *Overtures: Tannhaeuser, Flying Dutchman*

Vittorio Gui, Conductor
Florence May Festival Orchestra

7.5 speed, full track or binaural, 24 min.
Audiosphere 702 full track, BN702 binaural

With these first tape releases of its Florence May Festival Series, Audiosphere has extended its activities into hi-fi pre-recorded tape.

These tapes are available for either binaural or monaural reproduction. The monaural tape is a full-track recording, but it can be played on full-track or half-track equipment.

Italy's grand old maestro Vittorio Gui, successor to the late Fritz Busch as musical director of the Glyndebourne Opera, leads his Florence Orchestra through the magnificent and exciting pages of Wagnerian dynamics. There is majesty and fire in Gui's rendition of the *Tannhaeuser Overture*. (Gui's timing — 13 minutes, 22 seconds — is somewhat broader than Wagner's own tempo of the *Overture*.) Note the beautiful blending of sound in the horns and woodwinds of the introduction.

The reading of the *Flying Dutchman Overture* reflects the dark and mystic powers of this dynamic opera, of which Wagner once said: "This is the start of my career as a poet. No longer am I the mere author of *libretti*. From now on, in all my theatrical works, I am poet first, becoming a musician only in the course of completing my poetry ..."

Maestro Gui shows that an Italian conductor and an Italian orchestra can play as Wagnerian a Wagner as any ensemble with teutonic traditions. Most striking is the binaural version of this tape. Instrumental colors, dynamics, and the sensation of space give the ears a rare treat of concert-hall presence. No echo chambers no artificially constructed sound distribution, could possible replace such original listening experience.

César Franck, *Chorale in A Minor* Brahms, *Blessed Are Ye Faithful Souls* César Franck, *Chorale in B Minor*

Robert Owen, organist

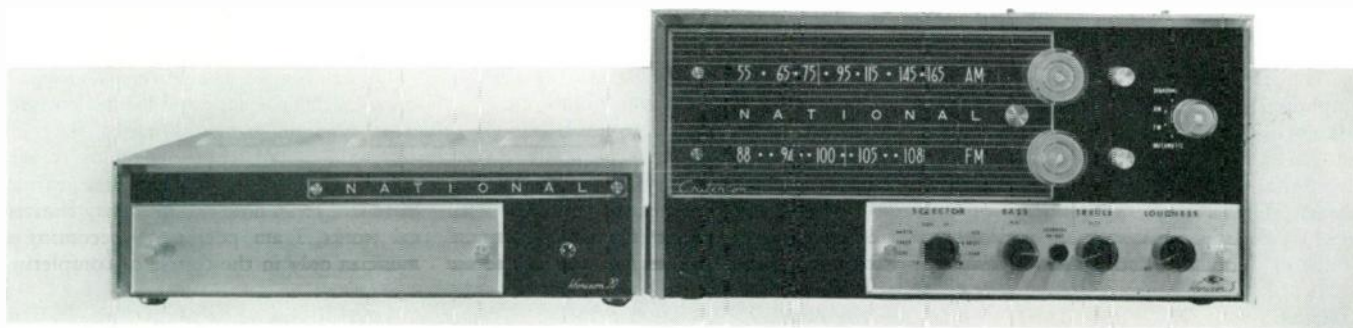
7.5 speed, double track, 28 min.
A-V Tape 609

A representative selection of organ music, played by Robert Owen with competence and dignity which unfolds the beauty of these difficult masterpieces. Good microphone placement brings out a full and rich organ sound.

The tape contains two of Franck's famous *Three Chorales* which were the composer's swan song, and belong to the best and most inspired in organ literature. The French composer Vincent d'Indy, musing over these last masterpieces, wrote: "Shortly before his death, Franck wished to drag himself once more to his organ at Sainte-Clothilde in order to write down the proper combination of stops for the three beautiful chorales which — like J. S. Bach a hundred and thirty years earlier — he left as a glorious musical testament ..."

The order in which the three selections on this tape are presented reflects much artistic taste. The recital opens with the third choral in A-minor which is more optimistic and lyric in spirit, and closes with the second choral in B minor, probably the finest of the three. Its basic mood is somber and serious, and there is a beautifully solemn ending which is given a transcendental touch by Mr. Owen's registration.

Between the two Franck chorales, there is one of Brahms' inspired chorale preludes, *Blessed Are Ye Faithful Souls*. While the Franck chorales are conceived in the variation form, Brahms' organ preludes present the chorale as *cantus firmus* to which florid melodies are added in rich counterpointal style. The emotional contents, however, is romantic and thoroughly Brahmsian. The eleven preludes were written in memory of Clara Schumann's death. This excellent tape might be called: "Swan Songs of Great Masters."



INSIDE THE CABINETS

Inside Information About a New Tuner, Preamplifier, and 20-Watt Amplifier

IF you are the sort of person who likes to see just how hi-fi equipment is built before you decide to buy it, you may be dismayed to find that the new National tuner and amplifier are supplied in metal cabinets. And although the cabinets can be removed easily, dealers are understandably reluctant to open up these units for each prospective customer.

Accordingly, for the benefit of those whose curiosity might otherwise go unsatisfied, we had Winthrop Morton, one of New York's top machinery photographers, take the pictures presented here of the National tuner, preamp, and 20-watt amplifier. As you will see, a lot of machinery is hidden by the very plain exterior of the cabinets. There are actually provisions for doing everything that such units might be asked to do, other than standing on one leg and saying Uncle, all put together in a manner strongly suggestive of military design practice.

The top of the tuner, Fig. 1, is quite conventional in appearance, with the

usual array of tubes and shielded transformers, and the AM tuning condenser at the left. However, as you will see in Fig. 2, the under side of the chassis is not at all what you would expect. Instead of the usual wiring, connections between the components have been reduced to printed circuits. This, by the way, is probably the largest and most complicated printed-circuit panel ever produced, but it has the important advantage of eliminating the uncertainties of separate wires and individually-soldered joints. At the right is the 4-section FM tuning condenser and, at the left, the shield under the plug-in preamp. The round and rectangular openings provide access to adjust-

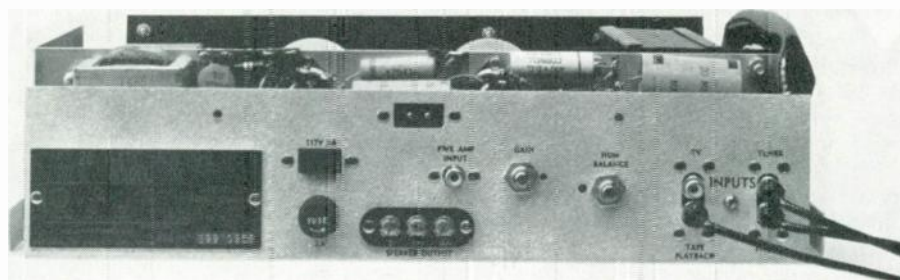
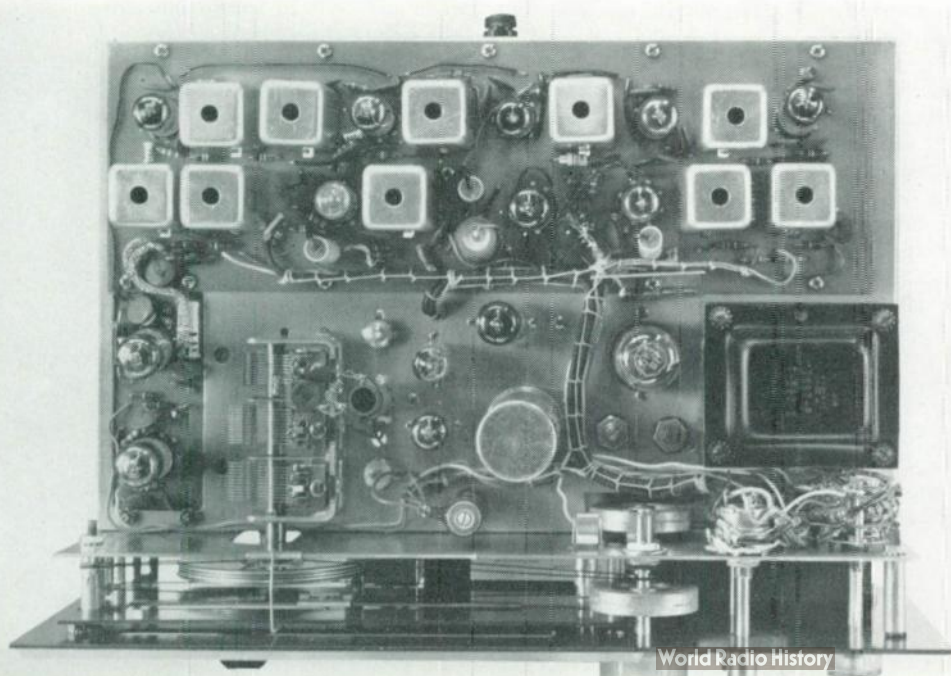


Fig. 5. Rear amplifier connections provide for tuner, TV, phono, and tape playback. There are also gain and hum controls

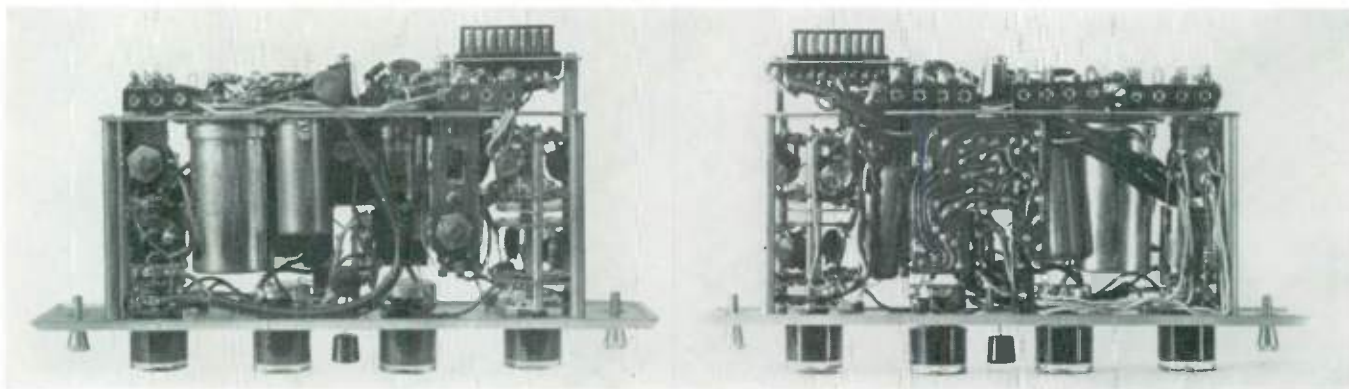
Fig. 1. Top of FM-AM chassis. AM tuning condenser is at left



ments which will be explained later.

Because the FM and AM circuits can be tuned separately, and have separate outputs, controlled from the front panel, this tuner can be used for FM-AM binaural reception. In addition, there is an FM output connection for a multiplex adapter, provided against the start of FM binaural transmission as described in this issue of *MUSIC AT HOME*.

Figs. 3 and 4 are bottom and top views of the preamp, with the insulating cover removed. At the top is an 8-contact plug by means of which the neces-



Figs. 3, 4. Bottom and top of pre-amp. Note small printed circuit

Fig. 6. Under side of amplifier

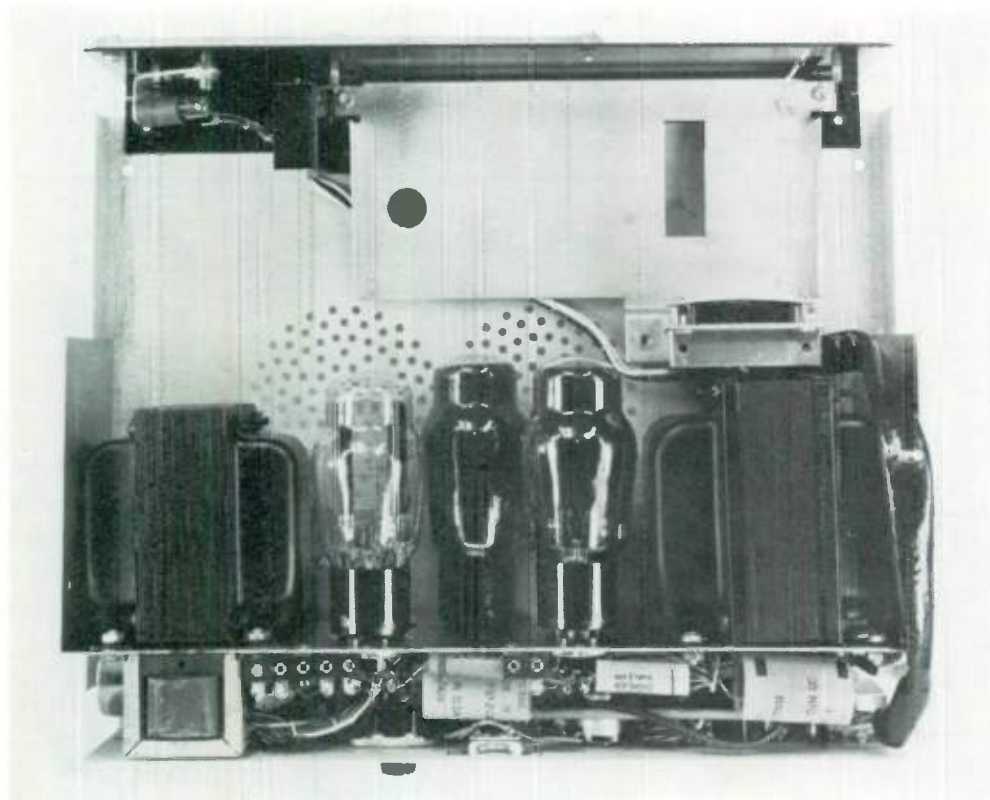


Fig. 2. Tubes and transformers are connected by printed-circuit wiring, shown in this view under the tuner chassis

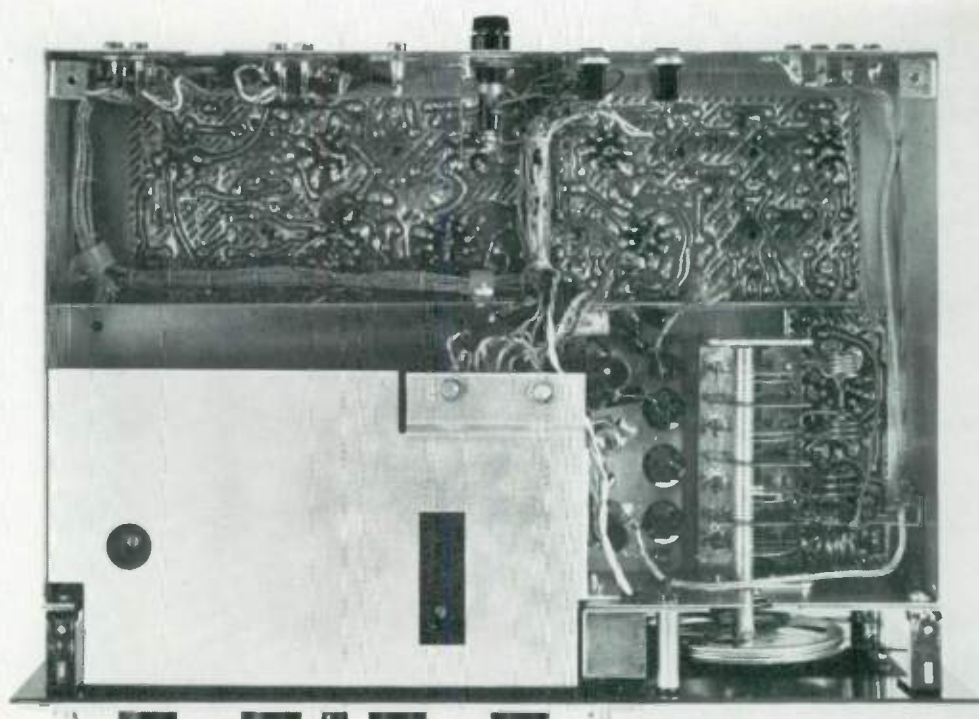
sary connections are made when the preamp is inserted in the amplifier or tuner, or in a separate case of its own. In the front view of the tuner and amplifier, the preamp is used in the tuner, while the space provided for it in the amplifier is covered with a metal plate.

At the bottom of the preamp there are two controls and a switch which, once set, need no further attention. One controls the maximum input from the audio channel of a TV set. The other limits the input from a tape recorder. Once these have

been set, volume from either source can be controlled from the front panel. The switch is set for either 10 or 35 millivolts from the phonograph pick-up. The separate case for the preamp has terminals across the rear. Connecting cables of 3 or 15 ft. are supplied, all made up with plugs.

You will see from the rear and bottom views of the 20-watt amplifier, Figs. 5 and 6, that this unit is of conventional design, except for the space provided for slipping in the preamp.

Altogether, this equipment makes up a complete audio control center.



How to Get Better Tone Quality from PRE-RECORDED TAPES

THE MAGNETIC HEADS in a tape machine correspond to the pickup and stylus of a record player. People take it for granted that the pickup is a delicate mechanism, and handle it accordingly. And so much has been published about the wear of various styli and the loss of audio quality therefrom that it's generally understood that they require regular inspection and replacement. Most people are even careful to keep the dust brushed off that accumulates on the tip of the stylus.

Mechanically, tape heads are very different. If you examine them, they appear to be solid chunks of metal. The faces are just highly polished surfaces, and the vertical slot, corresponding to the space between the legs of a horseshoe magnet, is so narrow you can hardly see it.¹ So most people take it for granted that tape heads have nothing to wear out, nothing to adjust, or to require service.

Heads Do Wear Out

Although it does not seem to be recognized generally, tape has a slight but definitely abrasive surface. Consequently,

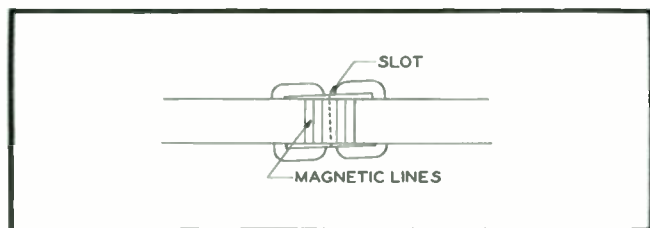


Fig. 1. The slot should be parallel to the magnetic lines on the tape

if the tension on the tape is excessive, the heads may wear sufficiently to require replacement after 1,000 hours of use. Extra wear is caused during fast rewind if the machine does not have a mechanism to draw the tape back from contact with the heads. The maximum life of the heads, under most favorable conditions, is about 5,000 hours.

It is necessary, therefore, in order to extend the life of the heads, to check the action of the takeup, and to make sure that it moves freely. Also, if the machine is of a design that does not draw the tape back from the heads during rewind, it is wise to keep down the rewind speed.

It may seem surprising that tape can wear down the metal heads without wearing off the magnetic coating, but that is because the head is acted upon during the full playing time of the tape, while each part of the tape is only in instantaneous contact with the head. Moreover,

¹ On good equipment, the slot on the playback head is not more than .00025 in. ($\frac{1}{4}$ mil) wide. The record head may have a slightly wider slot.

the *same* tape is not used during the time the machine is in operation.

Heads Require Cleaning

A small amount of gummy substance collects on the heads from time to time. It has the effect of spacing the tape back from the head, causing a loss of response at the higher frequencies. If the machine is used frequently, the heads should be cleaned at least once a week.

This can be done with a cotton swab dipped in alcohol or carbon tetrachloride. An even better solution for this

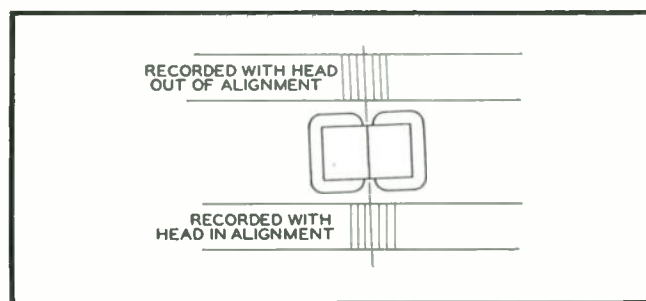


Fig. 2. Why pre-recorded tapes may sound poor on a perfect machine

purpose has been brought out by Audio Devices, Inc. It is called Audio Recording Head Cleaner. Be careful not to get any of these liquids on the rubber idlers or the capstan, because they will cause the rubber to disintegrate.

Heads Get Out of Alignment

The most common cause of poor high-frequency response is misalignment of the heads. It might seem that this should not be so, but it is, nevertheless. Considering that the slot is only .00025 in. wide, it is easy to see that, with a very slight displacement, it will extend over a relatively wide section of the tape. That may be equivalent to opening the gap to perhaps .001 in., an obvious reason for poor audio quality. This condition is illustrated in Fig. 1.

Fortunately, although realignment is a delicate job, it is simple to do. Here is the method for resetting the playback head. Alignment test tapes are available for both $7\frac{1}{2}$ and 15-ips. operation. Most test tapes produce a continuous tone of 7,500 cycles at $7\frac{1}{2}$ ips. The adjustment on the head is made while the tape is running by listening to the tone from a speaker. When the tone is loudest, the head is in adjustment. The same tape produces a 15,000-cycle note at 15 ips.

Realignment of the record head is a little more complicated. It requires the use of an oscillator set at 7,500 or 15,000 cycles, fed into the recorder, and an output meter. Then the head is adjusted until maximum output

is obtained. Or, if there is a monitoring jack for plugging in a pair of phones, the head should be adjusted for maximum audible response.

The use of a test tape is so important that it has been suggested that all $7\frac{1}{2}$ ips. music tapes be made with a leader carrying a 7,500-cycle tone. It could be cut off after it has served its initial purpose. The reason for this proposal is that complaints of poor quality from music tapes are sometimes made by people who know their machines are in perfect order because they are getting excellent results from recordings they have made themselves. Fig. 2 shows how it is possible to get excellent quality from tapes made and played back on the same machine, and with the same head, even though it is out of alignment.

In that case, the magnetized lines on the lower tape, Fig. 2, are recorded and played back at the same angle. But when a music tape, represented above in Fig. 2, made with a head exactly at right angles to the tape, is

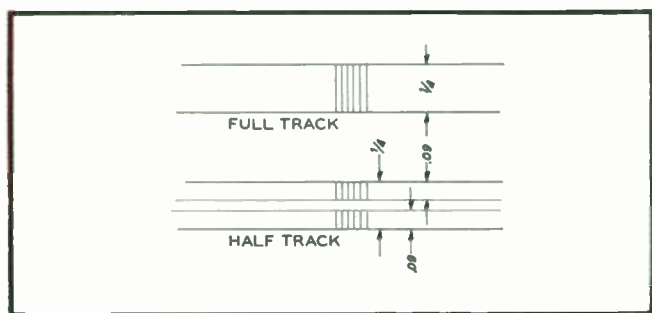


Fig. 3. The same $\frac{1}{4}$ -in. tape is used for full- and half-track recording

played back, the tone is very poor because of the actual misalignment. This would not apply, of course, to machines with separate record and playback heads.

In general, since music tapes are made under such carefully controlled conditions on precision equipment, if they do not sound right, it can be assumed that the fault lies in the playback machine, and not in the tape.

Other Points Requiring Attention

Most home recorder models have a pressure pad to hold the tape against the heads. Sometimes the pad becomes loose, and falls off. When this happens, the tone quality may go all to pieces, or only the highs may be affected. This part of the mechanism should be checked from time to time.

It is important that all the parts of the machine work smoothly and freely. A tendency to run hard or bind is sure to show up in slight changes in tape speed, causing wows. If, therefore, the machine is used regularly, all the moving parts should be oiled once a month. Or if it has been put away for some period of time, it should be oiled before it is used again.

That does not mean squirting oil here and there from a can. No, indeed! The best way is to put one drop of light oil on a toothpick, with the point of the toothpick resting on the part to be oiled. Thus, only a part of the drop will be applied. Be very careful to wipe off any excess

oil, and make sure that it does not get on any friction drive, or on any rubber parts.

External Audio Equipment

The audio capabilities of moderately-priced portable tape machines are necessarily limited. Most of them, therefore, have facilities for connecting an external amplifier and speaker ahead of the output section built into the machine. In most cases, a preamp is not required. However, it is advisable to have treble and bass controls available so that the tape machine can be matched accurately to the characteristics of the tape.

There has not been as much difficulty from mismatch between the characteristics of recording equipment and various makes of tape machines as was anticipated. Practically all the newer machines are designed in accordance with standards set up by the Radio, Television & Electronic Manufacturers Association, and any compensation required can be achieved by the use of tone controls on the preamp or amplifier.

Thus the audio quality taken from different tape machines ahead of the output section does not vary to a great extent. Mechanically, however, and in features of

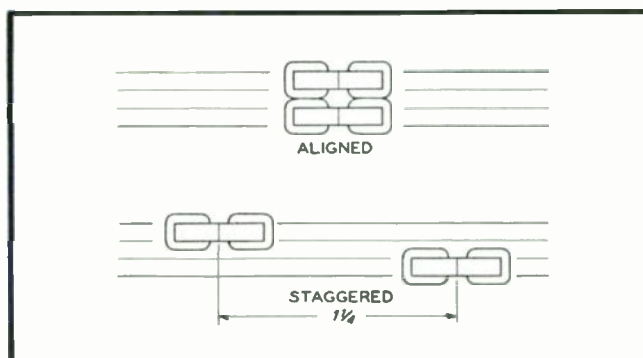


Fig. 4. Arrangement of aligned or stacked heads, and staggered heads

operating convenience, there may be considerable difference, even in the same price class.

Full-Track and Half-Track Recording

Professional-type equipment is designed for full-track recording, while home models are of half-track design. The two methods are indicated in Fig. 3. Full-track recording is employed for professional use because it permits cutting the tape for editing purposes. Also, the signal-to-noise ratio is higher when the full width of the tape is magnetized. With half-track recording, a band at one edge of the track is magnetized for a width of about .09 in. Then the tape is run through again, and a similar band is magnetized on the other edge. In that way, twice as many minutes of playing time can be recorded on a given length of tape. The fact that it cannot be cut and edited makes no difference on music tapes, and the noise level, while higher than on full-track tape, can still be kept so low that it is not ordinarily noticeable. Half-track recording is also used to provide the two channels for

Concluded on page 50



Scenes backstage at the Newport Jazz Festival. Musicians taking part in the two evening concerts represented the top jazz talent in this Country

NOTES ON THE JAZZ FESTIVAL

Success of Newport Event Exceeded All Expectations — by Dorothy Gasman

THE SHADES of old Rhode Island may have shuddered, but they didn't dampen the ardor of the jazz fans who flocked to Newport for the first Jazz Festival, held at the Casino on the 17th and 18th of last July.

Seven thousand jammed the roads, lined the streets, and filled all the restaurants and sleeping quarters for twenty miles around. They swarmed over the rambling grounds of the Casino — oldtime site of champion tennis matches — and completely overwhelmed the management whose most optimistic expectations did not exceed 5,000. But such minor inconveniences as not being able to find a seat or a place to put a folding chair had no effect on the festive atmosphere.

This occasion was no carnival, however. It was a serious attempt to give jazz recognition as our Country's distinctive and original art form in music. The program was organized, therefore, with a threefold purpose: to bring the best in jazz to a broad audience, to explain the different styles of jazz and their relationship, and also to correct some of the prevailing misconceptions as to the nature of jazz music.

To that end, the Newport Jazz Festival was organized as a non-profit corporation which will devote available funds to making this form of music better known and understood, and to assisting musicians. These details remain to be worked out. The officers are: Louis Lorillard president, George Wein vice president, Jeremiah P. Maloney treasurer, and Russell Jalbert secretary.

George Wein, as the producer, assisted by an advisory group of 31 members, had brought together the very top talent. Eddie Condon opened the first of the two evening concerts, leading a group in selections typical of the traditional jazz style. Among the performers were Bobby Hackett, Pee Wee Russell, and Milt Hinton. Lee Wiley gave her interpretations of familiar jazz tunes, after which there was a real jam session.

There was a warm reception for the fine musicianship

of the Oscar Petersen Trio; Dizzy Gillespie gave forth in his inimitable style; the Modern Jazz Quartet represented the newer groups; and the Lee Konitz Trio was followed by the Gerry Mulligan Quartet, making up a program that called forth tremendously enthusiastic and vociferous response from the audience.

Ella Fitzgerald's unscheduled appearance at the end of the Saturday night performance was wildly applauded. She had been programmed for Sunday evening, when the music was furnished by the George Shearing Quintet, Johnnie Smith, Bill Harris, the Gene Krupa Trio, the Errol Garner Trio, and performers who took part in the first concert.

From every angle, the Jazz Festival was successful to a degree that far exceeded the expectations of the sponsors, the musicians, and the audience, thus assuring its establishment as a continuing, annual event.

The plan behind the inauguration of the Festival was to create a "Tanglewood" for jazz in Newport. The American jazz audience is gaining in size and maturity. Hi-fi records are beginning to spread the enjoyment of jazz music far beyond the relatively few centers where it is being played. Now, although plans for the future are still nebulous, they include a rendezvous for professional musicians, young performers, and critics seriously concerned with jazz music.

It is to be hoped that Newporters will recognize the opportunities presented in these new plans, and that it will be possible to anticipate the need for accommodations next year when attendance at the Festival will be still larger. An enterprising Chamber of Commerce might learn from the Berkshires how to give a favorably-inclined audience a sincere welcome, and to afford opportunities for combining musical interests with an enjoyable vacation trip. The area is well-suited to such a purpose, but this year's event overtaxed the capacities of the restaurants, hotels, guest houses, and motels. A Festival Informa-

Concluded on page 63

Music at Home

STEREOPHONIC FM BROADCASTING

New Developments Based on Principles Conceived by Major Armstrong in 1930 Make Stereophonic FM Programs a Practical Reality — By William Halstead

TO THOSE who have been exposed to good stereophonic¹ sound in the theatre or in the demonstration rooms of hi-fi equipment dealers, it is probable that all previous concepts of reproduction quality have been revised drastically. Arguments between audio enthusiasts still wax hot and heavy over the relative merits of various components, but whether 3D sound equipment is operated correctly, opinions are unanimous as to the improvement it contributes to listening enjoyment and realism.

The potential development of stereophonic sound is indicated by the current practice of leading recording companies of utilizing stereophonic methods in their studios. That is, the original recordings are now being made on multiple-track tapes, then re-recorded with the multiple sound tracks mixed on single-track tape from which the master records are cut. Therefore, as the public demand for 3D tapes develops, they can be produced from the original multi-track tape masters which the companies have.

With the increasing opportunities for learning about stereophonic sound at public demonstrations, and the potential availability of tapes made by stereo techniques, it is clear that 3D sound is on the horizon for home entertainment. Indeed, it is not improbable that a major revolution in the fields of tape and radio broadcasting lies ahead, with repercussions throughout the recording and radio industries as great as those that have recently brought about major alterations in the shape of motion picture screens, and the character of the accompanying sound in theatres throughout the U. S. and many other countries.

Because of basic economic factors, and for the same reasons that radio broadcasting assumed importance on a national scale so quickly in the 20's it is possible that stereophonic sound techniques will win quick response as a natural and desirable adjunct to both musical and dramatic programs. In this connection, it should be emphasized that present transmitters and receivers can be used, merely by adding simple devices of nominal cost.

That the advent of stereophonic broadcasting is a matter of the near future can be seen from the interest with which broadcasters are following this development as a logical follow-up to the new ideas the public is gaining from 3D sound in the movie theatres.

While the use of separate FM and AM stations for stereophonic transmission has produced very interesting results, it has also indicated the limitations of the method, both with respect to the restricted audio response from AM

and its susceptibility to static and co-channel interference. And from an economic standpoint, it is not desirable to devote the program time of two transmitters (FM and AM) to a single stereophonic program.

Under a proposed amendment of the FCC rules, announced by the Commission last December, FM stations may, when the new rule has been adopted, obtain authorization to employ multiplexing methods on an unlimited time basis. Thus the door has been opened officially for this new kind of broadcasting, and it has been implemented further by plans of the record companies to make binaural tapes available. All this adds up to the possible creation of advanced forms of broadcasting with a quality and effect of realism far superior to what we have now.

It takes a long time to bring about changes in the FCC rules. The plan to authorize multiplex FM broadcasting was initiated in 1950, when a petition was filed by the Multiplex Development Corporation, following their

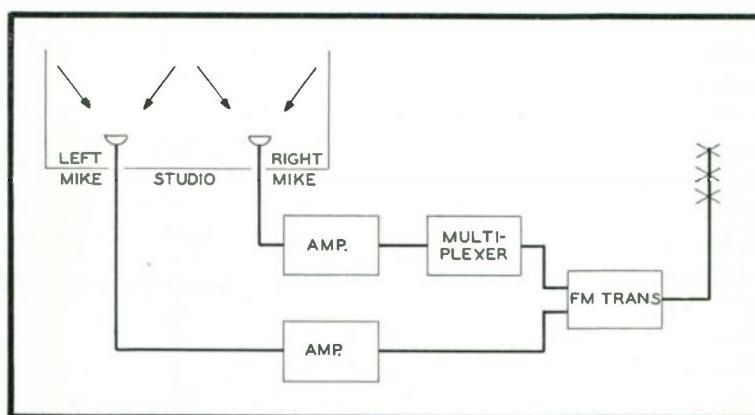


Fig. 1. Live talent or tape can be used for binaural FM broadcasting

successful field tests of "low-level" transmission methods. These tests demonstrated that one or even two *additional* channels can be transmitted by an FM station without interfering with the regular program heard by the radio audience on conventional receiving sets.

For this purpose, the company used developmental station KE2XKH, formerly WGYN, one of the early FM stations located in the Cities Service Tower, in downtown New York. Standard FM transmitting and receiving equipment was used, with multiplex adapters added for the transmission and reception of two stereophonic channels, or two totally different programs. The second channel, applied to a superaudible subcarrier and impressed piggyback on the main FM carrier, could not be heard by listeners equipped with ordinary receivers, but either or both could be heard when multicast adapters, responsive to the subcarrier, were attached to the receiving sets used in the course of the demonstrations.

¹ The term "stereophonic" is used interchangeably with "binaural" in this text to describe two-channel sound.

The audio quality of the regular broadcast channel was not impaired by the transmission of the added channel, and all standards of performance set by the FCC were maintained. In essence, two program channels were created where there was only one before, and within the frequency space in which an FM station is permitted to operate.

For a long time after the initial tests, special demonstrations were held in the New York area to convince observers from the Commission, other Government agencies, and station operators that a second high-quality program could be added to regular FM broadcasting without a trace of audible interference on any of the FM sets already in use. In September 1950, during a special three-day series of demonstrations, one of the most impressive features was the two-channel transmission of a live program by the Muriel Reed instrumental trio, when the performers moved about the studio to bring out the stereophonic effects at the receiving end. Listeners could easily follow the movements of the artists, emphasizing the presence effect provided by live-talent FM transmission, with an overall improvement in quality of reproduction that cannot be achieved with the conventional single-channel system.

In these broadcasts, the microphone at the left of the performers was associated with the main channel of the FM station, as shown in Fig. 1. A second microphone, spaced about 8 ft. to the right, was connected to a multiplex circuit having an inaudible subcarrier of 35,000 cycles. The main channel was frequency-modulated in the normal manner up to about 90% of the maximum value customarily employed for FM broadcasting. The multiplex subcarrier, frequency-modulated by a narrow-band method, was applied to the main carrier bringing the total modulation up to 100%.

At the receiving end, a standard receiver with a multiplex adapter, Fig. 2, connected to the discriminator was employed to operate the two loudspeakers.

Although it is not generally realized, the broad principles of FM multiplex operation were worked out by the late Major Armstrong in the early 30's. That was long before the present rules for FM broadcasting were adopted, but no consideration was given to the eventual perfection and use of multiplexing. During the last two years of Major Armstrong's life, this became one of his most active interests. In December 1953, he and John Bose, his research associate of many years, gave a most successful demonstration before the Radio Club of America of the high-quality performance they had attained from equipment developed at their Columbia University laboratory. On that occasion, they ran tapes made at a receiving point on Long Island about 50 miles from New York City. The audience was greatly impressed by the fact that the quality of reception from each of the FM channels transmitted simultaneously from the same station was much superior to reception from a 50-kilowatt AM station in New York.

With all this technical progress now an established fact, and with much of the best recorded music available on

binaural tapes, it should not be long before stereophonic programs are transmitted over most FM stations. When that time comes, people with conventional FM receivers will still have program service, since their sets will always work on the main channel of each station. But those who add an adapter and an extra amplifier and speaker will have stereophonic reproduction. In other words, stereophonic transmission is completely compatible with all existing monaural receivers.

Most of the basic steps in the progress of the radio art have created hen-or-egg problems of one kind or another. Right now, a comparison might be drawn between stereophonic broadcasting and color TV. In the latter case, sponsors do not want to pay higher rates for TV color programs until a large number of people have bought sets on which they can see color. But color sets are so expensive that they are hardly worth buying when so little color transmission is on the air. Meanwhile, the sets can't be brought down in price until they can be sold in very large numbers. This situation will not stop color, however, because it represents an important improvement that will add to the enjoyment of television.

The problems involved in stereophonic broadcasting, although similar, are very much easier of solution. Using two channel tapes, this method costs no more than monaural transmission. The added equipment required at the transmitter is very inexpensive. Thus there need be no increase in rates for sponsors to pay.

To FM broadcasters, stereophonic programming is important because it means that they can offer an added service which cannot be duplicated over AM. At the same time, FM-AM stations can use one track of a binaural tape to feed the AM transmitter, while both are fed to the FM transmitter. No complications will be introduced at the

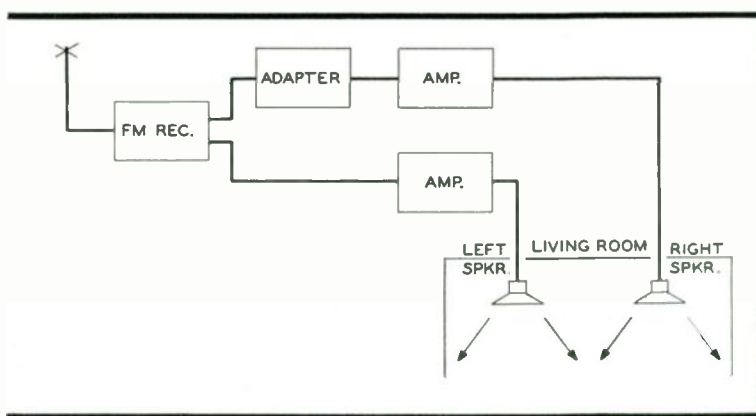
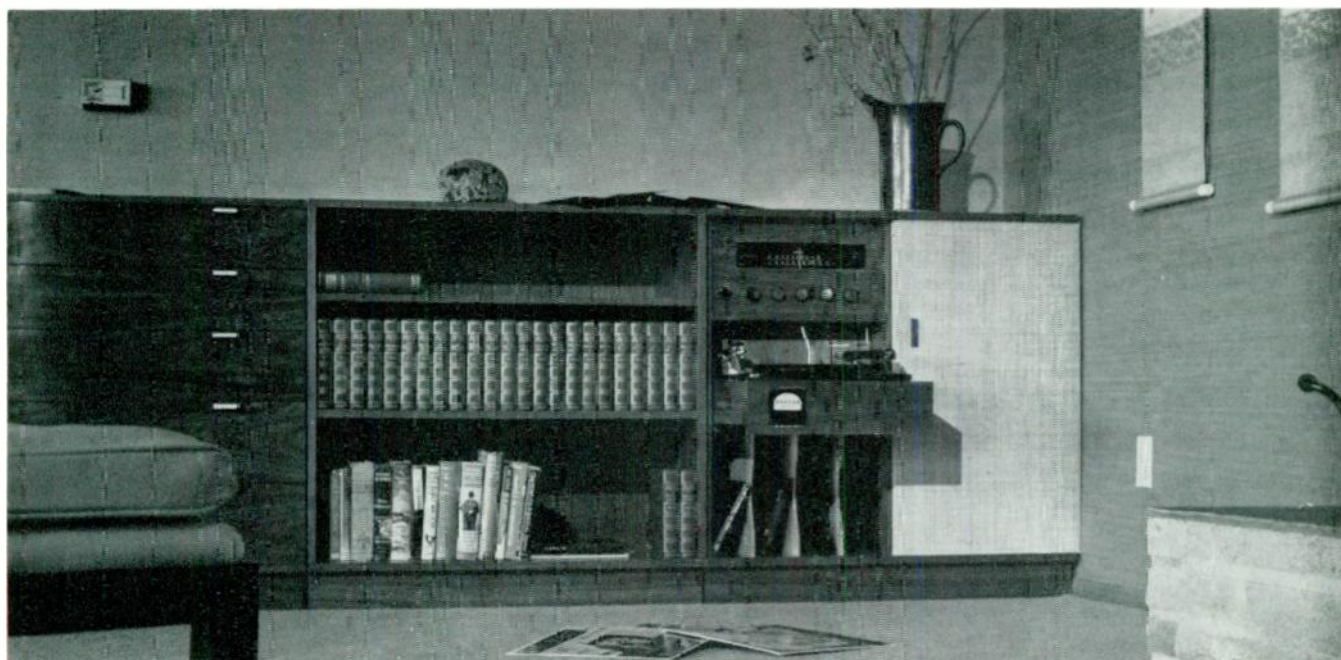


Fig. 2. An inexpensive adapter will make any FM set a binaural receiver

receiving end, for the cost of adding the adapter unit will be less than the price of a low-power audio amplifier, and it can be connected in five minutes!

Probably the first broadcasting will be done in connection with public demonstrations staged by dealers as soon as they have the adapters in stock, and can make immediate deliveries. That's the way it will start, and from that point it will spread rapidly because stereophonic FM provides so much added musical enjoyment at so little extra cost.



Only 3 ins. square, an elapsed-time meter is easy to mount. Here one has been added to a radio-phonograph designed by Robert N. Marion of Seattle

HOW TO TIME YOUR STYLUS

Elapsed-Time Meter Shows Exact Age of Your Stylus in Hours

WHEREVER hi-fi enthusiasts gather, the subject of stylus wear is bound to come up, but it's seldom that any conclusions are reached because very few people have even rough estimates as to the age of their styli in number of hours of use. Most of us have decided, at one time or another, to keep an accurate record of playing time from day to day. The trouble is that it is so difficult to keep a stop watch on music and to enjoy listening to it at the same time!

Very soon, we reach that state of remembering we forgot to enter the playing time last night, and then last week, until it suddenly dawns on us that we have forgotten all about intending to remember. So at that point we give up the idea entirely.

If that has happened to you, you'll be interested in this simple method of timing your stylus precisely and automatically: just connect an elapsed-time meter to your changer or turntable.

This type of meter has a precision electric clock motor which drives a counter. The counter registers the number of hours the motor runs. On the scale of the meter illustrated here, the right hand figure, in red, shows tenths of an hour. The counter will run up to 99,999.9 hours if you use your phonograph that much.

Elapsed-time meters were probably used first by broadcasters to count the number of hours their transmitters are on the air, and to determine the life of expensive, high-power tubes. When the current is on, the counter starts, and runs until the equipment is switched off.

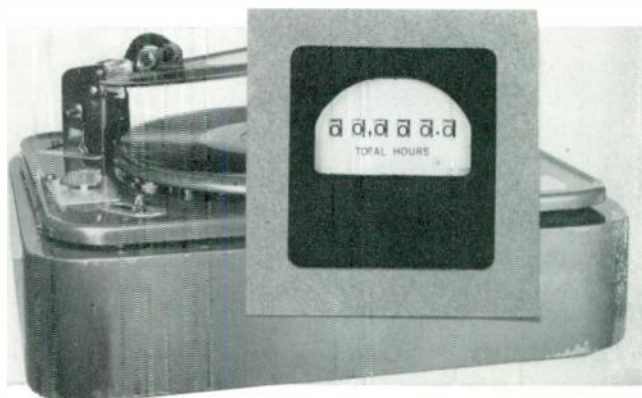
Since you put your stylus on the record as soon as you start the motor, an elapsed-time meter connected to the

motor circuit will automatically count the number of hours the stylus is in use.

The connections are simple. Wire the meter across the terminals of the motor. When the current is turned on, it will be applied to the meter as well as the motor, and when it is cut off, both will stop. That's all there is to it. The time the turntable runs when the stylus is not in place is so short that no appreciable error is introduced.

You can get exact information on the hours of use from different styli if you wish. Or if you have a diamond, the meter will tell you when it has been used for 500 hours, and that it is time to start having it checked regularly.

Meanwhile when you get into a discussion on stylus wear, you can speak with authority, because your meter will supply you with exact information.



This elapsed-time meter adds up the hours of stylus use automatically

AN FM SET FOR AUTOMOBILES

Now You Can Have Reception in Your Car without Fading and Interference



Dash-mounted FM broadcast tuner for automobiles

THE RECENT introduction of FM broadcast receivers for use in automobiles brings up some very interesting points in the history of FM which are not known to most radio listeners.

Just 15 years ago, Prof. Daniel E. Noble was commissioned by the Connecticut State Police Department to investigate the possibility of providing a state-wide, two-way radio system, using the Armstrong FM method of transmission and reception. After an exhaustive study, Prof. Noble reported that such a system was entirely feasible and, on the strength of his recommendations, an order for ten 250-watt FM stations and equipment for 225 automobiles, amounting to about \$120,000, was placed with F. M. Link. Discussing this system, the late Commissioner Hickey said that "existing AM equipment could not by any stretch of the imagination provide two-way service over the state-wide area", and Sydney Warner, then State Radio Supervisor, reported that "the results obtained using FM were far superior to anything heretofore accomplished with AM". That was the beginning of FM reception in automobiles!

Not long after, Paul A. deMars, then vice president in charge of engineering for the Yankee Network, made what was probably the first installation of an FM broadcast receiver in an automobile. He had designed and engineered the FM transmitters at Paxton and Mt. Washington, and wanted to check the receiving range in various parts of New England.

Although the installation was a rather crude affair, consisting of a G.E. tuner and an amplifier rigged up for operation from the car battery, with a rod on the back

bumper for an antenna, the quality of reception was truly remarkable. It was possible, for example, to drive from Boston to Manchester, N. H., a distance of nearly 50 miles, and hold the Paxton station all the way, without the slightest static or interference noise, or ever losing the program for an instant!

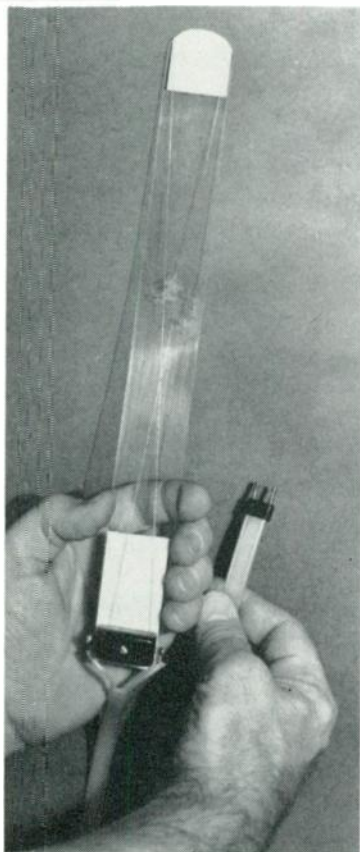
The first FM broadcast receiver designed specifically for car operation was built in 1941 by REL, for use by executives of the *Milwaukee Journal* station. They used it to demonstrate the great range of their FM transmitter. There is no telling what might have been done with FM auto sets at that time, for the war stopped all civilian

radio activities. However, the manufacture of FM equipment for police cars was continued because of military necessity and, in the years following, FM proved so successful that now, in all the different mobile services, there are over 300,000 cars and trucks with FM receivers and transmitters for two-way communication.

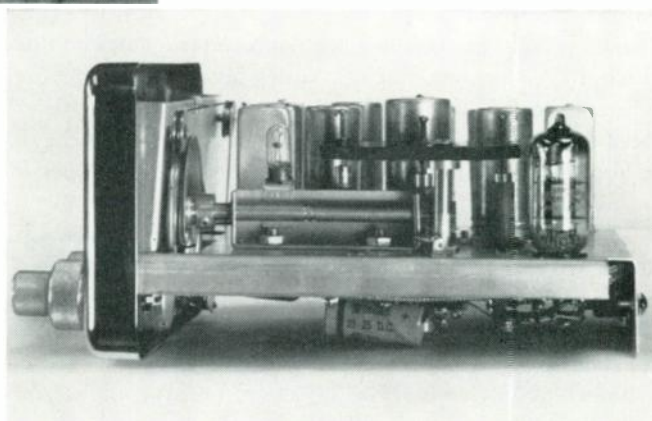
After the war, one of the largest manufacturers of auto sets for broadcast reception undertook the development of an FM model. Surprisingly, the outcome of this project was a report by the chief engineer that FM car reception was neither satisfactory nor practical, and the idea was abandoned. How that conclusion was reached is not clear, unless the work was done with a type of circuit that lacked the necessary sensitivity and noise-limiting action.

That is where matters stood until T. Mitchell Hastings, Jr. undertook the development of an FM auto set for broadcast reception comparable in per-

concluded on page 67



FM windshield antenna, and the tuner chassis





We'll sell many customers
through its rich sound...
the "artistic" performance
of this entirely new recording tape!
Just listen and compare to appreciate
its freedom from distortion and noise...
its balanced high and low frequency response...
its unvarying output from reel to reel...



Many others will buy it
for its scientific engineering
and material quality...literally every
inch precision tested and laboratory bonded
for uniformity, optimum sensitivity,
and adherence of oxide coating...
your continuous satisfaction guaranteed
through maximum tensile strength,
shelf-life and splice-ability.



Still others will insist upon it
for convenience and value built-in
above and beyond its superior
audio performance. Every reel comes
to you in a resealable polyphane
plastic bag, with spliced color-coded
leader for extra cue time,
and 5 full inches of Tuck splicing tape...
all these extra features at no extra cost!



...and this
extra performance
and extra value
will make new

Encore

the household word in recording tapes

(Encore means more in recorded results time after time...Just try it!)

Developed and manufactured by the Electromagnetic Products Division TECHNICAL TAPE CORP., Morris Heights, N. Y. 53, N. Y.

September-October 1954

49

Better Results from Pre-Recorded Tapes

Continued from page 43

binaural tapes, and the dimensions are the same as illustrated in Fig. 3.

Definition of Binaural Systems

There seems to be considerable misunderstanding as to what is, and what is not, *binaural* reproduction. This confusion may have been caused by advertising of factory-built phonographs which contain two or three speakers, facing in different directions. These instruments are intended for playing standard records, and are equipped with only a single pickup and a single amplifier which operates all the speakers. Any claim or implication that such instruments provide *binaural* reproduction is completely false and misleading. That is because:

Binaural listening implies the use of two ears, by which we identify the directions from which sounds originate. When music or sounds are recorded at the studio for reproduction via records, tapes, or radio, two microphones do the "listening" — one at the right, and one at the left — to produce separate, independent sound channels. On records, two sets of grooves are cut, one inside the other, requiring the use of two pickups. On tapes, two tracks are recorded side-by-side, requiring the use of two heads. For radio, there are also two channels, one carried by an AM transmitter and the other by an FM transmitter. Thus, two separate receivers are required. (With multiplexed FM, two channels are transmitted by one FM station. A single receiver is used, with a special auxiliary circuit that separates the two channels.)

Then the pickups, playback heads, or radio channels are fed to separate amplifiers, each with its own speaker arranged in left and right locations. In this way, what is picked up by the left hand microphone at the studio is reproduced in the home by the left hand speaker, and what is picked up by the right hand microphone is reproduced by the right hand speaker. If someone singing at the left in the studio is answered by someone at the right, that same sense of sound origin is created by a binaural audio system.

No instrument that has a single amplifier driving two or more speakers *can* provide the binaural sense-of-direction effect. Only systems that employ separate audio channels, reproduced through independent amplifiers and speakers, can be said to furnish *binaural* reproduction.

Pre-Recorded Binaural Tapes

The availability of binaural music tape is at last making it worth while to install binaural audio systems. This requires, of course, the use of a special playback machine, equipped with a head for each track on the tape. The heads may be staggered or in line, as shown in Fig. 4. It might seem easier to have the heads in line but, because of manufacturing problems, they have not come into general use. Eventually, one or the other method must be adopted as an industry standard.

The spacing between the slots of the two heads employed by Magnecord and Audiosphere is $1\frac{1}{4}$ in. Theoretically, at least, it would seem that it would be necessary to keep that spacing accurate to some part of the width of the slots, but that does not prove to be so in practice. Using a laboratory type of binaural machine, with an adjustment to slide one head with respect to the other, it has been found that, at $7\frac{1}{2}$ ips., the spacing can be varied as much as $\frac{1}{8}$ in. without any audible effect other than an apparent shift in the positions of the two loudspeakers.

Because the use of aligned heads simplifies tape editing, this design will probably be adopted as standard when machines so equipped are available at moderate cost. Meanwhile tapes are being made both ways.

Excellent reproduction can be obtained with a binaural system using 10-watt amplifiers, or one of the dual amplifier units. The peculiar characteristics of binaural reproduction are such as to give all the useable volume in a large room, up to the point of masking the two-dimensional effect, with an average output of .2 watt from each amplifier, and not more than 2 watts on the peaks!

Binaural tape machines are available for recording and playback use, or for playback only. The latter are quite inexpensive. At least one is designed to play back standard half-track music tapes as well as binaural tapes. This is a practical idea since both have two tracks on the tape. Thus one machine can serve both purposes.

Moderately priced speakers of good, simple design are adequate for binaural reproduction. It is not necessary to duplicate the expensive types of speakers used in monaural hi-fi systems, but it is important to use two identical speakers and cabinets for binaural reproduction. Otherwise, difficulty may be encountered in balancing them, and the two-dimensional effect will be destroyed.

There are no fixed rules for placing the speakers. In a rectangular living room of moderate size, it will probably be best to put the speakers at each end of a short wall, rather than at each end of a long wall. However, the optimum locations should be determined experimentally. Any irregular construction in the room, the sound-absorbing effects of an open book case, large windows, or a highly reflective wall may alter the acoustics substantially, requiring asymmetrical arrangement of the speakers. Further compensation can be obtained by adjusting the volume from each speaker until the full binaural effect is attained.

Once the best location of the speakers and the correct settings of the volume controls have been determined, the positions of the volume controls should be marked as reference points. The settings will be the same for all the tapes. If, then, the total volume is to be raised or lowered, the controls should be turned up or down the same amounts from the reference marks.

It is always difficult to describe audio performance in words. So, in the case of binaural tape reproduction, it must suffice here to say that the second dimension adds so much to the enjoyment of music that the expense and effort involved in making a binaural installation will be amply justified by the new quality of music it will provide.

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1 craftsmen



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2 craftsmen



Featuring the famous Williamson Circuit with superior KT66 Output Tubes. Full 15 watts 20 to 20,000 cps within 1/10 of 1 db. Distortion so low it can hardly be measured. Net \$99.50

3 GARRARD



The standard of excellence the world over. Plays all records, 33 1/3, 45, 78 rpm records in 7", 10" and 12" sizes. Quiet, smooth-running 4-pole motor, weighted turntable. Automatic shut-off after last record. Muting switch cuts out sound during change cycle. Net \$49.50
SPECIAL '45' SPINDLE for Garrard 'Triumph' Changer Net \$3.50

4 Electro-Voice



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Complete, Matched PHONO-RADIO SYSTEM

ALL BRAND NEW famous name components • ALL current models and production • ALL Fully Guaranteed • Supplied with ALL TUBES • Warranty Cards • Instructions • Indoor Antenna • GE Dual Sapphire Needle • ALL Cables and Plugs • Your '5-STAR' System consisting of ALL ITEMS ILLUSTRATED and DESCRIBED ABOVE . . . comes ready to plug together and play!

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Total Regular Net \$379.90



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MATCHED
COMPANION CABINETS
for '5-STAR' SYSTEM



ELECTRO-VOICE ARISTOCRAT SPEAKER CABINET WITH KLIPSCH LICENSED FOLDED HORN Companion Speaker Cabinet for the PEERAGE Equipment Console. Corner enclosure designed to match the characteristics of the Electro-Voice 12TRXB Speaker. The patented KLIPSCH principle provides a full octave of added bass without boominess and greater speaker power handling capacity. 29 1/2" high, 19" wide, 16 1/2" deep.

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Continued from page 23

With Goodman, the swing era came on like coal going down a chute, and this was true for the Country at large as well as Chicago. It was like Minnie Monoso hitting a home run in the 9th with the bases loaded to win the game by a run. The game was over, but maybe the world series was coming up. And so jazz came back to Chicago — jazz and swing. You can clamp a damper on much of this by saying that swing isn't jazz. But that isn't all true by a 50-1 shot beating Citation at a mile and a quarter. The best swing bands played a bandstand full of jazz each night, not New Orleans or Chicago jazz, but unmistakably jazz.

That toddlin' town began to bubble over once again. The Dodds brothers came to a newly opened Three Deuces. Out at Grand Terrace, genial Count Basie was swinging away with a new kind of jazz that came in fresh from Kansas City with a rhythm section as solid as "South Pacific." Tommy Dorsey and his orchestra wowed 'em at the blue and gold Empire Room of the Palmer House. The college and high school kids congregated at such places as the Panther Room of the Sherman and the Beachwalk of the Edgewater Beach Hotel. They danced to the kind of music they liked the most, and that kind of music was swing.

After a most successful romp with Kay Kyser and his "College of Musical Knowledge" at the Blackhawk, Otto "Papa" Roth booked a youthful, eager gang of New Orleans Dixielanders under the baton of Bob Crosby into his famous establishment.

The formation of the Bob Crosby band goes back to that day when Ben Pollack informed the drummer in his band, a certain Ray Bauduc, that he was playing too loud. Mr. Bauduc, barking his indignation like a sea lion, stalked off the stand,¹ and not long thereafter other sidemen in the Pollack organization followed in his footsteps. They got together under the guidance of that old warhorse, Gil Rodin, and these men decided to form a dance band of their own. But a leader was necessary. After a thoughtful survey of the field, Bob Crosby was asked if he would take over. He would and did. The choice was a wise one from every angle. Bob already had a name in the entertainment business, made from his singing with the famed Dorsey Brothers orchestra. He had a warm personality coupled with a definite knowledge of showmanship. He loved Dixieland music. He was Bing Crosby's brother.

The Crosby band didn't make it right

¹ Editor's Note: It appears that they had planned to leave to form their own band, and this was an excuse for starting. However, because they were on good terms with Ben Pollack, they left one at a time, so that he could find replacements, without disrupting his band.

FRED REYNOLD'S LIST OF BASIC JAZZ RECORDS

HERE is an extremely select listing of LP recordings which represent the high spots, as I see them, of jazz in Chicago. All the LP's are available. However, it should be made clear that re-issues, especially those from pre-1934, can never, never compare in sound to the modern hi-fi recording. Good work has been done with the old records to improve their quality, and in all cases the quality of the LP's is better than the original masters. Still, the value of the older recordings is chiefly historical. They do not listen easily or gracefully. You must take them as they are, for in their present form they are as good as they're ever going to be.

One other thing. The LP's listed represent an investment of about \$100.00. Because old jazz records are being re-issued today at an amazing rate, you can go on from here to make a truly fine collection around the whole jazz picture. You should purchase with extreme care. It might be best, first of all, to read several books on the jazz scene. "Jazzman" by Frederic Ramsey, Jr. and Charles Edward Smith (Harcourt, Brace and Company) is a very good one. Also, I recommend a discography such as Charles Delaney's "New Hot Discography" (Criterion).

Some of the re-issued albums have tall tales on the back covers, designed to impress you with the importance of the works contained therein when, in reality, the jazz is unimportant and poor. Collecting records must be a personal pleasure. Even with "A History of Jazz" you can collect largely what you enjoy, only excepting the fact that you must learn to enjoy certain great records about which all jazz critics and musicians agree. I've starred certain albums that I believe are absolutely essential to any jazz collection. Each represents a definitive style and expression.

- Louis Armstrong**—The Louis Armstrong Story, Vol. 1 and 2 Col. **ML54383 & 54384** *
Town Hall Concert Vic. **LPT7**
- Count Basie**—Count Basie and His Orchestra Decca **DL8049**
Performances Vic. **LPT22**
- Sidney Bechet**—Treasury of Immortal Performances Vic. **LPT22**
- Bix Beiderbecke**—The Bix Beiderbecke Story, Vol. 2 Col. **GL508** *
- Eddie Condon**—Eddie Condon's Hot Shots "X" **LX3005**
- Bob Crosby**—Swinging at the Sugar Bowl Coral **CRL56000**
Dixieland Jazz Coral **CRL56003**
Bob Crosby's Bob Cats (to be released soon) Decca—*
- Johnny Dodds**—King of New Orleans Clarinets Bruns. **BL58011**
- Bud Freeman**—Jazz from Austin High School Col. **CL6107**
- Benny Goodman**—Chicago Jazz Classics Bruns. **BL58015**
1937-38 Jazz Concert, Vol. 2 Col. **SL180** *
- Art Hodes**—Chicago Rhythm Kings Riv. **RLP1012**
- Ted Lewis**—Classic Jazz Col. **CL6127**
- Jelly Roll Morton**—Kings of Jazz Riv. **RLP1027**
Red Hot Peppers "X" **LX3008** *
- New Orleans Rhythm Kings**—New Orleans Rhythm Kings Riv. **RLP1024** *
- Jimmy Noone**—Dean of Modern Hot Clarinetists Bruns. **BL58006**
- Joseph "King" Oliver**—Louis Armstrong with King Oliver's Jazz Band Riv. **RLP1029** *
- Bill Reinhardt**—Jazz at Jazz, Ltd. Atl. **ALS139**
- Francis "Muggsy" Spanier**—Muggsy Spanier Favorites, Vol. 1 and 2 Vic. **LPM3043** * & **LPT1000** *
Muggsy Spanier and His Bucktown Five Riv. **RLP1035**
- Frank Teschemacher**—Chicago Style Clarinet Bruns. **BL58017** *
- Collections**—The Chicagoans Riv. **RLP1004**
Chicago Jazz Decca **DL8029**
New Orleans Horn Riv. **RLP1002**

away. But it didn't take long. There were many factors that led the Crosby band to the heights. One of them was that marvelous strutting opus composed by Bob Haggart and Ray Bauduc, *The South Rampart Street Parade*. Another was that the time was right for a band of this type, a big band built on the solid foundations of the jazz music that had rocked New Orleans and Chicago for years. The Crosbyites had enthusiasm and they liked what they were doing. It was a happy band and a fine band. It was the best big Dixieland band ever assembled!

It all began to jell when the band was signed by Decca Records. It came to a head when the band was booked into the Blackhawk and started broadcasting on WGN. And you know the rest from the records you've heard.

Down Randolph Street at the Sherman another experiment was going on, one that led to glorious failure. In 1939 Muggsy Spanier opened with his Ragtime band, all 8 pieces of it. For a while they did fine, very fine indeed. But you can't stay at one place forever, and the Ragtimers moved on. To New York, where they broke their backs and Muggsy's health, not because the band wasn't good, but because it was too small. In between they made eight records for RCA Victor that will live forever. The Ragtimers played superb Dixieland.

The war was on in Europe, Pearl Harbor was just around the Pacific, we were up to our destroyers in lend-lease, and once again the trend was on to bigger, bigger, bigger. However, the town was still dancing, even though many of the swing bands had added huge sections of strings. In one season, just going around Chicago, you could dance to the orchestras of Bob Crosby, Dick Jurgens, Lawrence Welk, Ted Fio Rito, Tommy Dorsey, Orrin Tucker, Ray Noble, Woody Herman, Harry James, Jack Teagarden, Les Brown, Ted Weems, Claude Thornhill, Jan Savitt, Jimmy Lunceford, Artie Shaw, and so forth and so on.

Musicians, despite argument to the contrary, are people, and once we were in the shooting war, most of them were in it too. And when they got out, the magic touch was gone. Probably never again will dance bands have the tremendous, universal appeal that they did between 1935 and 1942. For the singers had taken over, and they weren't about to give it back to the bandleaders. Like everything else, the cost of holding a band together had gone up and up and up. The government had imposed a stiff tax on entertainment. The kids forgot how to dance. The lucrative, steady work was elsewhere, in radio, records, TV, and motion pictures, and many of the best sidemen attacked those fields. On radio, it was one disc-jockey after another, and for every disc-jockey show during the night it was so much less time for remote broadcasting by

Continued on page 54

BETTER SERVICE for G.A. CUSTOMERS

News Items of Importance to Hi-Fi Enthusiasts

OUR NEW ADDRESS

General Apparatus Company has moved from Sheffield, Mass. to New York City, a change dictated by our growing volume of business, plans for our expansion in the hi-fi field, and the need for a location from which we can serve our customers more effectively.

The job of getting set up in our new quarters has necessitated some delays in recent weeks, but now we are prepared to answer correspondence and make shipments more promptly than was possible to do from our old headquarters.

Our new location is at 346 East 33rd Street, between First and Second Avenues. The telephone number is ORegon 9-5114. You can come in to buy standard G. A. products, or order them by mail.

G.A. FIXED NETWORKS

High-Quality Performance: The circuit designs and components furnished for G.A. networks represent the very best audio engineering practice. They provide these essentials of true high-fidelity performance: 1) Selectivity giving 12 db droop per octave. 2) Losses are held to a minimum by the use of air cores and No. 16 wire. 3) Inductance values are extremely accurate, and coils are unconditionally guaranteed against shorted turns. 4) Individual level controls permit exact balancing of the speakers.

General Apparatus Company is probably the largest manufacturer of high-precision network inductors. G.A. quality control assures you of the finest performance, at prices which reflect economies due to quantity production.

Two-Speaker Systems: First, decide on the crossover frequency you want, and check the impedance of the *low-range* speaker.

Select the network you require from the Table, according to the impedance of the *low-range* speaker. It is not necessary that both speakers be of the same impedance, but one should not be more than twice the impedance of the other. With an Air-Coupler for the bass, a crossover of 175 cycles is generally used, or 350 cycles if the bass speaker is in a conventional cabinet.

Three-Speaker Systems: Two networks are required for three-speaker systems. Network A should have the same impedance as the bass speaker, and network B, the same impedance as the mid-range speaker. Usually 1,100 or 2,200 cycles is chosen for network B.

Impedance of low-frequency speaker	Crossover Frequency	Order by 2 Coils	Price Only	Price Complete*
16 ohms.....	4,400	No. 1A	\$ 5.75	\$ 9.50
	2,200	1	7.00	11.50
	1,100	2	7.00	12.00
	350	4	12.00	17.50
	175	5	20.00	24.00
8 ohms.....	2,200	6A	5.75	9.70
	1,100	6	7.00	12.00
	350	8	12.00	17.50
	175	9	20.00	24.00
	85	10	20.00	26.50
4 ohms.....	275	12	7.00	15.00
	175	13	12.00	19.00

* Complete networks include necessary capacitors and level controls. Be sure to indicate whether you want just the coils or the complete network.

NETWORK CIRCUITS

Complete information is supplied with each G.A. network. Connections are so simple that the components can be hooked up in a few minutes. If you are in doubt about the correct network for your particular system, send 10¢ for the G.A. Network Data Sheet.

G.A. V-A-C CONTROLS

The Variable Audio Crossover Control is an exclusive G.A. development. Types for two and three-speaker systems permit the adjustment of the crossover at any point between 90 and 1,100 cycles (Type A) or 900 to 11,000 cycles (Type B).

Thus it is possible to determine the optimum point, or points, *after your speaker system has been installed*. If, at any time, you want to experiment with other speakers, you can shift to any other crossover by merely resetting the calibrated control knob.

Completely Flexible Controls: The V-A-C is a tube-operated device, complete with its own power supply. In addition to the calibrated control knob, there are individual adjustments for setting the level of each speaker independently of the other. Over-all volume can be regulated from the preamplifier. Since the V-A-C has a possible gain of 5, power amplifiers can be operated at minimum distortion.

V-A-C Control for Two Speakers: The V-A-C can be used with any standard preamplifier and power amplifiers. Use an amplifier of 20 to 50 watts for the low-range, and 10 to 20 watts for the high-range. Order V-A-C Control Type A.

V-A-C Controls for Three Speakers: Using a combination of Type A and B Controls, with three speakers, the crossover points can be varied from 90 to 1,100 cycles, and from 900 to 11,000 cycles. The high-range amplifier should be of 5 to 10 watts.

This is the ideal speaker system, permitting unequalled flexibility of control, delivering the finest performance that money can buy. Order V-A-C Types A and B.

V-A-C Prices, Deliveries: The V-A-C is supplied in kit form, including all components, a handsomely-finished aluminum chassis 10 by

5½ by 3 ins. with all holes punched, one 6SN7GTA and one 5W4GT, and an instruction book. As far as possible, deliveries are made from stock.

V-A-C kit, complete, type A or B..... \$39.95
V-A-C assembled, wired, and ready to use.... 56.95
75¢ additional for mailing

V-A-C INSTRUCTION BOOK

The V-A-C Instruction Book is available at \$1.00 postpaid. You may deduct that amount later from the price of a V-A-C.

G.A. AIR-COUPLERS

Air-Coupler installations, now numbered in the thousands, are rated by the most critical audio enthusiasts as the finest enclosures for bass reproduction for 2-speaker and 3-speaker systems. Moreover, the Air-Coupler, with a high-quality 12-in. speaker, is the least expensive means of obtaining full bass reproduction down to 28 cycles.

Unequalled Bass Reproduction: Unlike conventional speakers, it is not necessary to turn up the volume in order to hear the full bass. With an Air-Coupler, you can turn down the volume to bare audibility and still hear the bass in true proportion. Dimensions of enclosure, 72 by 16 by 6 ins.

Air-Coupler knocked down, ready to assemble, opening cut for 12-in. speaker..... \$29.95
Air-Coupler completely assembled..... 39.95
FOB New York City

SPEAKER-NETWORK COMBINATIONS

Recommended Speakers: While any combination of good speakers will give excellent results in an Air-Coupler system, reports from our customers indicate a strong preference for the Altec 600B in the Air-Coupler, plus a second 600B for a 2-speaker installation, with the addition of a University 4408 tweeter for a 3-speaker system.

Recommended Networks: In a system using two 12-in., 8-ohm speakers, we recommend the use of a 175-cycle crossover network, No. 9; or with two 12-in., 8-ohm speakers and an 8-ohm tweeter, a 175-cycle No. 9 network, and a 2,200-cycle No. 6A network.

Altec 600B 12-in speaker, 8 ohms..... \$46.50
University 4408 tweeter, 8 ohms..... 16.50
G. A. 175-cycle network, No. 9..... 24.00
G. A. 2,200-cycle network, type No. 6A..... 9.70

GENERAL APPARATUS COMPANY

346 EAST 32nd STREET, NEW YORK 16, N. Y.

ORegon 9-5114

AVAILABLE ONLY IN THESE KIT COMBINATIONS

W-2 with Peerless transformer or W-3 with Acrosound transformer (be sure to specify) includes Williamson type amplifier, separate power supply and WA-P2 preamplifier kit. Shipping weight 39 pounds. Shipped express only. **\$69.50**

W-2M with Peerless transformer or W-3M with Acrosound transformer (be sure to specify) includes Williamson type amplifier and separate power supply. Shipping weight 29 pounds. Express only. **\$49.75**

W-3 with Chicago "super range" transformer includes single chassis, main amplifier and power supply with WA-P2 preamplifier kit. Shipping weight 39 pounds. Express only. **\$59.50**

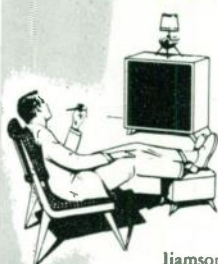
W-4M with Chicago "super range" transformer. Single chassis, main amplifier and power supply. Shipping weight 29 pounds. Express only. **\$39.75**

WA-P2 preamplifier kit only. Shipping weight 8 pounds. Express or parcel post. **\$19.75**



TRUE *High*
FIDELITY

HEATHKIT WILLIAMSON TYPE AMPLIFIER KIT



Here is the famous kit form William type high fidelity amplifier that has deservedly earned highest praise from every strata of Hi-fi music lovers. Virtually distortionless, clean musical reproduction, full range frequency response and more than adequate power reserve.

OUTPUT TRANSFORMERS — Three truly fine output transformers available for your selection. Peerless and Acrosound transformers specified for two chassis combinations W-2 and W-3 (main amplifier and power supply). New Chicago "Super range" transformer used in low priced single chassis Williamson type model (W-4). Response characteristics of all models virtually equal.

NEW PREAMPLIFIER — The exciting new WA-P2 preamplifier provides full control through its 5 individually controlled input circuits, 4 position turnover and roll-off switches — separate bass and treble tone controls. Attractively styled, beautiful appearance, baked gold enamel finish, functional in design. Will operate with any Heathkit Williamson type amplifier.

BUILD IT YOURSELF — Combined with brilliant performance of these units is the amazingly modest investment required and the fun of building it yourself. Detailed step-by-step construction manual complete with illustrations and pictorials insures success for even the most non-technical audio enthusiast.

Complete specification and schematic sheet available upon request.

HEATH COMPANY, BENTON HARBOR 5, MICHIGAN

Only the New MIRACORD XA-100

has the "MAGIC WAND"
and push button control!



Stabilizing plates and pusher arms are no longer needed because of the unique construction of the "MAGIC WAND"

To the music lover the MIRACORD XA-100 has become a symbol of everything that could be asked for in a 3-speed automatic changer. Wow and rumble are eliminated and the "Pausomatic" feature allows the user to select "pause" time between records of from 5 seconds to 5 minutes. Send for descriptive literature to Dept. M-9, or see this unit at leading distributors throughout the U. S.

AUDIOGERSH CORPORATION

254 GRAND AVE., NEW HAVEN 13, CONN.
EXCLUSIVE DISTRIBUTORS IN THE U.S. FOR ELAC RECORD PLAYERS

Story of Jazz in Chicago

(Continued from page 52)

dance bands. A fad known as "bop" — that fantastic, unpleasant music — did irreparable harm as the men who played it donned their berets, grew their pointed beards, and adopted the attitude of to-hell-with-what-the-public-wants-we'll-play-what-we-like. Glenn Miller, the shining star of the dance band world, was lost in action, and many of the older band leaders had it made, and just didn't want to fight the Battle of the Road any more.

Lump all these facts together and you see where and why the dance bands disappeared. Sure, there are bands today, good ones, but there are nowhere near as many. And a Ray Anthony or a Count Basie, Les Brown, Ralph Marterie, Sauter-Finegan, or a Les Elgart doesn't have the great popularity and downright idolization of an Eddie Fisher, Patti Page, Perry Como, or a Kay Starr. Without this enormous national following, it's a struggle every single night of the year.

So the pendulum has swung. Maybe it will swing back again, and maybe it won't. Hotels, restaurants, and ballrooms have closed or have done away with dancing for purely economic reasons. The Blackhawk serves excellent food and drink, and nothing more. The College Inn has vanished. The Palmer House hires local crews. Occasionally the Aragon and the Trianon bring in a big name band, but only once in a while. There is good dancing at the Edgewater Beach Hotel on the Beachwalk during the summer, but when fall arrives, it's name-single-acts inside, with a local dance band. The Conrad Hilton has an ice show, the Sheraton has a twin piano team, the other hotels offer little more. Around town there are man-sized and pint-sized bars that do present good jazz, but you can count them off on the toes of both feet. Jazz, Ltd., on East Grand Avenue, is neat and small, and a 5-piece Dixieland band brings back the good old memories.

Shining forth above all is the Blue Note, at Clark and Madison streets. Frank Holzfiend handles the Martinis and books the talent, and he does both affably and well. So the traditions of jazz in Chicago go on there, traditions that look forward and backwards, with Stan Kenton and his Orchestra, Ella Fitzgerald, the Dave Brubeck quartet, Les Brown and His Band of Renown, Muggsy Spanier's Ragtimers, and a lot of others; and always, each year on his birthday, Louis Armstrong and his All-Stars. Long may they gleam in the musical firmament.

If you are a jazz enthusiast, you will want a copy of this issue autographed by Fred Reynolds. He has promised to spend as much time with us at the Chicago Hi-Fi Show as his duties at WGN permit. So come to see him at Room 805, Palmer House, September 30 to October 2.

Records, Tape, and FM

Continued from page 14

response in the receiver is in such a case actually desirable."

Since that report was submitted, the number of AM stations increased from 700 to nearly 2,600 today. The "restriction in frequency response" has become standard practice in AM receiver design, and is attained by the use of narrow-band IF transformers, except in special AM sets that have a switch control to provide wide-band or narrow-band audio response.

Four-Day Week

The offices of MUSIC AT HOME are now open from 8:30 A.M. to 5:45 P.M. Monday through Thursday. This schedule was set up as an experiment to continue until daylight saving ends. It seems to be working out very successfully and, because of the advantages of three-day weekends, the present arrangement will probably be continued. In case of emergency when the offices are closed, our Publisher can usually be reached at his country home in Monterey, Mass., where the telephone number is Great Barrington 500.

FM Antenna Connections

In the picture of the Taco FM antenna which appeared on page 46 of our July-August issue, the lead-in was connected to the dipole adjacent to the mast. Fred Voorhaar has called our attention to the fact that, although we obtained excellent results that way, reception is still better when the lead is connected to the outer dipole. Reason is that the leads between the dipole, shown at the left on the bottom of the page, are not transposed. On the La Pointe antenna, where the leads are transposed, the connection illustrated on page 47 is correct.

Audio Quality from TV Sets

When so many people have good audio systems for records, tape, and FM, it's hard to understand why manufacturers can't equip their TV sets with terminals so that the sound channel can be connected to an external audio system. On most TV sets with a 4-in. speaker on the side of the cabinet it is not possible to take off the audio output in any simple way. All pre-amps now have switch positions for TV sound. It would be nice if we could use them. We were reminded of this at a recent color TV demonstration of a model selling just under \$1,000. The picture was good, but the sound was so poor that we could hardly understand a word that was said!

For Contortionist-Musicians

In the window of a second hand store near our office there is this sign

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CELLO & ACCORDION

COUCH & CHAIR TO MATCH

We've never seen 'em played that way, but maybe it can be done!

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the House of AUDIO



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Aside from the quality of performance these units provide, they have been physically designed to aid the user in installation. Extremely compact, they occupy a minimum of space, and are available either in cabinets for bookshelf mounting or in chassis for console installation.

AM-FM TUNER—Model R640

An extremely sensitive and highly stable tuner covering both the AM and FM broadcast bands. FM section features selectable AFC and temperature-compensated oscillator for simplified tuning and drift elimination. AM section provides high quality reception of all standard broadcasts. The entire unit, in chassis, is only 6 inches high. Operates into any quality amplifier.

R640 (CHASSIS) complete with tubes

\$105.50

R640G (in METAL CABINET) complete with tubes

112.95

15-watt AMPLIFIER—Model DB15

A complete, self-contained power and pre-amplifier combining extreme flexibility with high quality performance. Two-section equalizer permits 20 different combinations of turnover and roll-off for record reproduction. Frequency response is flat from 20 to 20,000 cycles $\pm .5$ db. Has separate, variable bass and treble tone controls.

Input facilities are provided for magnetic cartridges, tuner, TV, tape, and other program material. Has special output for tape recorders. Bogen-exclusive Loudness Contour Selector enables adjustment of response curves to listening characteristics at different levels. Output circuit employs partial cathode-loading technique.

DB15 (in CHASSIS) complete with tubes

\$89.95

DB15G (in METAL CABINET) complete with tubes

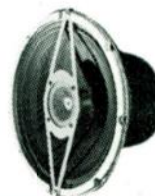
99.00

STROMBERG-CARLSON

Model RF-471 SPEAKER SYSTEM

A co-axial speaker consisting of a 12-inch 'woofer' section and a 2-inch 'tweeter' with self-contained cross-over. Frequency response extends from 30 to 14,000 cycles when used in labyrinth enclosure. In infinite baffle, low frequency response limit is 50 cycles. Angle of coverage is better than 100°. Can handle 32 watts of power in program material. Impedance is 8 ohms.

\$49.95



GARRARD

"Triumph" Model RC-80 3-SPEED RECORD CHANGER

Fully automatic, the 'Triumph' plays all record types of all speeds: 33 $\frac{1}{3}$, 45, and 78 rpm. Switches 'off' after last record and returns tone arm to rest position. A special spindle for 45 rpm records is available at slightly extra cost. Tone arm plug-in heads accommodate practically all standard cartridges. Features include: 4-pole motor for minimum hum pickup—weighted turntable for flywheel action—muting switch to eliminate noise on run-in and run-off grooves—simple lever control for 'start', 'stop', 'reject' with single knob speed selector.

\$49.50

New

PICKERING TURN-OVER CARTRIDGE

Model 260DS with Diamond
and Sapphire Styli

Following the enthusiastic acceptance of the Model 260DD Dual Diamond Cartridge, Pickering now announces the Model 260DS with Sapphire stylus for standard and Diamond for micro-groove. Both cartridges are otherwise identical. Response is smooth and clean from 20 to 20,000 cycles. Lower moving mass and higher compliance provides excellent tracking at low stylus pressure, and good transient response. These and other design features result in lower harmonic and intermodulation distortion. The Model 260DS fits most pickup arms and operates directly into conventional low-level preamp inputs.

Model 260DS—Diamond-Sapphire **\$48.00**

Model 260DD—Dual Diamond **60.00**



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Directory of Hi-Fi Record & Equipment Dealers

To keep this Directory up-to-date, it is revised for each issue of MUSIC at HOME and, in order to make it as complete as possible, new names are added as soon as they are reported and checked

ALASKA

Bethel
Charlie's Radio Shop, Box 1717
Fairbanks
Arctic Radio & Record Shop, 520 2nd Ave.

ARIZONA

Bisbee
The Music Box, Box 340

CALIFORNIA

Berkeley
U. C. Corner, 2350 Telegraph Ave.
Burbank
Valley Electronic Supply Co., 1302 W. Magnolia
Hollywood

HOLLYWOOD ELECTRONICS

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7460 MELROSE AVE., L. A. 46. WEB 3-8208

Pacific Radio Exchange, 1407 Cahuenga Blvd.
Radio Recorders Equip. Co., 7007 Melrose Ave.
La Jolla
The Audio Workshop, Box 101
Long Beach
Custom Sound, 3687 Atlantic Ave.
Penny-Owsley Music Co., 4334 Atlantic Ave.
Los Angeles
Arco Electronics, Inc., 103 W. Vermont Ave.
Figart's Sound Un-Ltd., 6320 Commodore Sloat
Henry Radio Co., 11240 W. Olympic Blvd.
Kierulff Sound Corp., 820 W. Olympic Blvd.
Magnetic Recorders Co., 7120 Melrose Ave.
Shelley Radio Co., Inc., 2008 Westwood Blvd.
Universal Radio Sup. Co., 1729 S. Los Angeles
Menlo Park
High Fidelity Unlimited, 935 El Camino Real
Oakland
Elmar Electronics, Inc., 140 11th St.
Olin S. Grove, 2904 Telegraph Ave.
E. C. Wenger Co., 1450 Harrison St.
Pasadena
Daw Radio, Inc., 1759 E. Colorado St.
High-Fidelity House, 536 S. Fair Oaks
Sacramento
The Sound Shoppe, Inc., 1910 16th St.
Tower Record Mart, 1518 Broadway
San Diego
Breier Sound Center, 3781 Fifth Ave.
Southern Calif. Music Co., 630 C Street
San Francisco
Hal Cox Custom Music, 2598 Lombard St.
Eber Electronics, 160 10th St.
Fidelity, Ltd., 562 Kearney St.
The Hi-Fi Shop, 3525 California St.
Television Radio Supply Co., 408 Market St.
West Coast Radio & Elec., 409 Market St.
Zack Radio Supply Co., 1424 Market St.
San Jose
Peninsula Telev. & Radio Sup., 881 S. 1st St.
San Pedro
Bower's Music, 810 S. Gaffey
San Rafael
Catania Sound, 1607 4th St.
Santa Barbara
The Gramophone Shop, 9 E. Canon Perdido
Thermal
Custom Classics, 82-321 Ave. 56
Van Nuys
House of Sight & Sound, 14513 Victory Blvd.

Whittier
Lovell's Radio-TV Section, 175 N. Greenleaf

COLORADO

Denver
Chas. E. Wells Music Co., 1629 California St.
Grand Junction
Clark-Steen Music Co.

CONNECTICUT

Danbury
Heims Music Store, Inc., 268 Main St.
Hartford
Nathan Margolis Shop, 28 High St.
The Moses Radio-Electronics Co., 330 Locust St.
New Haven
David Dean Smith, Inc., 262 Elm St.
Westport
Music Systems of Westport, Inc., Post Road

DELAWARE

Wilmington
Radio Elec. Serv. Co. of Pa., 3rd & Tatnall
Wilmington Elec. Spec. Co., 405 Delaware Ave.

DISTRICT OF COLUMBIA

Washington
Discount Record Shop, 1327 Conn. Ave., NW
Electronic Wholesalers, 2345 Sherman Ave., NW
Hollywood Record Shop, 1706 Columbia Rd., NW
Shrader Mfg. Co., Inc., 2803 M St., NW
Sun Parts Distr., 520 10th St., NW

FLORIDA

Jacksonville
Southeast Audio Co., 930 W. Adams St.
Melbourne
McHose Electronics, New Haven Ave.
Miami
Flagler Radio Co., Inc., 1068 W. Flagler St.
St. Petersburg
Better Listening Studio, 24 Beach Dr. North
Hi-Fi Music Shop, 6821 Central Ave.

GEORGIA

Atlanta
Baker Fidelity Corp., 1429 Peachtree St., NE
High Fidelity SSS, 606 Peachtree St., NE

ILLINOIS

Champaign
The New Sound, 35 E. Springfield Ave.
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Arpio Sales, Inc., 4305 N. Lincoln Ave.
Audio Workshop, Inc., 725 S. LaSalle St.
Chicago Electronics Distr., 420 E. 87th St.
Crittenton's TV & App., 4740 N. Broadway
De Haan Hi Fi Co., 1655 W. 79th St.
Electronic Expeditors, 2909 W. Devon Street
Lowe's Radio Co., 1217 E. 55th St.
The Lukko Sales Corp., 5024 Irving Park Blvd.
Marquette Records, 3215 W. 63rd St.
Newark Electric Co., 223 W. Madison
Voice & Vision, 53 E. Walton St.

NOTICE TO DEALERS

Listings in this Directory are available without charge to hi-fi record and equipment dealers as a service to our readers. If you operate a hi-fi record or equipment store, and do not find your company listed, please write to the Directory Editor, MUSIC at HOME Magazine, 207 E. 37th Street, New York City 16. Information for qualifying for a listing in this Directory will be sent to you at once.

INDIANA

Columbus
Ernie's Record Shop, 910 25th St.
Indianapolis
Graham Elec. Supply, Inc., 102 S. Penna. St.
Lafayette
Golden Ear, 610 Main St.
Muncie
Seward B. Price, 105 Rose Court

IOWA

Council Bluffs
World Radio Laboratories, West Broadway
Iowa City
Woodburn Sound Service, 8 E. College St.

KANSAS

Wichita
The Bennett Music House, 206 E. Douglas

KENTUCKY

Louisville
Lewis Radio & Sound, 266 W. Liberty Ave.

LOUISIANA

Baton Rouge
Louisiana Radio & Telev., 1645 Plank Rd.
Ogden Park Record Shop, 618 N. 3rd St.

MAINE

Portland
Bartlett Radio Co., 625 Congress St.

MARYLAND

Annapolis
Albright's, Custom Music Dept., 78 Maryland Ave.
Baltimore
Custom Music Systems, 2326 N. Charles St.
Music House, 5855 York Rd.
Radio Elec. Serv. Co., 5 N. Howard St.
Wholesale Radio Parts Co., 308 W. Redwood St.

MASSACHUSETTS

Boston
DeMambro Radio Supply Co.,
1095 Commonwealth
Lafayette Radio 110 Federal Street
The Listening Post, 161 Newbury St.
Mosher Music Co., 181 Tremont St.

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Yankee Electronics, 257 Huntington Ave.
Holyoke
Tel-O-Wire Sound Co., Inc., 24 Newton Place
Lunenburg



FM RECEIVING ANTENNAS
Standard and Special Designs
WHOLESALE SUPPLY CO.
Lunenburg, Mass.

Springfield
Freedman Custom Audio Lab., 1225 Main St.
Soundco Electronic Supply Co., 47 Dwight St.
Taunton
David B. Dean & Co., 85 Cohasset St.

MICHIGAN

Ann Arbor
Purchase Radio Supply, 605 Church St.
Birmingham
McCallum & Dean, 409 E. Maple Ave.
Dearborn
Cherry Hill Radio, 111 N. Waverly
Detroit
Audio House, Inc., 19771 Conan
Buddy's TV & App. Inc., 6616 Van Dyke
The Glen Music Shop, 14127 Grotiot
Good Housekeeping Shops, 1250 Library
Haco Distributing Co., 9730 Burnette
Hartman Auto Supply, 7150 W. Vernor
The J. L. Hudson Co., 1206 Woodward Ave.
K. L. A. Labs, Inc., 7422 Woodward Ave.
London Records, 15822 Grand River
Pecar Electronics, 10729 Morang
Reno Radio Co., 1314 Broadway
Shirley's Radio Shop, 15822 Grand River
Flint
Jensen, Inc., 501 N. Saginaw St.
Lansing
Tape Recording Industries, 3335 E. Michigan
Mt. Clemens
Russo Stores, 61 N. Walnut St.
Port Huron
Price Appliance, Inc., 525 Water
Sault Ste. Marie
John P. LeBlanc, 321 E. Spruce St.

MINNESOTA

Minneapolis
Anderson's Gifts & Records, 44 W. 66th
Lew Bonn Co., 1211 LaSalle Ave.
Disk & Needle Record Shops, 1439 W. Lake
St. Paul
Fine Cameras & Records, 2060 Ford Pkwy.
Gopher Electronics Co., 370 Minnesota St.

MISSOURI

Independence
Don Cook's Electronic Equip.,
1020 W. Truman Rd.
Kansas City
Barnard's, 4724 Broadway
David Beatty Custom High Fidelity Sound,
1616 Westport Road
St. Louis
Commercial Electronic Serv., 2609 Olive St.

NEBRASKA

Omaha
Moss Recording Studios, 1910 California St.

NEW JERSEY

Montclair
Perdue Radio Co., 8 S. Park St.
Morristown
M & M Telev. Co., Inc., 7 Maple Ave.
Newark
Federated Purchaser, Inc., 114 Hudson St.
Hudson Radio Co., 35 William St.
Lafayette Radio, 24 Central Ave.

Paramus
Music Age, Inc., Route 4
Paterson
TV & Electronics Co., 152 Paterson St.
Princeton
Princeton Listening Post, 164 Nassau St.

NEW MEXICO

Albuquerque
Sound Engineering & Equip.,
601½ Yale Blvd. SE

NEW YORK

Binghamton
Audio Service Co., 145 State St.
Brooklyn
Brooklyn Hi-Fi Sound Center, 2128 Caton Ave.
Green Radio Distr., 472 Sutter Ave.
Buffalo
Frontier Electronics Inc., 1503 Main St.
Radio Equipment Corp., 147-151 Genesee St.
Glens Falls
Ray Distributing Co., 284 Glen St.
Harrison Audio Shop, 144-24 Hillside Ave.
Hempstead
Island Radio Distributor, Inc., 412 Fulton Ave.
Standard Parts Corp., 277 N. Franklin
Long Island City
Electronic Supply Corp., 4108 Greenpoint Ave.
New York
Arrow Electronics, 65 Cortland St.

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from pickup to speaker. Try and compare your choice of hi-fi components on the "AUDIOMAT" in ASCO's air-conditioned demonstration studio.

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115 W. 45th St., 3rd floor, New York 36, N. Y.
Write for free catalog, or phone JUdson 2-1750

Bennett Radio, 565 3rd Ave.
Bryce Appliance & Record Shop,
110 W. 40th St.
Concord Corp., 55 Vesey Street
Dorasin Distributing Corp., 149 W. 13th St.
Federated Purchaser, Inc., 66 Dey St.
Goody Audio, 235 W. 49th St.
Grand Central Radio, 124 E. 44th St.
Harrison Audio Shop, 225 Greenwich St.

HARVEY RADIO CO., Inc.

The best place to see, hear, and buy the newest and finest in hi-fi equipment. Out-of-towners—make Harvey Radio your audio headquarters. One block from Times Square.

103 W. 43rd St., New York 36 Phone JU 2-1500

Haynes-Griffin Ltd., 420 Madison Ave.
Heins & Bolet Co., 68 Cortlandt St.
Hudson Radio Co., 48 W. 48th St.
Hudson Radio Co., 212 Fulton St.
Lafayette Radio, 100 Sixth Ave.
Leonard Radio, Inc., 69 Cortlandt St.
Midway Radio & TV Corp., 60 W. 45th St.
Music Masters Records, 53 W. 47th St.

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TERMINAL RADIO CORP.

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Rochester
Craig Audio Laboratory, 12 Vine St.
Jerry Fink Co., 358 Averill Ave.
Music Lovers Shoppe, 370 E. Main St.
Roslyn Heights
Segen Electronics, Inc., 118 Glen Cove Rd.
Schenectady
Concert-Craft, Inc., 1138 Waverly Place
Syracuse
W. E. Berndt, 655 S. Warren St.
Troy
Trojan Radio Co., Inc., 420 River St.
Yonkers
Westlab, 1587 Central Ave.

NORTH CAROLINA

Burlington
High Fidelity Sales, Box 1676
Chapel Hill
Kemp's, 207 E. Franklin St.
Charlotte
Music, Inc., 212 N. Independence

OHIO

Akron
Main TV Supply Co., 1013 N. Main St.
Canton
Burroughs Radio Co., 711 Second St., NW
Cincinnati
Customcrafters Audio, Inc., 2259 Gilbert Ave.
Rex Dale, 4114 Francis Ave.
Steinburg's, Inc., 633 Walnut St.
Cleveland
Audio Craft Co., 2915 Prospect Ave.
Custom Classics, 13421 Euclid Ave.
Pioneer Radio Supply Co., 2115 Prospect Ave.
The Progress Radio Supply Co.,
413-415 Huron Rd.
Publix Book Mart, 930 Prospect Ave.
Radio & Electronics Parts Corp., 3235 Prospect
Columbus
Anderson's High Fidelity Sound Center,
2244 Neil Avenue
Electronic Supply Corp., 134 E. Long St.
Whitehead Radio Co., 118-124 S. Long St.
Lakewood
Music Unlimited, 13410 Detroit Ave.
Toledo
Warren Radio Co., 1002 Adams St.

OREGON

Eugene
Abar Radio & Television, 298 W. Broadway
Portland
Hawthorne Electronics, 700 S. E. Hawthorne
Salem
Cecil Farnes Co., 442 N. Church St.

PENNSYLVANIA

Allentown
Baker Communications, 9 S. 12th St.
Federated Purchaser, Inc., 1115 Hamilton St.
Hazleton
S. J. Pensock, 136 N. Wyoming
Lancaster
John H. Troup Music House, 38 W. King
Merion
Hi-Fidelity Sound Corp., 368 Montgomery Ave.
Philadelphia
Almo Radio Co., 412 N. 6th St.
Danby Radio Corp., 19 S. 21st St.
Penn Electronic Parts Co., 5303 Frankford Ave.

in the PHILADELPHIA area

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Phone: LOmbard 3-7390

ten Cate Associates, 6128 Morton St.
Walker Radio Serv. & Sales, 3rd & Fern Sts.
Reading
George D. Barbey Co., 2nd & Penn Sts.

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PLUS
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THE TRANSCRIBER COMPANY, pioneers in diamond re-tipping of phonograph needles and the first in this highly specialized field, will retip your present needle with a genuine whole diamond (not chips or splints) for \$10.50 plus 25 cents for handling and postage.

Today, diamond needles are accepted as the only way to protect valuable, finely grooved long-playing records and to obtain distortion-free reproduction.

Chances are your record player is equipped with a sapphire or osmium-tipped needle, which has an average life of from 20 to 30 hours of playing time. Beyond that you run the risk of serious damage to your records. A diamond tipped needle can be used safely for approximately 1000 hours. When you retip your needle with a diamond you save, because diamonds cost you less per playing hour and records last longer.

Send us your replacement needle assembly now — today. Let us retip it with the highest quality genuine diamond stylus — exactly the same as we make for leading radio stations the country over. You pay only \$10.50 for a genuine diamond from Transcriber because you deal directly with a leading manufacturer of diamond styli for broadcast use.

Our diamond tips are unconditionally guaranteed and are made for long-playing 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:

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Diamond Stylus Manufacturers

70 Pine Street

Attleboro, Mass.

Roslyn
High-Fidelity Music Center, 1373-83 Easton Rd.

RHODE ISLAND

Providence
DeMambro Radio Supply Co., 90 Broadway

TENNESSEE

Memphis
Ferguson's Record Shop, 173 South Cooper St.
Nashville
Nicholson's, 105 8th Ave. N.

TEXAS

Dallas
Crabtree's Wholesale Radio, 2608 Ross St.
Fort Worth
Audio Associates, 2804 Race St.
Houston
Audio Center, Inc., 1633 Westheimer
Gulf Coast Electronics, 1110 Winbern St.
Southwest Record Sales, 4710 Caroline
Sterling Radio Prods., Co., 1616 McKinney Ave.
Wrye Company Ltd., 2045 Welsh St.

UTAH

Salt Lake City
O'Loughlin's Radio Supply Corp.,
113 E. South St.

VIRGINIA

Charlottesville
Charlottesville Music Center, Inc.,
117 E. Main
Norfolk
Electronic Engineering Co., 316 W. Olney Rd.
Richmond
Harry Dalton—"Audio Workshop"
5813 S. Crestwood Ave.

WASHINGTON

Puyallup
Music Shop, 111 W. Main St.
Richland
Korten's, Inc., 1351 Geo. Washington Way
Seattle
Electricraft, Inc., 622 Union St.
High Fidelity Headquarters, 603 Broadway N.
Olympic Engineering Co., 2008 Westlake Ave.
Pacific Electronics Sales, 1209 First Ave.
Radio Products Sales Co., 1214 First Ave.
Seattle Radio Supply Co., 2117 Second Ave.
Spokane
E. M. Johnson Co., W. 615 First Ave.
Tacoma
Wm. T. Raymond & Associates
17 Oak Park Dr., SW

WEST VIRGINIA

Wheeling
James M. Black & Sons, 952 Market St.

WISCONSIN

Appleton
Valley Radio Distr., 518 N. Appleton St.
Janesville
The Audio Shack, 1203 Milwaukee Ave.
Milwaukee
Television Parts, Inc., 714 W. State St.

ALBERTA

Lethbridge
Leister's, Paramount Theatre Bldg.

BRITISH COLUMBIA

Vancouver
Hygrade Sound Sales, 971 Richards St.

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Chances are you're not a trained musician or an electronic engineer. But you do want to hear and enjoy *all* of the music you play on records, tape or radio. RCA New Orthophonic High Fidelity is designed for you... precision-built to reproduce the length and breadth of musical sound.

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Payette Radio Ltd., 730 St. James W.

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Regina
National Musical Supply Co., 1780 Hamilton St.

CUBA

Havana, Vedado
"California" Alta-Fidelidad, LaRompo 23Y "P"



IDEAS for YOU

THE PURPOSE of this Department is to call attention to new products of interest to our readers. No attempt is made to rate performance of equipment shown, as that is not considered to be a proper function of this Magazine. Detailed specifications and descriptive literature can be obtained on request by writing the manufacturers. Music AT HOME will appreciate your mentioning this Magazine.

Molded-on Plugs

No need to struggle with shielded wire and plugs for tip jacks! Now, plastic covered,



shielded wire, with a plug at each end all soldered and held firmly by a molded base, is available in lengths of 3, 5, and 7 ft. As a way to get rid of the meanest part of hooking up hi-fi equipment, these made-up leads are recommended highly. *V & H Sales Co., Long Hill Branch, Bridgeport, Conn.*

Continued on page 60

PRECEDENT



Connoisseur

► The man of discernment insists upon FM reception by PRECEDENT. He knows REL's new PRECEDENT is the only truly professional FM tuner, with performance exceeding broadcast station standards, and beauty which enhances the finest homes.

► Most FM broadcast networks are linked, not with wires, but by REL receivers. Programs passing through a chain of REL receivers emerge with lifelike tonal range and no appreciable distortion — an engineering triumph no other tuner can begin to approach.

► The new PRECEDENT is even further improved. In a handsome, perforated metal cover, it costs \$325 — and worth every penny of it! Write today for the name of your nearest dealer, so you can see and hear this pace-setting PRECEDENT for yourself.

RADIO ENGINEERING LABORATORIES • INC.

36-40 Thirty-seventh Street • Long Island City 1, N. Y.



Model SC Corner Style \$450 FOB Lawrence

YOU'VE NEVER
HEARD
ANYTHING TO EQUAL



the **de MARS**
Styrocone speaker system



Model SW Wall Style \$450 FOB Lawrence

AUTHENTIC bass response . . . ability to handle the full dynamic range of records, FM, and tapes . . . multi-cone direct-radiating system for optimum vibrating surface at every frequency . . . these combine to permit listening at satisfying volume for an entire evening without fatigue. Professional critics have been unanimous in their enthusiasm for this radically different speaker. Fifteen minutes' listening will convince you. Write for Free Booklet "Listening Tests — and what they prove."

de MARS ENGINEERING & MFG. CO.

360 Merrimac Street
Lawrence, Massachusetts

Ideas for You

Continued from page 56

3-Way Speaker

Concentric 12- and 15-in. speakers for mounting in direct-radiator or folded-horn cabinets. These two models weigh 38 and



44 lbs. respectively, and have magnets of 3½ and 5¾ lbs. They are supplied with a crossover network and brilliance control. *Electro-Voice, Inc., Buchanan, Mich.*

Portable Tape Machine

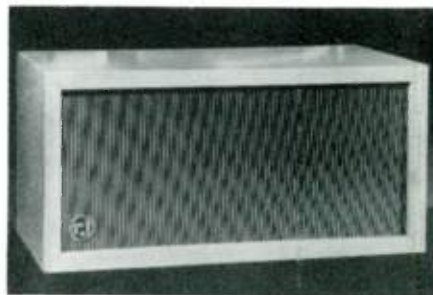
A portable tape recorder operating at 7½ ips., weighing 28 lbs. complete, that is designed to meet performance specs of pro-



fessional broadcast studio types. Because many schools can buy items under \$500 without special authorization, the chassis is priced at \$495, and the case, at \$45, can be ordered separately. Specifications are very interesting. *Ampex Corp., Redwood City, Calif.*

Bookshelf Speaker

An 8-in. Wharfedale speaker is enclosed in an R-J cabinet of mahogany or korina



veneers. Designed to be put on the shelf of a bookcase, the cabinet is 23½ ins. long, 10

Continued on page 61

irish
BRAND
GREEN BAND
Professional



**The
FINEST TAPE**

**Your
Recorder
Can Use....**

Frequency Range: 20-20,000 cps
Lowest noise level • Uniform sensitivity
Minimum amplitude variation • Less distortion

600 feet on plastic reel.....	net \$2.10
1200 feet on plastic reel.....	net 3.30
2400 feet on metal reel.....	net 7.71

SPLICE-FREE



**THE TAPE
THAT MIRRORS**

**THE
ORIGINAL
SOUND**



Available at Most Sound Dealers

ORRADIO Industries, Inc.
OPELIKA, ALABAMA

Export Division: Morhan Exporting Corp., New York, N. Y.
In Canada: Atlas Radio Corp., Ltd., Toronto

Ideas for You

Continued from page 60

deep and 11 high. Grille is gold-finished, expanded aluminum. R-J Audio Products, 164 Duane St., New York 13.

Tape Preamplifier

Panel-mounted preamp is designed particularly for use with the Pentron 9T-3M tape



transport mechanism. This very reasonably-priced unit has a gain control and power switch, record-playback switch, compensator, and illuminated VU meter. Pentron Corp., S. Tripp Ave., Chicago 24.

Three-Speed Turntables

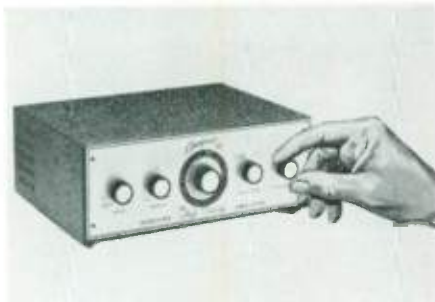
New 12-in. design is equipped with a 4-pole induction motor, or a synchronous hysteresis motor. Special features include



improved acoustic insulation between turntable and motor, off positions between the speed settings which disconnect the motor and disengage the couplers, and a neon pilot light. Rek-O-Kut Co., 38-01 Queens Blvd., Long Island City 1, N. Y.

10-Watt Amplifier and Preamp

Here is a compact unit 9 $\frac{3}{8}$ ins. wide, 7 $\frac{3}{4}$ deep, and 3 $\frac{7}{8}$ high, weighing only 9 lbs. Input switching handles radio, mike, high



and low input magnetic pickups, crystal pickup, and tape input. Tape output jacks permit monitoring during recording. Com-

Continued on page 62

H. H. Scott

TYPE 310 FM BROADCAST MONITOR TUNER



FEATURES

Wide-band detector

Single-sweep tuning

Interstation noise suppressor

2-microvolt sensitivity

Tuning-signal-strength meter

It would be difficult to hide our pride and feeling of accomplishment in the new 310 FM Broadcast Monitor Tuner. It combines professional performance, real operating convenience, and functional styling.

A basic innovation in tuning mechanism allows the entire FM band to be swept through with a single motion.

The wide-band detector and true bandpass IF's make tuning completely non-critical and drift-free. The fine-tuning control with combined tuning meter and signal strength indicator are useful primarily for accurate tuning on the many weak stations received with 2 μ v sensitivity at 20 db quieting (4 μ v at 40 db quieting).

An inter-station noise suppressor with adjustable control on the front panel allows complete inter-station noise elimination but also reception of very weak signals. Full 150 KC wide, flat bandpass characteristic gives essentially distortionless reproduction at all signal levels. Rejection of spurious responses resulting from cross modulation by strong local signals is better than 85 db, an outstanding design accomplishment.

Other features include capture ratio better than 4 db, exceptionally low co-channel and adjacent channel interference, neutralized cascade front-end for lowest noise, temperature compensated oscillator, and 8 tuned circuits providing highest attenuation outside of desired passband for most effective rejection of interfering stations. We believe that the 310 provides the best possible overall design balance incorporating all significant features and refinements known at this stage of the art.

A pioneer in sound reproduction and instrumentation, H. H. Scott, Inc. received the ELECTRICAL MANUFACTURING Award for outstanding instrument design and the Medal of Merit at the International Sight and Sound Exposition. The John H. Potts Memorial Medal of the Audio Engineering Society was awarded to H. H. Scott for outstanding contributions to audio science.

H. H. SCOTT inc.

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THE FINE-ARTS QUARTETTE

of the American Broadcasting Co.

plays flawlessly-



The Quartette Recording During Rehearsal . . .

They record their music
faithfully

with the

'SONODYNE'
Dynamic Microphone

• Staff artists of the American Broadcasting Company in Chicago, the Fine-Arts Quartette is known for its unsurpassed tone quality and technical perfection. Consistent recording of all rehearsals has helped this renowned quartette achieve the high standards of perfection for which it is known.

High-fidelity enthusiasts, as well as professional recording artists, are using the "Sonodyne" in ever-increasing numbers. Home users of tape-recorders are finding that the "Sonodyne" reproduces voice and music with a remarkable degree of "naturalness." It makes the "Sonodyne" the ideal high-quality, moderately-priced replacement for the conventional microphones supplied with tape recorders.

Model "51" Sonodyne. List price \$47.50. Available at Shure Distributors everywhere.



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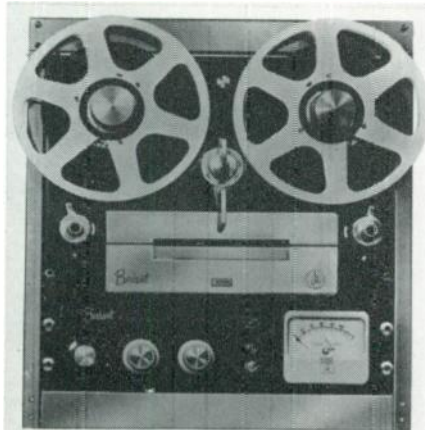
Ideas for You

Continued from page 61

plete tone and equalizing controls are provided. *Newcomb Audio Products Co., Lexington Ave., Hollywood 38, Calif.*

Broadcast-Type Recorder

Designed for mounting on a 19-in. rack, or in a console or carrying case, this machine has many special features and



facilities required for professional use. Up to 5 heads can be used for simultaneous recording or playback of two programs. Single control combines all operations, including regulation of speed on fast-forward or reverse, with automatic switching of the electrical circuits. *Berlant Associates, 4917 W. Jefferson Blvd., Los Angeles 16.*

Low-Frequency Speaker

High-power woofer on 15-in. frame has 4½-lb. magnet and extra large spider assembly to drive straight-sided, one-piece,



seamless cone with true piston action. Cone resonance is rated at 35 cycles. *Stephens Mfg. Corp., 8538 Warner Drive, Culver City, Calif.*

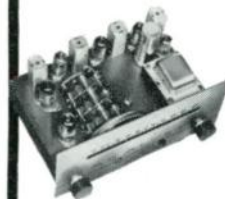
FM-AM Portable Set

First FM-AM portable, operating on AC, DC, or batteries, offered in the U. S. is manufactured by Telefunken, in West Germany. Weight in Bakelite case is 14 lbs. Telefunken is one of the largest and oldest radio companies, and this portable should prove to be very good. *G. Schirmer Co., 3 E. 43rd St., New York.*

TV Chassis and Control

Chassis for the largest picture tubes has
Concluded on page 68

New! **"Realist"**



High-Fidelity
Tuners
Designed by
Radio Shack!

FM
\$39⁹⁵

AM
\$29⁹⁵

FM TUNER: Armstrong circuit, AFC, tuned RF stage, 20-20,000 cps ± 0.5 db, 180 kc bandwidth. 6 tubes (2 dual) plus rect. AC power supply. Compact 4¼ x 9½ x 6¾" deep. Ship. wt. 6¼ lbs.

AM TUNER: matches FM exactly in size, panel, weight. Tuned RF stage, superhet, 20-5000 cps ± 3 db, 5 tubes (1 dual), AC supply.

BINAURAL!

Use of two Realist tuners saves you \$100.

Guaranteed Sensitivity!

FM: 5 microvolts for 30 db quieting!
AM: 5 microvolts!



J-B-T
ELAPSED
TIME
METER

For hi-fi installations. See article in 9-54 issue of Music At Home. Shows exact time of stylus use. 1/10th hour steps to 9,999.9 hrs. 110-130V. Meter 3½". J-B-T Model 31-EX. Order No. 25-454M. \$15.95

RADIO SHACK STOCKS THE ENTIRE LINE OF J-B-T FREQUENCY AND ELAPSED TIME METERS, SWITCHES AND TESTERS.

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\$1⁸⁵

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No.
R-8101

RADIO SHACK

167 Washington St., Boston 8, Mass.

Music at Home

The Jazz Festival

Continued from page 44

tion Center would have been a great help.

To compare the first Jazz Festival to Tanglewood is obviously unfair. In experience alone, the latter has a great advantage. Its sponsors have been able to draw upon established traditions and long experience from their efforts to encourage musicians in their development of classical music, and public interest in their work. Those who are sponsoring the recognition of jazz as a vital part of our musical culture must feel their way in such fundamental areas as program planning, and the encouragement of musicians and composers. The two projects have much in common, but there are many points of decided difference, too.

Habitues of Tanglewood, for example, would have been dismayed by the constant movement of the crowd, the humming, singing, swaying, and picture-taking with flash bulbs. But jazz is a music form in which listeners participate with the performers. No conventions restrain either party to the experience. Consequently, no one is disturbed by enthusiastic expressions from the audience of communion with the performers and their music.

However, for the benefit of those who did not attend, it should be emphasized that this was no gathering of zoot-suiters or their present-day equivalent. It was as mature an audience as any seen in the Berkshires, and with the same assortment of age groups, although they were of a different spirit, for the Newport Festival is not another Tanglewood.

It is an entirely new and auspicious step, and of a totally independent character, for it is directed toward the development of an altogether American cultural tradition.

Better Bass

Continued from page 26

low frequencies. In fact, it is virtually impossible to find the Air-Coupler unless it is in plain view. However, the mid-range speaker and tweeter must be moved around until, by experiment, the best locations are found. Usually, a separation of 5 ft. or more gives the best effects, but conditions are never the same in different rooms.

The absence of directional effect from the Air-Coupler is illustrated by an experience at the first audio show where the system was demonstrated. The Air-Coupler was set up on edge under a large table at one side of the room. Facing it, on the opposite side, was a mid-range speaker in a simple, small enclosure, and a tweeter. All during the exhibit, people came into the room and stood leaning against the table, with the Air-Coupler right behind their feet. They would listen to the music, look

Continued on page 64

AXIETTE

MADE IN ENGLAND

High

FIDELITY
OF SOUND



AXIETTE 101

8" Single Cone Loudspeaker

The need for a reasonably-priced and medium sized high-fidelity loudspeaker has been met by the Research Laboratories of Goodmans Industries who are constantly in touch and, indeed, in sympathy with the requirements of the high-fidelity enthusiast. To a certain extent this demand can be related to the present-day restrictions on living space and the fact that enthusiasts are seeking a loudspeaker which, when suitably housed, will occupy the minimum of space, and yet still faithfully reproduce their particular choice of music. From the start it was decided that the new loudspeaker would be housed on an 8 in. chassis and to set a really new trend, a special hyperbolic cone was designed.

SPECIFICATION

Frequency Range	40-15,000 c/s
Fundamental Resonance	65 c/s (nominal)
Voice Coil Diameter	1 in. (2.5 cms.)
Voice Coil Impedance	15 ohms.
Flux Density	13,500 gauss
Total Flux	51,200 Maxwells
Maximum Power Handling	5 watts peak A.C.
Overall Diameter	8½ in. (20.63 cms.)
Overall Depth	3½ in. (10 cms.)
Baffle Hole Diameter	7 in. (17.8 cms.)
Mounting Holes	4 slots ¾ in. (9.5 cms.) x ⅞ in. (5.5 cms.) equispaced on a 7½ in. (19.36 cms.) P.C.D.
Nett Weight	3½ lbs. (1.47 kgs.)
Finish	Grey Rivelling Enamel

AUDIOPHILE NETT PRICE \$21.30

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A THREE-WAY CORNER
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LABORATORY of ELEC-
TRONIC ENGINEERING,
INC.

413-4 L ST., N. W., WASHINGTON, D. C.

Better Bass

Continued from page 63

at the mid-range speaker and tweeter, and say: "You're not getting that bass from that little cabinet. Where is the bass speaker?" All the time, if they had moved their feet a few inches, they would have kicked the Air-Coupler!

How to Build a Dual Air-Coupler

It has become more or less standard practice to use $\frac{3}{4}$ in. plywood for the Air-Coupler. It is recommended in preference to solid wood because it is stiffer and, of course, it is not subject to shrinking after assembly. Construction-grade fir plywood is satisfactory if the Air-Coupler is to be out of sight. Grade AD, which is smooth and free of knots and checks on one side, is recommended if the enclosure is to be painted, perhaps to match the woodwork in the room where it will be installed. Other grades, with various woods such as maple or mahogany on the outside, are available if a natural finish is preferred.

Following is the bill of materials for the plywood pieces, all $\frac{3}{4}$ -in. thick, as shown in Fig. 6:

A-1 Back Plate	72	x 16 ins.
B-1 Front Plate	63	x 16 ins.
C-1 Front Strip	4	x 16 ins.
D, D-2 Ends	4 $\frac{1}{2}$	x 14 $\frac{1}{2}$ ins.
E, E-2 Sides	72	x 4 $\frac{1}{2}$ ins.
F-1 Short Partition	38 $\frac{7}{8}$	x 4 $\frac{1}{2}$ ins.
G-1 Long Partition	43 $\frac{1}{4}$	x 4 $\frac{1}{2}$ ins.
H-1 Short Closure	5 $\frac{1}{8}$	x 4 $\frac{1}{2}$ ins.
I-1 Long Closure	10 $\frac{1}{4}$	x 4 $\frac{1}{2}$ ins.
6 Dozen 1 $\frac{1}{4}$ in. No. 10 Flat Head Wood Screws		

It is essential that the pieces which comprise the enclosure be fastened together securely, and without any cracks. For that reason, the pieces must be sawed very accurately. In fact, the sides, ends, partitions, and closures should be cut to width without changing the setting of the saw, in order to assure uniform width. This should be done so carefully that it will not be necessary to plane or sand the edges.

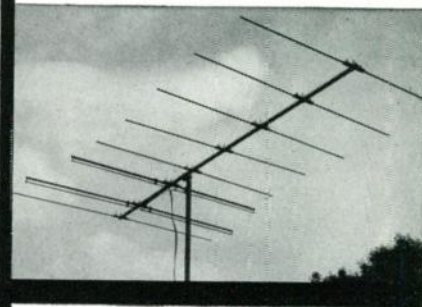
Do not use nails to assemble the Air-Coupler. In a short time, due to the powerful vibrations set up by the speaker, nails will come loose. It is necessary to use screws, in order to keep the joints tight. If they become loose, parts of the Air-Coupler will vibrate, but if the enclosure is assembled properly no vibration will be felt when the speaker is playing. In that respect, the partitions which form the air columns serve the added purpose of preventing vibration of the front and back plates. Tight joints are essential so that all the pressure set up by the speaker will be concentrated at the port, and not dissipated through cracks in the enclosure. It is not necessary to glue the joints, although it is recommended.

It is advisable to follow these step-by-

Continued on page 65

RECEIVE
**FULL
VALUE**

FROM YOUR
**FM
TUNER**



WITH A VEE-D-X BBFM ANTENNA

This eight element Broad Band antenna designed especially for HI-FIM reception delivers high gain (8 DB) over the full 20 MC band "plus" an unusually high front-to-back ratio (27 DB) assuring excellent interference rejection of unwanted stations. In fringe areas, where signal strength is of utmost importance, this antenna can be stacked

Engineered by the Research and Development Laboratories of LaPointe Electronics Inc., this VEE-D-X BBFM antenna is rugged, all-aluminum in construction, completely pre-assembled for effortless installation.

DON'T DELAY—order your VEE-D-X BBFM antenna now. The only Broad Band antenna designed for maximum performance of your FM tuner over the entire 88-108 MC band.

MAIL THIS COUPON TODAY

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PLEASE SEND ME

☐ SINGLE BBFM
☐ DOUBLE BBFM

Enclosed is my check or money order for
☐ \$27.48 SINGLE ☐ \$57.50 DOUBLE
I understand the order will be expressed collect

LaPOINTE ELECTRONICS INC.
ROCKVILLE, CONNECTICUT

Better Bass

Continued from page 64

step instructions exactly, as they will help to avoid mistakes. The tools required are

Heavy Screwdriver	No. 30 Drill
No. 9 Drill	Countersink
Hand Drill	Keyhole Saw

Read through the following instructions very carefully so that you will understand each successive step. Do not depart from the order in which they are presented. Check off each step as you complete it.

1. It is not actually necessary, but it is advisable to give each piece 2 coats of white shellac on all surfaces.

2. Assemble the sides and end pieces, being sure that the ends are *inside* the side pieces, as shown in Figure 5. Draw pencil lines across each side piece, $\frac{3}{8}$ in. from the ends, as a guide for locating screws that will go into the end pieces. On each pencil line, 1 in. from each edge, drill a No. 30 hole. That will make two holes in each side piece, at both ends.

3. Holding a side piece and an end together precisely, drill through the No. 30 holes into the end piece. Mark these pieces so that you can put them back together again in the same way.

4. Enlarge the two holes in the *side piece only* with a No. 9 drill, and countersink them for the wood screws. Then screw the side and end together, first putting some soft soap on the screws.

5. Continue this procedure until the sides and end pieces are all fastened together.

6. Locate the center of the hole for the speaker opening in the back plate. That must be 16 ins. from one end of the back plate, and 8 ins. from each side. Draw a pencil circle $10\frac{1}{2}$ ins. in diameter and, with a sharp keyhole saw, cut out the disc. Do this slowly, and with great care, so as to make a clean opening. Smooth it down with coarse sand-paper wound on a large dowel or small can.

7. Mark the outlines of the partitions on the *top* side of the front plate, taking the dimensions from Fig. 5. Mark the centers of the screws which will fasten the front plate to the partitions. Provide for 2 screws to go into the short closure, and 3 into the long closure. Space the screws into the partitions 5 or 6 ins. apart.

8. Put the front plate precisely over the rear plate, so that one end is flush with the end of the back plate farther from the speaker opening. With a No. 30 drill, drill the holes for the screws to go into the partitions through *both* pieces at the same time.

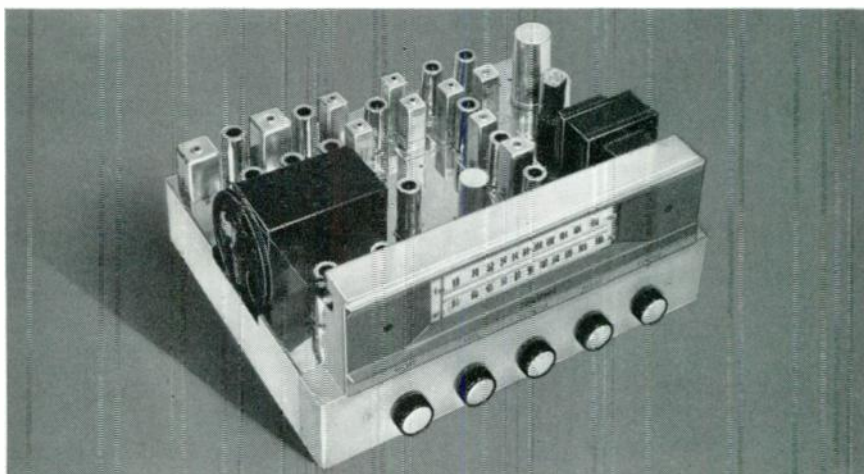
9. Fasten the short closure to the short partition, and the long closure to the long partition, overlapping them as indicated in Fig. 5. Follow the same procedure for drilling the holes as is set forth in steps No. 2, 3, and 4.

10. Fasten the top plate to the sides and

Concluded on page 66

Performance never before possible

THE new craftsmen c1000



Here is the finest FM-AM Tuner ever made. . . . The new Craftsman C1000 is the entire control center for the finest high fidelity system, combining in one chassis a superlative FM-AM Tuner and equalizer-preamplifier. The C1000 affords greater sensitivity, more features and flexibility and the highest standard performance ever attained!

FM sensitivity of 1 mv. for 20 db quieting but with wide band pass characteristics and excellent discriminator linearity for undistorted performance. AFC for simplified tuning and freedom from drift may be switched out if desired.

Two AM band width positions: "Sharp" for noisy areas and DX-ing and "Broad" for high fidelity local reception. Bandwidth: FM-200 KC; AM-13KC and 5KC.

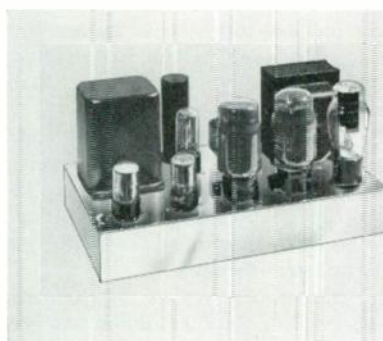
Tuned RF stages and separate triode converters assure low noise level. A 10 kc whistle filter eliminates adjacent channel interference.

The audio circuit affords input for magnetic or variable reluctance cartridges, four positions of record equalization, separate bass and treble tone controls each giving 15 db boost and attenuation and input positions for tape recorder and TV.

Frequency response: FM-20 to 20,000 cps $\frac{1}{2}$ db. AM-20 to 5,000 cps $\frac{1}{2}$ db. Distortion: 0.05% IM at 1 $\frac{1}{2}$ volts; Harmonic content negligible. New beauty of design adds refreshing smartness to room interiors, even when used without cabinet installation.

The C1000 (16 tubes, including rectifier) \$179.50 net.

The C1000 is indeed a true audio control center.



new C550 30 watt amplifier

A basic high fidelity audio amplifier, without controls. For use with high fidelity tuners or preamplifiers such as the C1000 or C350.

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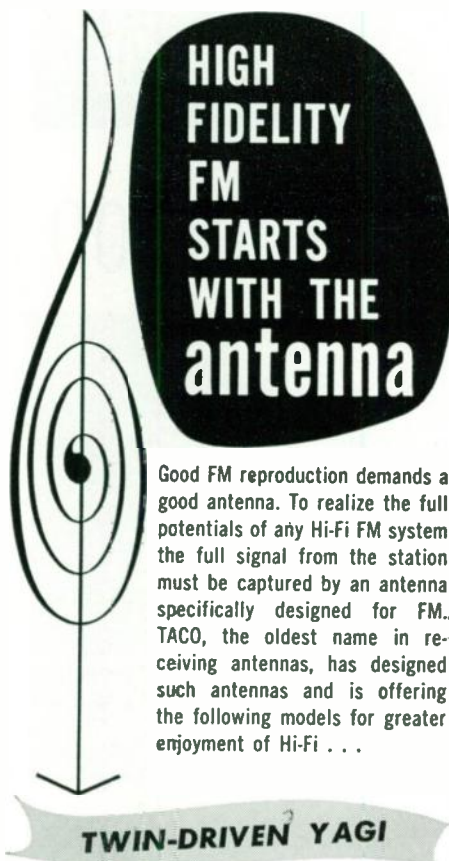
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SHERBURNE, N. Y.

Better Bass

Continued from page 65

ends, first drawing lines on the top plate $\frac{3}{8}$ in. from the edge, and mark off the centers for the screws about 6 ins. apart, and 2 ins. from the corners. With a No. 30 drill, make one hole through the top plate and into the side at one corner of the top plate. Drill out the hole in the top plate with a No. 9 drill, and countersink the hole. Put in the screw and turn it almost tight. Then, following the same procedure, put in another screw at the opposite corner.

11. Make all the other holes for the screws with a No. 30 drill. Enlarge each hole in the top plate only with a No. 9 drill, countersink the holes, and tighten all the screws firmly.

12. Following the procedure in steps No. 2, 3, and 4, fasten the end of the long closure to one side piece, as shown in Fig. 5. Check the position of the closure and partition to make sure they line up with the screw holes already drilled in the front plate. Then extend the No. 30 holes through the front plate into the closure and partition. Enlarge the holes in the front plate with a No. 9 drill, and countersink the holes. Put in the screws, and tighten them securely.

13. Following the procedure in step 12, fasten the short closure to the same side piece, and the front plate to the short closure and partition.

14. Fasten the bottom plate to the sides, ends, closures, and partitions. Draw lines on the bottom plate $\frac{3}{8}$ in. from the edge, and mark off the centers for the screws about 6 ins. apart, and 2 ins. from the corners. Follow the procedure in step No. 10 for putting in 2 screws first, then completing the holes, and putting in the remaining screws. If you located the holes accurately for the partitions when you drilled through the top and bottom plates in step No. 8, you will have no trouble at this point.

15. Fasten the front strip in place. Follow the previous procedure of making lines $\frac{3}{8}$ in. from the edge, putting in two screws first, and then drilling small and large holes for the screws.

16. Fasten the loudspeaker on the back plate, centering it carefully on the opening. Use as many screws (preferably No. 10 size) as there are holes in the speaker frame, as it must be very tight and firm. This completes the assembly work.

One further observation: The information on building an Air-Coupler has been presented in considerable detail so that you can reproduce the standard design exactly. To get the full performance which the Air-Coupler is capable of delivering do not depart from these instructions.

If you want to experiment, build the Dual Air-Coupler first, so that you can use it as a standard of performance. Then try out your own ideas, and compare the results with your Air-Coupler model.

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INDEX of ADVERTISERS

Allied Radio Corp.....	9, 56	Orradio Industries, Inc.....	60
Asco Sound Corp.....	57	Pickering & Company, Inc.....	18
Audio Fair.....	6	Pilot Radio Corp.....	8
Audiogersh Corp.....	54		
Brociner Electronics Laboratory.....	68	Radio Corporation of America.....	58
Collaro.....	Back Cover	Radio Craftsmen, Inc.....	65
de Mars Engineering & Mfg. Co.....	60	Radio Electric Service Co.....	58
Electro-Voice, Inc.....	16	Radio Engineering Labs.....	59
Electro-Voice Sound Systems.....	58	Radio Shack, Inc.....	57, 62
Fairchild Recording Equip.....	15	Reeves Soundcraft, Inc.....	1
Garrard Sales Corp.....	2	Regency Division.....	Inside Front Cover
General Apparatus Co.....	53	Rek-O-Kut Company.....	Inside Back Cover
Goodmans Industries, Ltd.....	63	Rockbar Corp.....	Back Cover
Harrison Catalogs.....	7	Schwann Catalog.....	66
Harvey Radio Co., Inc.....	55, 57	Scott, Inc., Herman Hosmer.....	61
Heath Company.....	54	Shure Bros., Inc.....	62
Hollywood Electronics.....	56	Stephens Mfg. Corp.....	67
I.D.E.A., Inc.....	Inside Front Cover	Sun Radio & Electronics, Inc.....	57
La Pointe Electronics, Inc.....	64	Technical Appliance Corp.....	66
Laboratory of Electronic Eng.....	64	Technical Tape Corp.....	49
National Company, Inc.....	10, 11, 12, 13	Terminal Radio Corp.....	51, 57
		Transcriber Co.....	58
		University Loudspeakers, Inc.....	14
		V-M Corporation.....	4, 5
		Wholesale Supply Co.....	57

FM for Automobiles

Continued from page 48

formance to the equipment used for the various communication services. Details of the new design are shown in the accompanying illustrations.

The basic unit is a compact FM tuner carried in a case 6½ ins. wide, 4 high, and 7½ deep, plus 1 in. for the connecting plug at the rear. Hardware is supplied for mounting it under the dash. There is one type designed for use in conjunction with an AM auto set, and another which works into a special 8-watt amplifier and power supply. An Armstrong circuit is employed to give maximum sensitivity and noise limiting.

One of the accompanying illustrations shows the antenna. It is just a transparent plastic strip in which two wires are embedded. The two white areas on the strip cover an adhesive material. When they are removed, the strip can be stuck permanently at the center of the windshield, and connected to the set by a lead that is furnished with a two-pin connector. Reception is not affected if the antenna is adjacent to a metal center-strip on the windshield.

Engineers and non-technical people who have these sets in their cars are highly enthusiastic about the performance. In contrast to AM reception which drops out whenever a bridge or underpass is encountered, or where the road runs along a

power line, FM holds steady and unchanging over great distances, long after AM stations in the same area fade out. And on city streets, where the AM volume may change from block to block, FM is constant in strength. In fact, for people who like to have music, weather and traffic reports, and news while they drive, the difference between AM and FM is a surprising and pleasant experience.

It is hard to understand why the development of automobile sets for FM broadcast reception was held up for 15 years after the adoption of FM for police cars. But now that this equipment has been perfected and is proving to be so very successful, it seems likely that other manufacturers will follow suit, and that this method will come into wide use wherever there is FM broadcasting.

Binaural Demonstration

Just at closing time of this issue, word was received from William Halstead, author of the article on stereophonic FM broadcasting, that plans were under way to stage a demonstration from station WGHF during the New York Audio Fair.

Whether preparations can be completed by that date is not certain at this time of writing. However, if it can be done, Mr. Halstead has promised that the receiving equipment will be installed at the Music AT HOME room in the Hotel New Yorker, for demonstration during the Fair.

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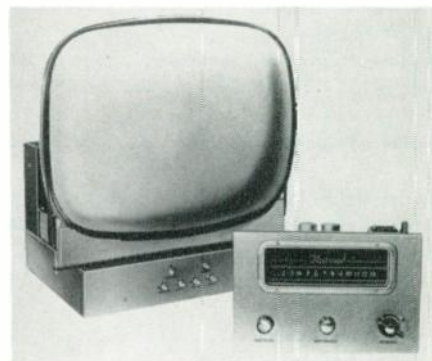
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Ideas for You

Continued from page 62

a remote control which can be operated at any distance up to 40 ft. Designed specifically for custom installations where TV



sound channel is connected to hi-fi audio system. If required, up to 8 chassis can be operated from one remote control. *Conrac, Inc., Glendora, Calif.*

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The opportunity to buy, sell, or swap items of equipment or records through the use of this department is made available as a service to readers of MUSIC at HOME without charge.

Copy should be limited to 35 words. Items are not accepted from business firms. The Publisher reserves the right to reject copy which, in his opinion, does not conform with the standards of this Magazine.

SELL: Permoflux 12T-8-1 8-ohm, 12-in. speaker and University 4401 single tweeter with 4405 filter. Val Sadowski, 188 Miller Ave., Buffalo 11, N. Y.

SELL: Complete control center comprising Brociner A100 preamp-equalizer and CA2 amplifier \$60; Kelton Diplomat speaker system \$30. All perfect condition. Tony Hoffmann, 90-A Kirkland St., Cambridge, Mass.

SELL or SWAP: Portable 75A Presto 16-in. 33-78 turntable, 33 Audiodiscs, Presto 5C cutter, 20-watt PP6L6 amplifier, VU meter, excellent, \$145. Want horn-loaded enclosure. Dr. C. F. Tuma, 13201 Miles Ave., Cleveland, Ohio

SELL: Portable battery-powered recorder, unused. Dr. R. J. Schmidt, Mental Hospital, Secaucus, N. J.

SELL or SWAP: 100 top 78 jazz records. Also Webcor Holiday phono. Both \$100 or equal in audio equipment. Ken Sheehan, 84-25 Elmhurst Ave., Elmhurst, N. Y.

SWAP: GE S1201D speaker and University 4401 tweeter with 4405 filter. Want Bozak B199 woofer. N. H. Noll, Box 228 RD1, Reading, Pa.

SELL: Clarkstan 213 pickup arm, Astatic FLC pickup arm with diamond stylus 78 cartridge, Shure 710 crystal mike, Presto 3-speed turntable. J. Halloway, Central YMCA, Philadelphia 2, Pa.

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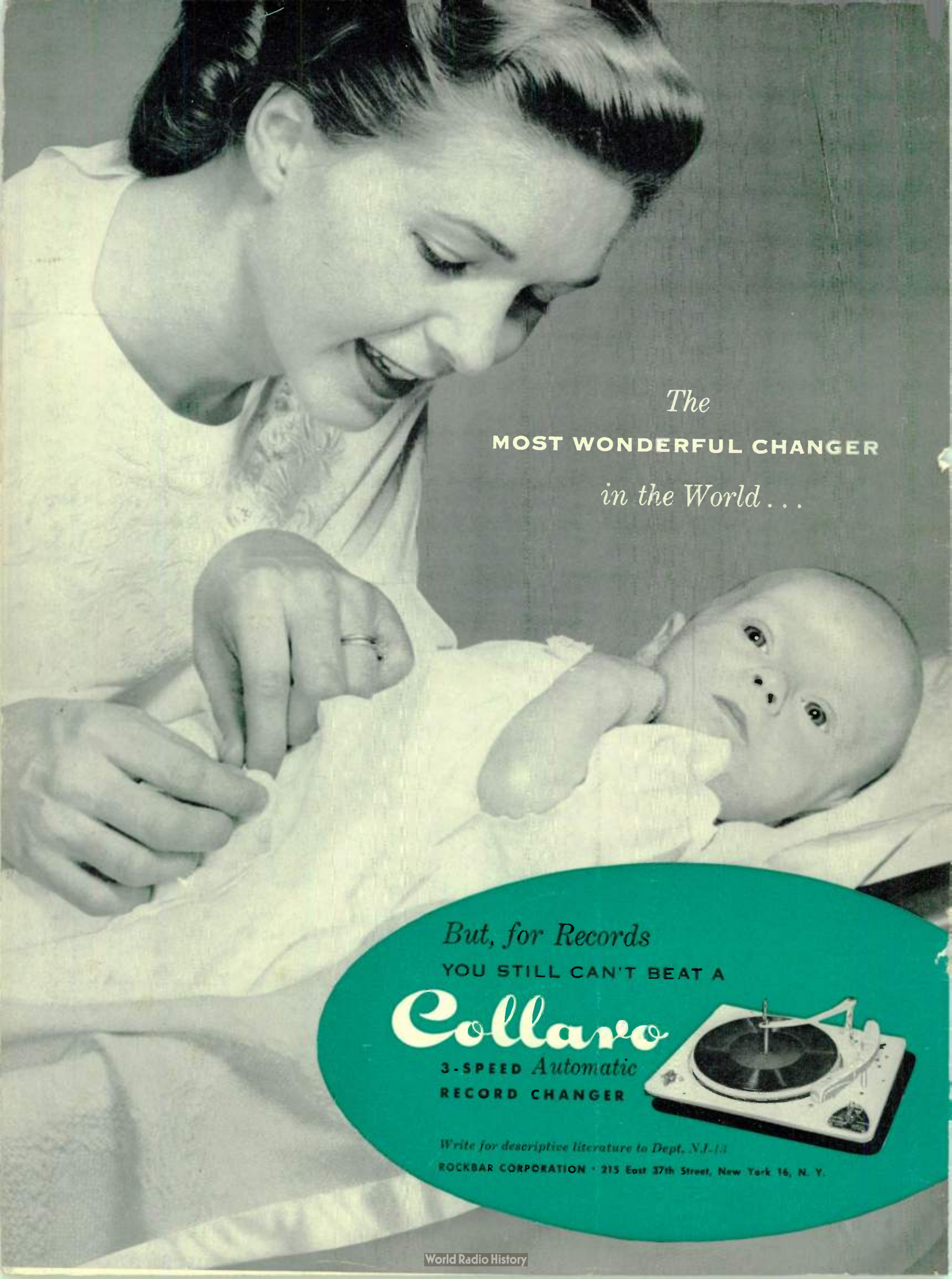


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