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Through High Fidelity

Vol. 3, No. 10—OCTOBER, 1957

IN THIS ISSUE:

Loudspeakers -Theory and Fact

Hi-Fi Shop

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On the hi-fi record

By Edward S. Bergamini

LISZT: *Concerto No. 1 in E flat; Hungarian Fantasy. Gyorgy Cziffra, piano; P. Dervaux, Paris Conservatory Orch.* ANGEL 35436.

Cziffra is worth watching. Successes in Vienna and Paris followed the pianist's flight from his native Hungary last fall. The free world gains from his arrival; complete technical command and highest musicianship describe these performances. The preposterously wonderful Hungarian Fantasy is rendered with a special twinkling affection. Excellent accompaniments, sound that gets the orchestra out around the soloist—very laudable.

* * *

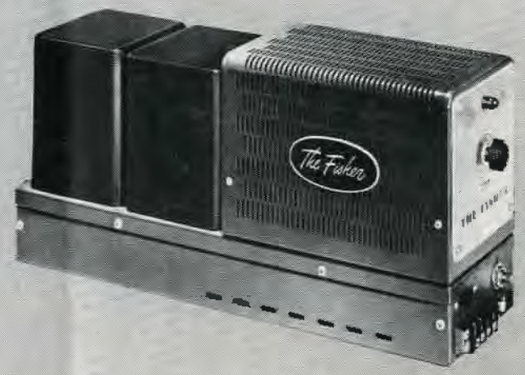
J. C. BACH: *Symphony in B flat.* W. F. BACH: *Symphony in D minor.* C. P. E. BACH: *Symphonies, No. 1 in D, No. 3 in F. De Froment, his Chamber Orch.* ANGEL 35338.

These three Bach sons have all written well, noting that the striking and poignant things stated in Friedemann Bach's Symphony are alone sufficient to make this record a must. Angel here contributes importantly to this composer's meager representation in the catalogs. De Froment's performances have an engaging propulsion, his estimable group of 42 is given fine-grained, pleasingly remote recording.

* * *

(Continued on page 5)

BEST AMPLIFIER IN ITS CLASS IN POWER, PERFORMANCE AND PRICE



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Outstanding Specifications of THE FISHER Model 80-AZ

■ Handles 30 watts; 60 watts peak! ■ Three separate feedback loops for stability and low distortion. ■ Less than 0.5% distortion at 30 watts; less than 0.15% at 25 watts; 0.05% at 10 watts. ■ IM distortion less than 0.5% at 25 watts; 0.2% at 10 watts. ■ Frequency response uniform within 0.1 db from 20 to 20,000 cycles; 1 db from 10 to 100,000 cycles. ■ Hum and noise *virtually non-measurable*—better than 95 db below full output. ■ CONTROLS: Z-MATIC and Input Level. ■ TUBE COMPLEMENT: 1-12AT7, 1-12AU7, 2-EL37, 1-5V4G. ■ OUTPUT IMPEDANCES: 4, 8 and 16 ohms. ■ SIZE: 4¼" deep, 15½" wide, 6⅞" high. ■ SHIPPING WEIGHT: 22 pounds.

Ask for Complete Specifications and the New FISHER High Fidelity Folder.

Infinite Baffle

IN PRESENTING this special issue with its chief emphasis on loudspeakers, we must not neglect the "baffle," i.e. the enclosure in which the speaker is mounted. Speaker and baffle form a single operative unit for tone production, much as the string and body of a violin are interdependent in their function. For this reason, speaker and baffle must be matched to each other.

The "infinite baffle" described here is only one of several possible baffle types. It is not necessarily the best, but it is certainly the simplest. Because of this, it serves as a good illustration for explaining the most basic functions of a baffle.

First of all, the question arises, "Why do we need a baffle? What is it good for?"

In the very act of reproducing sound, a loudspeaker creates its own enemy. The sound waves radiating from the back of the speaker are out of phase with the waves coming from the front. These two opposing forces very neatly cancel each other out. The net result, in such a case, would be very little sound indeed. As it happens, the danger exists chiefly in the low frequency, or bass, region. High frequencies, or treble, travel in a relatively straight line, so that the back wave of highs has little or no chance of interfering with the front wave. But bass notes spread out omnidirectionally and tend to "fill" a given area. As a result, the back wave of low frequencies can quite readily spill over the side of the speaker and clash headlong with the frontal bass frequencies. The result is distortion, and serious loss of bass tones. A structure which prevents this from happening is one which effectively "baffles" the back wave by putting a barrier between front and back of the speaker.

The simplest, and earliest, forms of baffles were very large flat boards. With the speaker mounted securely near the center of such a board, the back wave had to travel a considerable distance before its ill effects could be felt at the front. The bigger the baffle, the more assurance that no back wave interference would be encountered. Theoretically, a board of infinite dimensions would be the ideal in this case because, separated by this immense panel, front and back wave could never meet. But there are no "infinite" boards, and if there were, where would they fit?

Obviously, the term "infinite baffle" must be taken not quite so literally when we examine some practical examples of enclosures which are still known as "infinite baffles."

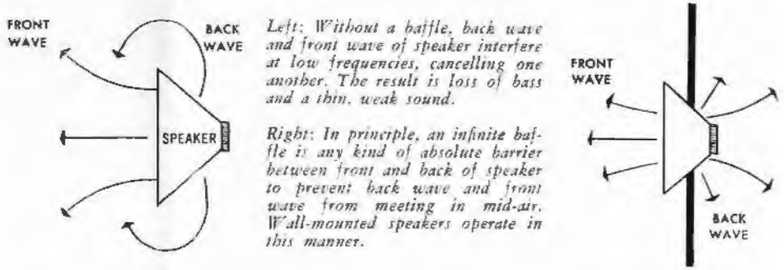
The nearest thing to a board of infinite dimensions in all directions is the wall between two rooms of a house. This is referred to as an infinite baffle, and you will find many excellent home installations in which the speakers are mounted in such a wall.

If you take the very large board and fold back its top, sides, and bottom, you still have the same amount of wood, but instead of a flat baffle you have created a form of box, or enclosure.

Commercial versions of such box-type infinite baffle are usually large, rigidly braced, and internally padded enclosures. They depend chiefly on their size and padding to absorb the unwanted back wave.

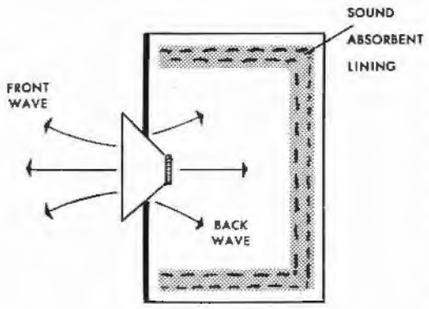
Correctly dimensioned and properly made, the infinite baffle is sure to provide good, clean bass down to the natural resonance of the speaker used. Obviously, the lower the speaker's resonant frequency, the better will it sound in an infinite baffle. Another point: in suppressing the back wave, the infinite baffle is, in a very real sense, reducing overall efficiency because it swallows up the back wave, i.e. half the total output of the speaker. This means, in practical terms, that for full "concert hall level" the speaker should be driven by an amplifier with fairly husky power reserves, in the 20-watts-and-over class. A speaker which naturally "peaks" near its resonant frequency will also peak in an infinite baffle. The baffle will do nothing to smooth out such boomy peaks. Neither will it pull down the bass response of the speaker below the speaker's natural resonance. These baffles don't coddle the speaker. They don't make it appear any better than it is. But the qualities of a really good speaker are displayed to fine advantage by such an "infinite" baffle.

Other enclosure types, such as bass reflex and folded horn enclosures, are to some extent capable of dabbing tonal cosmetics over the defects of imperfect speakers. These enclosures will be discussed in later issues. ■



Left: Without a baffle, back wave and front wave of speaker interfere at low frequencies, cancelling one another. The result is loss of bass and a thin, weak sound.

Right: In principle, an infinite baffle is any kind of absolute barrier between front and back of speaker to prevent back wave and front wave from meeting in mid-air. Wall-mounted speakers operate in this manner.



A box-type enclosure acting as infinite baffle absorbs troublesome backwave thanks to adequate interior space and heavy sound-abtorbent padding. (Heavy line symbolizes separation between front and back of speaker by the baffle. In actuality, mounting panels attach to the front of speaker frames.)

On the Hi-Fi Record

(*Continued from page* 3)

(Disc of the Month)

REVUELTAS: *Homage to Garcia Lorca; Planos — a Geometric Dance; Toccata without Fugue; Two Little Serious Pieces; Three Sonnets. Surinach, MGM Chamber Orch.*
M-G-M E 3496.

Superb is a word that scarcely does this release justice. The Mexican composer Revueltas, who died 17 years ago at age 40, was a potent composing personality. The eight works on this record reveal his high freedom in the use of rhythms, colors, textures and tunes—freedom that came from a superior creative imagination, evidently one of the best of this or any century.

Above all, Revueltas' scores are listenable. There are marvelously barbaric moments in "Homage to Garcia Lorca" and "Planos, a Geometric Dance," acid satire in "Two Little Serious Pieces," moving poetry in the quiet "Tres Sonetos" (Three Sonnets). Brilliant, close-to hi-fi sound rates the best in reproduction.

* * *

PROKOFIEFF: *Peter and the Wolf.* BRITTEN: *The Young Person's Guide to the Orchestra. Cyril Ritchard, narrator (Britten); Ormandy, Philadelphia Orch.*
COLUMBIA ML 5183.

High time, and welcome! Here now is the Philadelphians' statement of two famed orchestral showpieces which are also worthy and well-loved scores. These are perfect vehicles for the great orchestra to show off its near-unique abilities, as individual players and as an ensemble, under its able leader's direction. The "Peter and the Wolf" story is engagingly told by Cyril Ritchard. These scores ask much of the recording engineers in power and detail, and these gentlemen deliver the goods impressively.

(*Continued on page* 16)

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Outstanding Features of THE FISHER Model 80-T

■ The Model 80-T features extreme FM sensitivity—1.5 micro-volts for 20 db of quieting. ■ Full limiting on signals as low as one microvolt. ■ Separate FM and AM front ends, completely shielded and shock-mounted. ■ Separate tuning meters for FM and AM. ■ 72-ohm, plus exclusive balanced, 300-ohm antenna inputs for increased signal-to-noise ratio. ■ Supplied with AM loop and FM dipole antennas. ■ Adjustable AM selectivity. ■ AM sensitivity better than one microvolt for full output. ■ Inherent hum *non-measurable*. ■ Distortion below 0.04% for 1 volt output. ■ Four inputs. ■ Separate tape-head playback preamplifier (with NARTB equalization.) ■ Preamplifier-Equalizer has sufficient gain to operate lowest level magnetic cartridges. ■ Six choices of record equalization. ■ Multiplex and cathode follower outputs. Frequency response, on FM, within 0.5 db, 20 to 20,000 cycles. ■ Super-smooth flywheel tuning mechanism. ■ 16 tubes. ■ EIGHT CONTROLS: Selector, Variable AFC/Line Switch, Station Selector, Bass, Treble, Equalization, Volume, 4-Position Loudness Contour. ■ Self-powered. ■ DC on all audio filaments. ■ Beautiful brushed-brass front panel. ■ SIZE: 12¾" wide x 8¾" deep x 6" high. ■ WEIGHT: 21 pounds.

Prices Slightly Higher in the Far West

Ask for Complete Specifications and the New FISHER High Fidelity Folder.

EDITOR'S NOTE: *More than any other single factor, your loudspeaker determines what you hear. Nothing else makes so much difference in the sound of your hi-fi. A new speaker can be the greatest improvement you can accomplish at one stroke.*

This is the reason why we are devoting most of the space in this special issue to a thorough but simple discussion of loudspeakers—their theory and the practical facts of their design—by one of the best-known writers in the field. We hope that this will help our readers evaluate the new speaker models to be introduced this autumn.

LOUDSPEAKERS...

by H. H. FANTEL.

(Reprinted from POPULAR ELECTRONICS magazine)

A HI-FI SYSTEM is, in a sense, a musical instrument. Its purpose is to make musical sounds. The fact that the performing musicians "play" not in person but via electronic signals is actually beside the point. The resultant sound should still be that of their instruments—nothing more and nothing less.

As the actual voice of the system, its only "sounding" component, the loudspeaker combines within itself elements of electronic as well as musical instrument design. At this point, hi-fi leaves the realm of electronics and enters a tricky border region where electronics, mechanics, acoustics and musical esthetics overlap.

With these diverse elements affecting loudspeaker performance, there can be nothing cut-and-dried about hi-fi speaker design, just as the manufacture of fine musical instruments can never be reduced to an exact routine. No two loudspeakers sound exactly alike—even if their measurable characteristics are identical. Nor do two pianos or violins sound alike, regardless of their similarity. The fact that two loudspeakers sound differently does not necessarily mean that one is better than the other. It is simply that loudspeaker designers give audio fans their chance to choose among different "types of sound."

Basic Principles

A loudspeaker is an electromagnetic motor, pushing air out with each forward stroke and sucking air in with each backward stroke. These alternate movements are the mechanical equivalent of the electrical signal fed into the loudspeaker. The moving loudspeaker cone imparts corresponding vibrations to the surrounding air. In this way, the loudspeaker reconverts the electrical signal into audible sound.

Shown on page 8 are the necessary parts which go into making up a typical, modern high-quality loudspeaker. A coil connected to the amplifier output is slipped over the pole piece of a strong permanent magnet and held in a floating suspension, allowing it to move back and forth along the magnet. The magnetic force induced in the voice coil by the audio signal acts against the constant field of the permanent magnet, pushing the voice coil back and forth in rhythm with the audio signal. The cone, rigidly attached to the voice coil, then imparts this motion to the air. All these parts are assembled within a rigid and preferably non-resonant framework.

To call this mechanism "simple" would be misleading, although the operating principles are simple. The trick is to achieve precise correspondence between the highly complex audio signal and the actual cone movement over the widest possible frequency range. In musical terms, this means freedom from distortion and proportional loudness throughout the audio spectrum. It requires good engineering, careful selection of materials, painstaking workmanship and testing. Skill and ingenuity are the main ingredients of a good loudspeaker.

The objectively measurable factors affecting loudspeaker performance are:

This Electro-Voice coaxial speaker employs a separate horn tweeter for extreme highs, surrounded by a mid-range cone mechanically crossed-over to the large woofer cone.

power rating, damping, frequency response, directivity, and efficiency. These are the black-on-white specifications that distinguish good loudspeakers from poor ones.

Power Rating

The amount of audio power a speaker can deliver depends chiefly on the magnet. Most modern speakers use the same magnet material, Alnico V, an alloy named after its component metals: aluminum, nickel, and copper. Since the magnet material is identical, loudspeaker magnets can be compared in terms of their weight. Generally, the heavier magnet means higher power rating. The larger magnet provides a greater field of uniform magnetic force, permitting the voice coil to travel further on each excursion.

Theory and Fact

If a high-amplitude signal pushes the voice coil beyond the uniform magnetic field, the acoustic output of the speaker is no longer proportional to the input; and the result will be distortion.

Essentially, the power rating tells the wattage a speaker can absorb (i.e., how loud it can play) without distortion. Yet sheer loudness is not the only advantage of a high power rating. Even at moderate volume level music contains elements representing fairly strong power peaks. The energy content of deep sounds, like those from kettledrums, string bass, tuba, low organ pipes, etc., is considerable. To visualize these sounds, remember the large physical forces involved in producing them. Effective, life-like reproduction of such musical notes requires wide excursions of the loudspeaker. Insufficient magnet size tends to blur the clarity and reduce the impact of bass notes.

The power rating of a speaker should at least equal and preferably slightly exceed the power rating of the amplifier. Yet, while reserve speaker power might result in somewhat clearer sound, it must be kept in mind that the amplifier power will remain the limiting factor.

Damping

The damping or transient response of a speaker is largely a function of magnet size relative to the mass of the cone. Damping means the ability of the magnet to control the movement of the cone so that it neither overshoots its mark nor keeps jiggling after a sharp and sudden excursion. Good damping keeps the speaker motion strictly equivalent to the signal waveform. It prevents the speaker from distorting wave-forms by unrelated movements of its own cone.

Musically, the exact reproduction of waveforms through effective speaker damping means clarity of sound, clear definition of instrumental timbre, and transparency of orchestral texture. The characteristic tonal flavor of any musical instrument depends on its overtone structure, and on the initial transients in the formative phase of its tone: plucking, tonguing, striking, etc. A properly damped speaker retains these elusive aspects of music with dramatic realism.

Speaker damping is tested in the laboratory by measuring the square-wave response of the speaker. For the average audiophile, a more telling and more casual test is to play (in an acoustically "dead" room) some music with extremely sharp transients, such as drums and other percussion, crashing piano chords, or sudden entrances of full orchestra. If the speaker is well damped, the initial phase of these sounds comes through clearly and without a disturbing "hangover" blur that occurs when the speaker keeps oscillating randomly after the initial wide-amplitude excursinn. In orchestral music, the texture of even the heaviest sound remains amazingly transparent in a well-damped speaker.

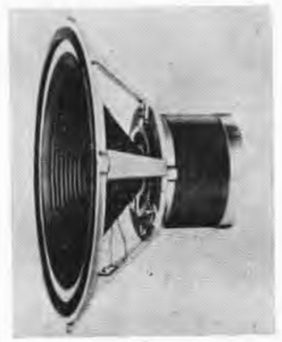
Fortunately, speaker damping is greatly aided by negative feedback in the amplifier, which, in effect, puts dynamic brakes on the speaker whenever it gets out of step with the signal by letting inertia take it for an unscheduled trip. A good feedback amplifier thus makes it possible to obtain good damping even from speakers with moderately sized magnets.

Frequency Response

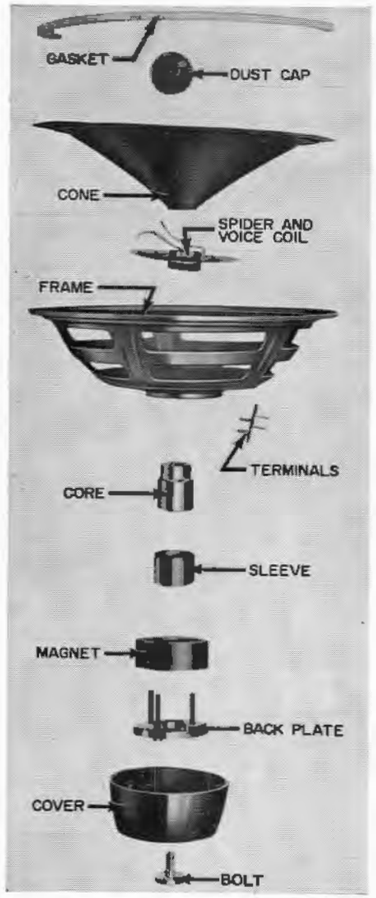
To do its job as the reproducing unit

Careful design makes this Stephens Trusonic 8-inch speaker a potent rival to much larger units. It is a marked success in improving the performance of small loudspeakers.

The James Lansing Model D123 is a high-quality single-cone wide-range speaker. Treble radiates from the light aluminum dome at center. Shallow depth is an advantage where space is tight.



The Wharfedale Super 12/CS/AL full-range speaker with its heavy magnet and cast-iron frame has long been renowned for reliable wide-range performance and smooth sound due to absence of resonance peaks.



Exploded view of General Electric's popular 1201-A extended range model shows the structural elements of a single-cone loudspeaker.

in a hi-fi system, a speaker must sound the whole frequency range from the lowest thud of the bass drum to the silver tinge of the piccolo. The various musical instruments are shaped and dimensioned for their own limited range, which seldom exceeds two and a half octaves with any degree of efficiency. But the loudspeaker must be "Jack" of all their trades and master of the whole audible gamut. To cover such a wide band of frequencies, the loudspeaker designers must play tricks on the laws of resonance.

The physical requirements for producing high tones are different from those for producing low tones. Sound sources are most efficient at or slightly above their own resonance, dropping sharply in efficiency below the resonance point. High tones are best emitted from small, light bodies, rigid enough to follow the rapid reversals of high-frequency oscillation without bending and flapping. Bass sources should be large and heavy, so that their natural resonance will be down toward the lowest frequencies they must reproduce. They should be compliant enough to follow the wide-amplitude motions which are characteristic of low frequencies.

The dilemma posed by these conflicting requirements has been solved in two ways: (1) by special cone treatment and suspension to extend the frequency range of a single cone; (2) by using separate speakers for bass ("woofers") and for treble ("tweeters"), and possibly a separate mid-range speaker.

Single-Cone Wide-Range Speakers

Just as the electronic circuit designer juggles inductance and capacitance to get his required bandwidth, the acoustic designer creates a wide-range loudspeaker cone by special combinations of mass (=inertia) and compliance/rigidity. Flaring the shape of the cone also extends the frequency range since it results in high rigidity at the apex (for treble) and relatively greater compliance at the rim, where the heavy bass motions are carried out.

These are ingenious and precisely calculated compromises with the laws of acoustics. Such single-cone speakers often provide very good audio quality at a cost much lower than that of an only slightly superior woofer and tweeter combination. A good speaker of this type is not recommended where the primary goal is extreme frequency response but where the listener derives his main enjoyment from good balance between a moderate spread of highs and lows.

An example of this type of design is the *Stephens* speaker shown on page 7. Its flared cone is quite rigid at the center so as to follow the rapid treble oscillations without flapping or the cone breaking up into distorting ripples due to limpness. At the same time, the soft cone suspension gives sufficient compliance at the outer cone region for the longer and slower bass excursions.

Many single-cone speakers use different cone materials concentrically within the cone. In fact, the most significant difference between various makes of otherwise similar speakers lies in the shape and materials of their cones. This largely accounts for the characteristic sound of a certain speaker. For instance, *Jim Lansing* and *Electro-Voice* single-cone speakers use aluminum foil at the cone apex for better treble radiation. The rigid, lightweight aluminum center is surrounded by an outer ring of heavier and more compliant cone material whose lower resonance and flexible suspension make it a suitable bass radiator. In effect, "division of labor" takes place between different areas within the same cone, the inner part for treble and the outer part for bass. Where different materials are used for the center and periphery, it is referred to as a "mechanical crossover."

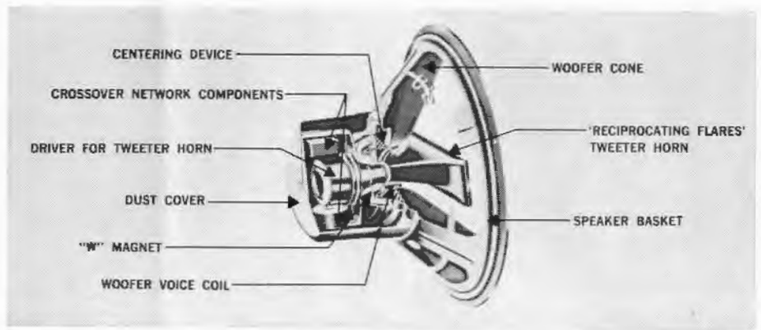
The physical separation of cone areas oscillating in different frequency ranges also reduces the danger of intermodulation on the cone. This insidious form of distortion occurs when the low bass frequencies are superimposed on the high frequencies in the same way that an audio signal is superimposed on an r.f. carrier in amplitude modulation.

Speaker Size

The size of a speaker is naturally related to its frequency response. Larger, heavier loudspeaker cones have greater mass and therefore a lower resonance than smaller, lighter cones. Since all oscillating systems, electrical as well as mechanical, operate best wthin the region of their natural resonance, the larger speakers are more efficient in the bass while the smaller speakers function better at higher frequencies. To produce effective low bass (i.e., to recreate in audio power the equivalent of the electrical amplitude of the sound pressure of the original instrument), large amounts of air must be moved.

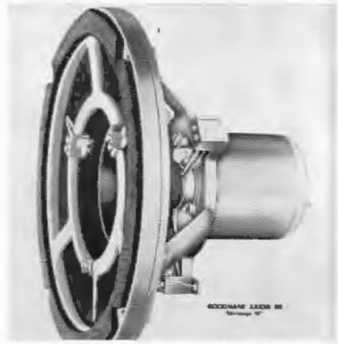
A large cone, say a 12" or 15" cone, naturally moves more air at a given amplitude of voice coil travel than a smaller cone. Consequently, a large speaker provides more effective bass radiation. A 15" cone, however, would be too heavy for good treble response, and therefore should only be used as a woofer to operate in conjuoction with a separate treble unit. Yet a wide-range 12" or 10" speaker, or even a well-designed 8" speaker, if properly baffled, often provides very adequate sound over most of the musically significant range, sacrificing only those extreme highs and lows which contain marginal musical data.

But the economy and good over-all quality of these single-cone speakers will hardly reconcile the more hard-bitten audiophile to the partial loss of his beloved frequency extremes: that deep velvet in the bass and that sheen in the treble. For these he must turn to coaxial speakers or separate multiple speaker systems.

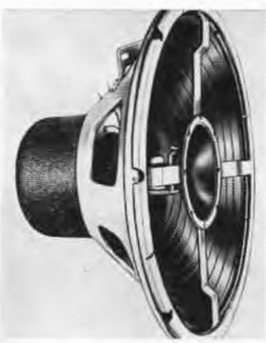


Phantom view of University coaxial speaker shows the elements of this compactly designed woofer-tweeter combination. Tweeter horn traverses the woofer cone. The flare of the horn is designed for wide-angle dispersion of treble.

Low cost and simplicity are the outstanding features of this Oxford coaxial model.



Floating cone suspension from elastic cantilevers anchored on the inner ring of the frame makes the Goodmans Axiom 80 a full-range speaker effective in bass despite relatively small 10-inch size.



Another inexpensive loudspeaker model combining a 12-inch woofer with a coaxially mounted cone tweeter is made by Quam.

Sonotone offers this inexpensive coaxial speaker with an oval cone tweeter to aid the distribution of highs.

Coaxial Speakers

The problem of obtaining wide-range response from a single speaker is neatly side-stepped (at added cost to the customer) by using separate speakers for treble and bass. Sometimes a third speaker is added to the system to cover the middle range. Since bass and treble speakers are known by such picturesque names as "woofers" and "tweeters," it has been seriously suggested that mid-range speakers should be called "squawkers."

A coaxial speaker is a two-way system with the tweeter mounted within the woofer. The two units operate independently, each having its own magnet and voice coil, each fitted with a cone or metal diaphragm suited to its own frequency range. Compared to equivalent systems consisting of separate speakers, the coaxial speaker offers space economy and convenience in mounting. The buyer also has the assurance that treble and bass elements are properly matched for smooth coverage of the entire range.

The Wigo Model CX 212B represents an economical approach to quality loudspeaker design. An extended-range single cone speaker is the basic unit, equipped with a rigid cast-aluminum frame, a very heavy magnet, and soft cone suspension. The dual tweeters are optional or can be added later if greater treble range and dispersion are desired.

Directivity

Low frequencies spread evenly in all directions. There is an increasing tendency for high tones to emerge from the apex of the speaker as a narrow beam, like a focused searchlight. This leaves wide areas of aural "shadow" at either side of the treble beam. Flared loudspeaker cones tend to be particularly directive with considerable high-frequency loss for listeners located too far off the center line.

To spread the entire frequency spectrum evenly throughout the listening area, several devices are used, such as domed metal diaphragms or various types of perforated frequency diffusers at the cone apex, flared tweeter horn shapes and multicellular tweeter horns. By means of such devices, most quality speakers now attain a high-frequency dispersion angle of 90° or more, i.e., more than 45° to each side of the center line. This means practically uniform dispersion of frequencies throughout the listening room from a single speaker if the speaker is placed in a corner looking diagonally into the room.

Graphs of the speaker's radiation pattern are sometimes included on the data sheet. But for a simple, rough check of directivity, simply walk in front of the speaker from one side of the room to

(*Continued on page 22*)

The French Have A Prize For It

A DISTINGUISHED committee of musicians and recording engineers meets annually in Paris to vote on what they consider the year's best among all the world's records. Their citation, the "Prix du Disque" is to the world of the phonograph what the "Oscar" is to movies.

Yet the prestige of the "Prix du Disque" possibly transcends that of the "Oscar" and ranks with the Pulitzer Prize in the hierarchy of awards for creative achievement. To devoted phonophiles it is indeed satisfying that the recording art receives recognition on the same level as literature.

The winners of the 1957 Prix du Disque were recently announced and those of the winning records available in this country are listed here.

Winners of The Grand Prix Du Disque, 1957

Grand Prize — In Memoriam

Walter Gieseking: 12 Etudes for Piano (Debussy). Angel 35065

Arturo Toscanini: Mendelssohn—Symphonies Nos. 4, 5. Victor LM 1851

Symphonic Orchestral

Classical: "In the Gardens of Mirabel"; Mozart—Eine Kleine Nachtmusik; Minuet, k.599; German Dances; Ode Funebre Magic Flute Overture; Cosi Fan Tutte Overture; Marriage of Figaro Overture; Impresario Overture. Columbia Sym., Walter. Columbia ML 5004

Tchaikovsky—Symphony No. 4. Leningrad Philh. Orch., Sanderling. Decca DL 9883

Modern:

Roussel—Bacchus and Ariadne; Honegger—Symphony No. 5; Ravel—Pavane for a Dead Infant. Boston Sym. Orch., Munch. Victor LM 1741

Hindemith — Symphonic Metamorphoses on a Theme of Weber; Schoenberg—5 Pieces for Orchestra. Chicago Sym. Orch., Kubelik. Mercury MG 50024

Janacek — Sinfonietta; Taras Bulba. Vienna Pro Musica Orch., Horenstein. Vox PL 9710

Instrument with Orchestra

Brahms — Double Concerto. Isaac Stern, Leonard Rose, New York Philh., Walter. Columbia ML 5076

Chamber Orchestra

Torelli—Concerti Grossi, Op. 8 Nos. 2, 3, 6, 9, 12. I Musici. Epic LC 3217

Dances in the Time of Shakespeare. Boyd Neel Chamber Orch., Dart Oiseau-Lyre OL 50127

Ballets

Stravinsky—The Firebird, Suisse Romande Orch., Ansermet. London LL 1272

Chamber Music

Violin Sonatas:

Mozart—Violin Sonatas Nos. 40, 42. Arthur Grumiaux, Clara Haskil. Epic LC 3299

Quartets:

Shostakovitch—Quartet No. 5 in G Sharp, Op. 92. Beethoven Quartet. Vanguard VRS 6021

Instrumental Solos

Piano:

Satie—2 Preludes; First Gymnopedie; Second Sarabande; Third Gnossienne; Next-To-Last Thoughts; Descriptions Automatiques; Tyrolian Turqe. Francis Poulenc, Piano. Columbia ML 4399

Bartok—Complete Works for Piano. Andor Foldes, piano. Decca DL 9801/4

Organ:

Bach—Orgelbuchlein, Vols. 2 and 3: Chorales Nos. 20-45. Gaston Litaize, organ. Ducretet-Thomson 93037

Harpsichord:

Bach—Well-Tempered Clavier. Book 2. Wanda Landowska, harpsichord. Victor LM 1152, 1708, 1820

Songs

Schubert—Die Winterreise. Dietrich Fischer-Dieskau, baritone; Gerald Moore, piano. Victor LM 6036

Opera Buffa

Mozart—Cosi fan Tutte. Soloists, Philharmonia Cho. & Orch., von Karajan. Angel 3522C

Strauss—Ariadne auf Naxos. Soloists, Philharmonia Orch., von Karajan. Angel 3532C

Opera

Verdi—Il Trovatore. Soloists, Robert Shaw Chorale, RCA Victor Orcha., Cellini. Victor LM 6008

Modern Operas

Prokofiev—Love for Three Oranges. Soloists, Chorus and Orchestra of the Ljubljana National Opera, Leskovitch. Epic SC 6013

(*Continued on page* 20)

For Sustained Satisfaction

Bozak

QUALITY LOUDSPEAKERS

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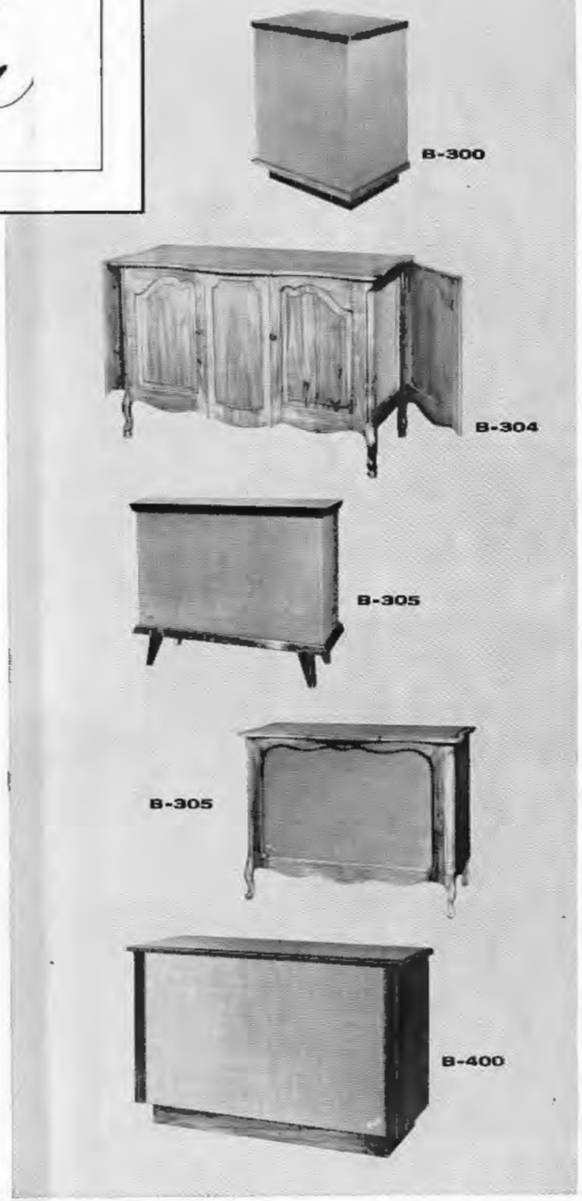
DISTINCTIVE CABINETRY



Hear them at your Franchised Bozak Dealer

THE R.T. Bozak SALES COMPANY

Ang Dawa, the leading native Sherpa of the expedition, became quite expert in handling the Magnemite recorder. Here, on the "Roof of the World", he checks some tapes of native music.

Hi-Fi High In The Himalayas

RECENT engineering progress has produced portable tape recorders capable of such fidelity as to satisfy even the most fastidious hi-fier. These battery-powered units, light enough to be slung around the shoulder like a slightly oversize camera, are now poking their electronic "ears" into the far corners of the world, bringing us oew knowledge of the music of remote areas on LP discs, or providing authentic sound tracks for documentary movies.

A "Magnemite" high-fidelity recorder (made by the Amplifier Corporation of America accompanied a recent expedition to the Himalayas led by Swiss explorer N. G. Duhrenfurth. These photographs taken by the explorers, convey some of the wonder and amazement at the native Nepaleses' first encounter with art of soond recording. ■■■

A Nepalese woman listens on earphones while another tries to eavesdrop along the wire. The idea that sound is transformed to electricity and become inaudible in that form cannot penetrate into their type of thought. Demons seem to them a more plausible explanation than electronics.

Delight and fascination is mirrored in these faces as the Nepalese listen to themselves on "playback."

NEW

New AM-FM Tuner puts wide band FM, wide range AM within your budget!

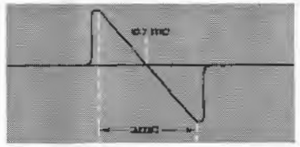
Completely new in styling . . . in engineering . . . in performance . . . the H. H. Scott model 300 AM-FM tuner embodies many new engineering features found nowhere else.

- Selectivity is superior to conventionally designed tuners because of the wide-band detector.
- Circuitry is completely drift-free . . . without the need for troublesome AFC.
- Cross-modulation is minimized so strong local stations do not appear at several points on the dial.
- AM section features wide-range circuitry. Reception is so good on fine AM stations you'll think you are listening to FM.

h. h. Scott

*Because of the demand for this new H. H. Scott tuner it may be temporarily out of stock. Be sure to get your order in soon.

Famous musicians like Metropolitan Opera singer Jerome Hines choose H. H. Scott components for their own homes.



Wide-band FM circuitry eliminates co-channel and adjacent channel interference — makes tuning drift-free.

Precision-ray tuning eye makes it simple to tune precisely on both AM and FM.

When you tune the H. H. Scott 300 to a weak FM station next to a strong one, it stays in tune perfectly. Ordinary tuners using AFC rather than Wide-Band, wander from the weak station to the strong, making it impossible to tune to weak stations. Smooth acting slide-rule dial is extra-long giving better band spread, so stations are easy to separate.

The new 300 is a perfect match to H. H. Scott's Best Buy Amplifier . . . the famous "99". This 22 watt complete amplifier is only 899.95. This means that for only $259.90 you can have a complete H. H. Scott system.

Additional Technical Information — Model 300

FM sensitivity 3 microvolts for 20 db of quieting; 2 megacycle wide-band detector; 10 kc sharp-tuned whistle filter; outputs — main, multiplex, tape; tuned RF stage insures high sensitivity and selectivity on both AM and FM; two position AM bandwidth for Normal and High Fidelity programs; size in mahogany accessory case 15½w x 5h x 12½d. $159.95. Choice of handsome accessory cases at $9.95 and $19.95.

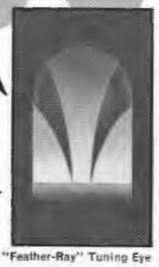
Prices slightly higher west of Rockies.

Shown below: H. H. Scott's new model 300 AM-FM tuner *Furniture and Accessories Courtesy Rapids Furniture, Boston.*

the Ultimate

0.95

0.95 μv sensitivity



"Feather-Ray" Tuning Eye

Sherwood
TUNERS

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Indeed the Ultimate! Under one microvolt sensitivity for 20 db FM quieting increases station range to *over* 100 miles with the newly engineered Sherwood tuners. Other important features include the new "Feather-Ray" tuning eye, a local-distance switch to suppress cross-modulation images, AFC switch, fly-wheel tuning.

MODEL S-2000 FM-AM Tuner . . . **$139.50** net
MODEL S-3000 FM only Tuner . . . **$99.50** net

Sherwood
Electronic Laboratories, Inc.

The "complete high fidelity home music center."

Disc Debut

THE CASADESUS FAMILY is probably today's most conspicuous musical clan. Robert, world-famous as a great pianist, is a recording veteran who is sometimes joined in the studio by his wife, Gaby and their son, Jean to play together works for two or three pianos. Now his uncle also gets into the act. Violinist Marius Casadesus just made his first Westminster discs, playing Handel's Violin Sonatas (XWN 18459) and a collection of old music by K. P. E. Bach, Gabrieli and Maschera on XWN 18130.

As founder and president of the French Society for Ancient Instruments, he and the accompanying string group play on viols rather than modern string instruments to render the tart tonal flavor intended by the composers. The strangely nasal sound of these ancient fiddles is to this calm, stately music what patina is to old silver. Connoisseurs cherish its atmosphere; and few confirmed Baroque fans will want to trade this version for the gloss of modern strings. ■■■

When music sounds like it is being played in the subway...you've got RUMBLE*. You can eliminate this extraneous, undesirable noise with a Rondine Turntable as the heart of your hi-fi system. Listen to a Rondine at your dealer. Compare its accuracy, silence, construction and styling with what you now own. It's like coming out into the sun...the difference is that great! Rek-O-Kut Rondine Turntables from $59.95. *Send for FREE colorful booklet and strobe disc.*

*produced by conventional phono motor—reproduced by speaker.

REK-O-KUT
HIGH FIDELITY TURNTABLES • TURNTABLE ARMS

ORIGINALITY JBL

its role in IMPROVING THE QUALITY OF MUSIC REPRODUCTION IN YOUR HOME

All of the JBL Signature loudspeaker components shown here have at least one thing in common — originality.

The JBL Signature D130, for example, is the only 15" Extended Range Loudspeaker made with a 4" voice coil. This gives tighter electrical coupling and more rigid mechanical coupling. It makes the D130 the most efficient, smoothest loudspeaker available anywhere. In its handling of transients and creation of presence the D130 is unexcelled.

The acoustical lens on the 175DLH and in The Hartsfield is the only completely satisfactory solution developed thus far to the problem of high frequency beaming. It is only available for use in the home with JBL Signature high frequency units.

The D123 with 3" voice coil is the only 12" Extended Range Speaker made with a configuration so shallow — 3⅝"—that it may be mounted between studding, flush with the surface of any standard wall or partition.

There is only one Hartsfield with its complement of mighty theater components — the 150-4C with straight-sided cone and 4" voice coil; the massive 375 with its low crossover at 500 cps, 4" voice coil and diaphragm, and complex precision phasing plug.

No other loudspeaker enclosures are offered in such a wide range of beautiful woods and flawless finishes. They immediately "belong" in the most meticulously furnished room.

Whatever innovations have been required in the way of original thinking and precision manufacture to make a true improvement upon sound reproduction . . . these have been built into JBL Signature loudspeaker components. Send for your free copy of the complete JBL Signature catalog so that you may choose the exact components to satisfy your needs.

"JBL" means **JAMES B. LANSING SOUND, INC.**

PENTRON, hi-fi tape recorder pioneer and leader, presents its completely new superbly designed recording instruments. Available monaurally or stereophonically (stacked, *in-line* heads) . . . and at down-to-earth prices. See and hear Pentron—dollar for dollar your best tape recorder buy!

New low prices from $109.95, net.

New Pentron features include *Finger-Flite* single knob control; dual, single and four speaker systems; increased power amplifier output; *Quik-Flip* speed change control; *Azmur-X* head adjustment with removable pole piece; plus 7 other new Pentron exclusives.

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Ask to hear hi-fi PENTAPES . . . "greatest sound ever found!"

PENTRON

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Tape Reviews

By Edward S. Bergamini

BRAHMS: *Symphony No. 1 in C minor. Bamberger, Frankfurt Opera Orch.*

CONCERT HALL SOCIETY BN-32

BRAHMS: *Symphony No. 4 in E minor. Bamberger, Frankfurt Opera Orch.*

CONCERT HALL SOCIETY BN-33

The flow and the spirit of Bamberger's Brahms are right—this is rich, Germanic, Brahmsy-sounding Brahms (reinforced by a resonant hall) conservative yet nearly always just of tempi and temperament. The spiritedness and power in the playing far outweigh the occasional want of fancy instrumental work in the virtuoso orchestra sense (the First Symphony fares more successfully here).

Both symphonies are good subjects for stereo—with the back-and-forth play between instrumental groups in the third movement of the E minor symphony a real pleasure to experience, spread out across one's living-room "stage."

Bamberger needs only to record the Third Symphony to complete his Brahms series. We look forward to its appearance.

* * *

BARTOK: *Concerto for Orchestra. Reiner, Chicago Symphony.*

RCA VICTOR ECS-9. Stereo.

Here stereo sound solves a problem that has needed solving ever since Bartok's triumphant human masterpiece received its first recording. This modern classic is an instrumental concerto in title. Its first discing (Columbia), with Reiner also on the podium, earned high praise from some for its stressing of the parts over the whole (the instruments delineated, even if this detracted from the effect of the over-all sound). Those who were convinced this was what Bartok wanted (possibly using that first record as a yardstick) have not really been satisfied by all subsequent disc versions. Later records of the Concerto indeed stressed the whole of Bartok's creation over its component parts. When Victor brought out Reiner's newer disc last year, it seemed the best compromise yet between the two extremes.

But it has taken the space-spread of stereo sound to resolve the issue. Bartok didn't write the Concerto to emerge from one loudspeaker. The work belongs on the concert stage, or its best living-room facsimile. In this stereo recording we are aware of both over-all sound and individual instruments. The two reproducing channels, spreading the sound out in "concert hall" perspective, mass the over-all orchestra sound while also separating its many voices.

Thus RCA Victor's tape leaves the disc versions behind, and is the first recording to render rightly Bartok's magnificence. May it convince many up-to-the-present doubters within their own living rooms. And need we add that this is the preferred performance, too?

On the Hi-Fi Record

(*Continued from page 5*)

TURINA: *Impressions of Spain, op. 20 (first series) and op. 47 (second series). E. Sanchez, piano.*

CAPITOL P 18039.

Evocations of Spain await the explorer who puts his needle down anywhere on this record. The fourteen selections vary in interest; we recommend particularly the fugal "The Mosque" (No. 6 in op. 47). The performance seems excellent; the piano recording good but not outstanding.

* * *

BACH: *Concerto in D minor.* HAYDN: *Concerto in D. Sylvia Marlowe, harpsichordist, and conducting the Concert Arts Chamber Orch.*

CAPITOL P 8375.

These performances, with Miss Marlowe in the role of harpsichordist-conductor, have a fine sportive energy and excitement. And in the Bach's linear writing, harpsichord and orchestra weave through each other most persuasively. Excellent sound.

* * *

ARNOLD: *Homage to the Queen. Irving Philharmonia Orch.*

RCA VICTOR LM 2037.

For ballet fans. The talented young

(*Continued on page 18*)

Why you need every feature of these

NEW UNIVERSITY FOLDED-HORN ENCLOSURE KwiKits

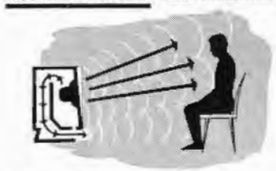
Because . . . in performance, mechanical design, construction and ease of assembly, these new KwiKits are unquestionably the *very finest* enclosure kits—at any price!

KEN-12 For 12" speakers & systems 15½"D x 21½"W x 29½"H — $44.75 USER NET

KEN-15 For 12"/15" speakers & systems 18½"D x 29"W x 35¼"H — $59.50 USER NET

Adapter for mounting 12" speakers in KEN-15 — $1.50 User Net

ROOM-BALANCED PERFORMANCE



KwiKit acoustic design and tilted baffle combine direct speaker radiation and compensated rear horn loading in a way that blends bass, middle and treble ranges perfectly . . . for *uniform* response throughout the listening areas of a room.

HEAVIER CONSTRUCTION

Heavy ¾" first grade, fully cured lumber for top, bottom, sides and back . . . not flimsy ½" wood commonly used in "kits." Bigger, sturdier—*as much as 30% heavier* than others in the same price class. Eliminates spurious resonances so detrimental to achieving richer, cleaner bass reproduction.

PRECISION MECHANICAL DESIGN

Exterior and interior elements, even the cleats, fit snugly within close tolerance "rabbeted" grooves. Gluing and screwing of each piece results in reliably air-tight, permanent joints. No nails used. No pencil markings necessary. Mittering and plenty of glue blocks and bracing for truly rigid construction.

PLACE ANYWHERE IN ROOM

Underside view shows how advanced design, self-contained folded horn extends to the *front* of the cabinet, projecting low frequencies out into the room . . . not back into a corner, splashed against the walls. Small slot in base is resistively controlled vent which equalizes woofer diaphragm excursions in compression chamber. KwiKits are therefore independent of room furnishings, shape or placement and can be used against a flat wall, in a corner . . . even up in the air!

FOOLPROOF ASSEMBLY

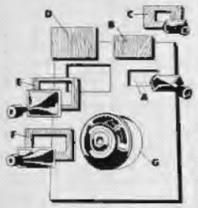
All pieces are pre-cut and pre-drilled . . . *engineered* to go together quickly. All you need is a screwdriver! Baffle board is pre-cut . . . blank plugs and adapters supplied for easy installation of additional components as your system expands.

Your KwiKit includes all required hardware, plastic wood, glue, sandpaper, Tuflex insulation, easy-to-follow instructions and . . . special attention is given to packaging of KwiKits to insure safe, intact delivery to your door.

PROFESSIONAL RESULTS

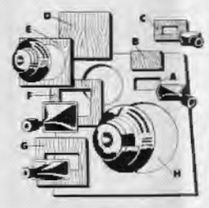
There's no end of decorative treatment you can give your KwiKit enclosure. Genuine Korina veneer is same as used in fine furniture, and provides a beautiful finish. Decorative front mouldings have been designed to complement and enhance your present decor. Exquisite, textured grille fabric is equally at home in settings of any period and is acoustically correct to prevent high frequency attenuation.

KWIKITS . . . THE PERFECT COMPLEMENT FOR P.S.E.*



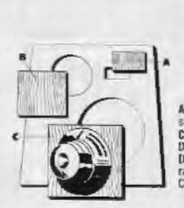
A—Hole cut out for HF-206.
B—Blank plug supplied when tweeter isn't used.
C—Adapter supplied cut out for UXT-5.
D—Blank plug supplied.
E—Adapter supplied cut out for 4409.
F—Adapter supplied cut out for H-600 horn.
G—Takes 312, UXC-123, Diffusicone-12, UXC-122, Diffaxials, 6200, 6201 wide-range speakers and C-12W woofer.

MODEL KEN-12
takes any 12" wide-range or woofer cone speaker and any tweeter or mid-range speakers.



A—Hole cut out for HF-206.
B—Blank plug supplied when tweeter isn't used.
C—Adapter supplied cut out for UXT-5.
D—Blank plug supplied.
E—Adapter supplied cut out for C-5W or Diffusicone-8.
F—Adapter supplied cut out for 4409.
G—Adapter supplied cut out for H-600 horn.
H—Takes 315-C, 6303, Diffusicone-15 Diffaxials, and C-15W, C-63W woofers.

MODEL KEN-15
takes any 15" wide-range or woofer cone speaker and any tweeter or mid-range speakers.



A and B—Blank plugs supplied.
C—Takes 312, UXC-123, Diffusicone-12, UXC-122 Diffaxials, 6200, 6201 wide-range speakers and C-12W woofer.

MODEL KEN-15
takes any 12" wide-range or woofer cone speaker when 12" adapter board (optional) is used.

* University's Progressive Speaker Expansion Plan

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UNIVERSITY LOUDSPEAKERS, INC.

LISTEN *University sounds better*

On the Hi-Fi Record

(*Continued from page* 16)

English composer's work presents the four elements, Earth, Water, Fire, and Air, paying homage to Elizabeth II, Queen of England (its first performance occurred on the night of her coronation). Most tuneful and listenable stuff, with the Philharmonia very well recorded under Robert Irving's authoritative direction.

TCHAIKOVSKY: *The Nutcracker, excerpts. Fiedler, Boston Pops Orch.*
RCA VICTOR LM 2052.
HI-FI FIEDLER: RIMSKY-KORSAKOV: *"Le Coq d'Or" suite.* ROSSINI: *"William Tell" Overture.* TCHAIKOVSKY: *Marche Slave. Fiedler, Boston Pops Orch.*
RCA VICTOR LM 2100.

In each case, the music and the recording show each other off. These discs will dazzle on your new hi-fi set; the works are standard additions to one's record library. Fiedler's "Nutcracker" excerpts are well chosen; we're glad he included the waltz-time Winter Scene (See Band Two on Side One) The colorful "Coq d'Or" is given with much tenderness here.

* * *

SOIREE TZIGANE: *Hungarian Csardas. Hungarian National Ballet Orch.*
Vox VX 25330.

The Hungarian Csardas (seven of them are here recorded) is a fetchingly colored dance whose form usually includes a slow introduction and quick main section. Its character often is rhapsodic and improvisational, its instrumentation includes the use of the cymbalom (a stringed instrument played with felt- or leather-covered sticks). The performers are professional, their performances authentic, and their recording all one could ask for.

* * *

BRAHMS: *Violin Sonatas No. 1 in G, op. 78; No. 2 in A, op. 100. A. Rosand, violin; E. Flissler, piano.*
Vox PL 10090.

An artist can set forth a work only in terms of what he can see in it. The 28-year-old violinist brings good taste and remarkable technique to two melodious scores; pleasing with them now, he may move us when he performs them in later years. His accompaniment matches him in tasteful understatement. Vox has recorded him very well indeed.

* * *

ALFVEN: *Swedish Rhapsody ("Midsommarvaka").* GRIEG: *Peer Gynt Suite No. 1.* SIBELIUS: *Finlandia. Ormandy, Philadelphia Orch.*
COLUMBIA ML 5181.

These well-loved scores seem to be a thoughtful reassembling by Columbia of the contents of two ten-inch releases (AL 9 and AL 35). Alfven's "Midsommarvaka" incorporates Swedish and other folksong-stuff attractively.

* * *

BRUCH: *Violin Concerto No. 1 in G minor.* TCHAIKOVSKY: *Violin Concerto in D. A. Grumiaux; B. Lescovich, Vienna Symphony.*
EPIC LC 3365.

The estimable Mr. Grumiaux adds to his string of Epic releases with highly eloquent and tasteful performances of two justly popular concertos. For elegance outdoes Campoli, reviewed elsewhere in this issue. Well molded accompaniments by Bogo Lescovich, whom we remember as the director of the Epic Prokofieff "Love for Three Oranges." Very clean, easy-to-listeu-to recorded sound.

(*Continued on page* 19)

BACH: *Violin Concerti No. 1 in A minor, No. 2 in E. A. Grumiaux, violin; Guller Chamber Orch.*
EPIC LC 3342.

Grumiaux's musical projections are dependably both engaging and interesting; most satisfying on first hearing, they promise to wear well. His performances of the two best-known Bach violin concerti are most welcome. We reduced treble, listening to Epic's bright, well-balanced sound.

* * *

CRESTON: *Dance Overture. Haufrecht: Square Set.* HIVELY: *Summer Holiday.* SAN JUAN: *La Macumba. Antonini, Oslo Philharmonic Orch.; Orch. of the National Academy, St. Cecilia, Rome.*
COMPOSERS RECORDINGS CRI 111.

Of these very listenable contemporary American scores, we are most attracted to the bright orchestral colors and rhythmic life of the Creston overture and the more intimate, calmer Hively "Summer Holiday." The sound is most reliable, the Oslo-performed Crestoo given a more remote-styled pickup than the other works, done in Rome.

* * *

STRAUSS: *Ein Heldenleben (A Hero's Life). Bohm, Saxon State Orch., Dresden.*
DECCA DL 9927.

We believe we find Bohm's statement of this score more continuous in its grip and more convincing in its expression than any since the first recorded statement by the person the score was dedicated to, Willem Mengelberg. (We note the break between record sides splits a most important climactic moment; this the Mengelberg reissue happily avoids). The orchestra is very able, the sound of it rich, dark, smooth.

* * *

SEGOVIA AND THE GUITAR: *Works by L. de Narvaez, Dowland, A. and D. Scarlatti, Espla, and Manen. Segovia, guitar.*
DECCA DL 9931.

Beautifully recorded, Decca's eleventh Segovia record leaves one at a loss to describe the many-faceted artistry of this remarkable musician and superb performer on the classical guitar. For a starter, try Side One, Band three, for Segovia's transcription of two expressively powerful pieces by Alessandro Scarlatti, a Preambulo and Gavota.

(*Continued on page* 21)

OXFORD HI-FIDELITY SPEAKERS

Optimum Range at Minimum Cost!

Engineered for finest performance at minimum cost, OXFORD HI-FI SPEAKERS have a flat response throughout the audible range and are capable of handling the range of power inputs necessary for finest high fidelity reproduction.

COAXIAL SPEAKERS

C12J408 ..... 12"
Frequency response: 40-15,000 cps.

C15L608 ..... 15"
Frequency response: 30-15,000 cps.

EXTENDED RANGE SPEAKERS

HF8JB ..... 8"
HF10JB ..... 10"
HF12JB ..... 12"
HF12LN ..... 12"
HF15LN ..... 15"
Frequency responses: 70-10,000 cps.

FULL RANGE SPEAKERS

F8J408 ..... 8"
Frequency response: 50-13,000 cps.

F12J408 ..... 12"
Frequency response: 50-12,000 cps.

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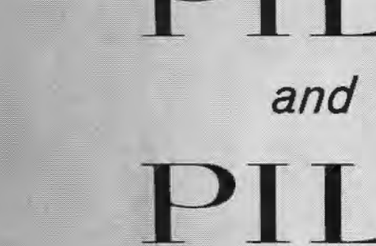


FA-550 FM-AM

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

Dimensions: 4¾"h x 14½"w x 10¼"d.

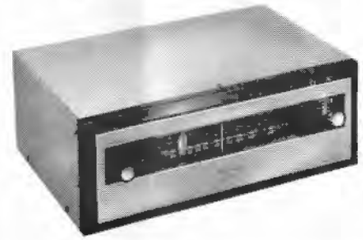
$159.50 Complete

FA-540 FM-AM

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

Dimensions: 4¾"h x 13"w x 8¾"d.

$109.50 Complete



FM-530 FM Only

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

Dimensions: 4¾"h x 13"w x 8¼"d.

$89.50 Complete

Make your own performance test of these tuners at your Pilot dealer.

C. Robert Fine, chief engineer on the Mercury Olympian classical recordings, monitors master tapes after a recording session.

Boon to The Tape Buyer

THE STEREOPHONIC recorded tape field woke up with a bang not long ago when Mercury Record Corporation announced its entry into the field. Almost overnight a host of manufacturers followed Mercury's lead, adding new items to the repertoire and introducing new performers to the home concert hall.

At the same time, several manufacturers produced lower-priced stereo tapes. Within the space of a few short months, the barriers of limited repertoire and high prices were broken. Now, there's more choice than ever before.

Small Record Labels Open Stereo Market

At first the demand for stereo tapes was met by several small record companies. Their pioneering efforts were highly successful but the total output was not adequate to the demands of the stereo enthusiast, especially in terms of classical repertoire. More than that, much classical material available was without benefit of major orchestras or artists.

It was generally recognized that stereo could not come into its own until the big companies joined the fold. Significant contributions to the repertoire were made by Concert Hall Society, Sonotape, and several other record companies. Livingston and Phonotapes, tape manufacturers who had contracted with small record manufacturers, also did much to develop the field. RCA Victor was the first major company to make the plunge. The other members of the so-called Big Six adopted a wait-and-see policy. For the next few years stereo enthusiasts prayed for just one more major company to issue stereo tapes. Once that happened, the rest of the big boys would have to climb aboard the stereo bandwagon.

The release of the Mercury tape repertoire put this theory to the test.

Among the more recent arrivals in the field are:

* Angel Records
* Audio Fidelity Records
* Capitol Records
* Columbia Records
* Contemporary Records
* Counterpoint Records (nee Esoteric)
* Experiences Anonymes
* Good Time Jazz
* Klipschtape
* Mercury Records
* Montilla Records
* Stere-O-Tone
* Tradition Records
* Urania Records
* Vanguard Records
* Verve Records (Reel O' Gold Tapes)
* Zodiac Recording Co.

Then two manufacturers—Phonotapes and Sonotapes—announced a new, lower-priced stereo line, selling for $4.98 and $6.95 respectively. The idea is to market shorter works among the lighter classics and popular works, one to a reel, at minimal cost. The buyer can build his collection with only those shorter works he really wants (rather than having to settle for the potpourri which appears on many LP collections), spending little more than the cost of a 12" LP record.

Winners of The Grand Prix Du Disque

(*Continued from page* 10)

Musicals

Weill—The Threepenny Opera: Incidental Music. Soloists, Vienna State Opera Orch. & Cho., Adler.
Vanguard VRS 9002

Recitals

Renata Tebaldi, Recital No. 2.
London LL 1354

Ezio Pinza Sings Mozart and Verdi Arias. Victor LM 1751

Ancient Vocal Music

Machault—Notre Dame Mass. (Pro Musica Antiqua, S. Cape)
Decca Archive ARC 3032

Cantatas

Poulenc—The Masked Ball (Pierre Bernac and Soloists of the Paris Opera, Poulenc at piano)
Westminster XWN 18422

Oratorios

Haydn—The Creation. Seefried, Holm, Borg, Berlin Philharmonic, Markevitch.
Decca DX 138

Documentary

The Birth of a Performance. Bruno Walter and the Columbia Symphony Orch. rehearse and perform Mozart's Symphony No. 36. Columbia SL 224

On the Hi-Fi Record

(*Continued from page* 19)

VIVALDI: *The Seasons. Witold, Ensemble Instrumental Sinfonia.*
LONDON INTERNATIONAL TWV 91157.

This respectable though romantic "Seasons" uses forces nearer the size of, say, the Giulini-Philharmonia version than the various chamber orchestra performances. The Giulini is still preferred for its force and flavor; its string sound is sweeter than the present release, too.

* * *

LISA DELLA CASA: *Operatic Recital. Handel and Mozart arias. Della Casa, various conductors, Vienna Philharmonic.*
LONDON LL 1576.

Floating purity, womanly warmth of tone are this soprano's stock in trade. "Non mi dir" from Mozart's "Don Giovanni" being a principal beneficiary here. The five arias from Handel's "Giulio Cesare" make worthwhile hearing. A pleasing collection, set forth in London's wonted ruddy sound.

* * *

VIVALDI: *Clavier Concerti, arr. Bach. Marlowe, harpsichord.*
CAPITOL P 8361.

Marlowe's performances of these Bach Vivaldi settings are objective yet revealing, with a good timing sense an additional asset. Especially ear-catching are the D major concerto, op. 3, no. 9; and the slow movement of op. 4, no. 1. Smooth, ample-bassed recording shows off the harpsichord at its most kindly.

* * *

FRESCOBALDI: *Canzone, correnti, gialliards, variations. P. Wolfe, harpsichord.*
EXPERIENCES ANONYMES EA 0022

What can one say about these simple and treasurable works except that, as played here simply and unaffectedly by Paul Wolfe, they exist to be enjoyed? The variations on Band Four of Side One show with special clarity the very direct appeal of this 17th-century virtuoso and composer. Excellent sound.

FIESTA IN HI-FI: *McBride: Mexican Rhapsody. Nelson: Savannah River Holiday. Mitchell: Kentucky Mountain Portraits. Vardell: Joe Clark Steps Out. Hanson, Eastman-Rochester Symphony.*
MERCURY MG 50134.

These are gay and brilliant exercises by contemporary Americans, performed and recorded just that way. Especially jaunty and alive is Ron Nelson's "Savannah River Holiday." Unprofound, easy-listen music.

* * *

BARTOK: *Hungarian Sketches, Roumanian Folk Dances.* KODALY: *Hary Janos Suite. Dorati, Minneapolis Symphony.*
MERCURY MG 50132.

This is a first recording of "Hungarian Sketches," Bartok's own orchestral transcription of five earlier piano pieces. They do well in orchestral garb; we "get the point" of the lovely "Evening in the Village" taken from "Ten Easy Pieces" (1908) more completely than in any hearing of the original. Dorati's performances are affectionate and attentive to detail throughout this brilliantly recorded issue.

(*Continued on page* 22)

ANNOUNCING THE NEW

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Loudspeakers

(*Continued from page 9*)

the other. No great treble loss or other change in tonal balance should be noticeable within the normal listening sector. The walls of the room must not be too reflective or reflected high frequencies will be heard.

Efficiency

Speakers differ greatly in efficiency—the quantity of sound (loudness) produced from a given wattage. Efficiency is determined by many factors, such as the strength of the permanent magnet field and the mass inertia of the cone. Chiefly, however, it is a function of the ratio between the resistive and the inductive reactance components that make up the voice coil impedance. Only the inductive reactance component produces the magnetic interaction resulting in movement of the voice coil. The resistive component simply burns up audio energy, converting it into heat.

Since the total voice coil impedance is usually only about 4 to 16 ohms, the parasitic resistive component accounts for a large share of this total impedance, thus reducing the efficiency of the speaker. Some speakers overcome this difficulty by using an up-ended lightweight aluminum ribbon as a voice coil. The ribbon offers more conductive cross-sectional area and hence less resistance. Thanks to its light weight, such a voice coil further improves efficiency by providing less mechanical inertia to oppose the rapid reversals of motion at high frequencies.

An efficient speaker produces a given degree of loudness with less amplifier gain, permitting the amplifier to be operated at low power levels for minimum distortion. Voice coil diameter is often stated on the data sheet. As a general rule, a larger diameter means greater efficiency since the voice coil then acts against a larger periphery at the inner cone rim.

The Final Factor

At the outset, the loudspeaker was described as an unpredictable hybrid of musical art and electronic technology. And where music enters the picture, it throws the monkey wrench of subjective tonal impressions right into the neatest engineering calculations. Therefore, let your own ears and tonal taste be final arbiters in the choice of a loudspeaker. After all, a loudspeaker is not a piece of impersonal, calibrated equipment guaranteed to jiggle your eardrums with a flat decibel curve through all audible frequencies. Rather, it is a many-voiced companion in your home, to bring you music for many years and for many moods. ■ ■ ■

On the Hi-Fi Record

(*Continued from page 21*)

TCHAIKOVSKY: *Violin Concerto. Campoli; Argenta, London Symphony.*
LONDON LL 1647.

VIRTUOSO PROGRAM. SAINT-SAENS: *Introduction and Rondo Capriccioso, Havanaise.* SARASATE: *Zigeunerweisen.* WIENIAWSKI: *Legende. Campoli; Fistoulare (Saint-Saens), Gamba (Sarasate, etc.), London Symphony.*
LONDON LL 1625.

Campoli brings eloquence and energy to the Tchaikovsky concerto, and to the shorter concert works. His version of the popular concerto takes its place high in the competitive ranks. The sound on both records is richly spacious; there's no stringedginess in this worthy two-sided version of the Tchaikovsky. ■ ■ ■

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New Lightweight Construction The microscopic precision and strong, lightweight construction of General Electric's new VR II assures you continued pleasure and satisfaction under the most exacting conditions.

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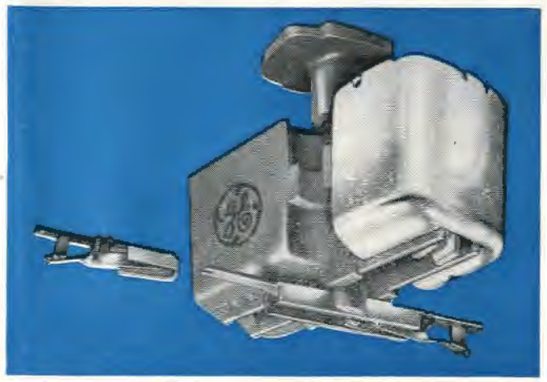

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