

tape recording

HOW TO RECORD CHORAL GROUPS

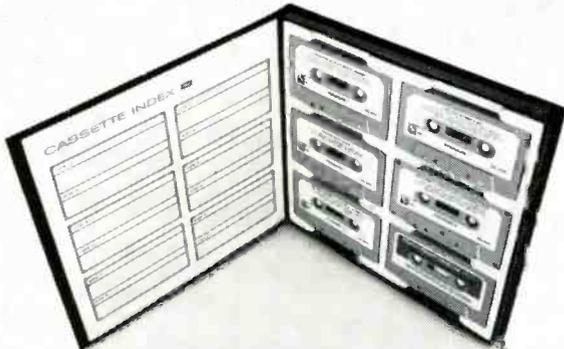


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MARCH-APRIL, 1969

VOLUME 16, NO. 4

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NOTES

Michigan Magnetics Promotes New Head Design for Cassette Reverse

VERMONTVILLE, MICH.—Michigan Magnetics has a magnetic head assembly which the company hopes will produce large numbers of automatic reversing stereo cassette decks. According to Michigan Magnetics VP W. A. Anderson, the new assembly consists of a combination record-playback head on a cam shaft and two mini-erase heads, one on either side. The head shifts automatically at the end of a cassette tape and locks into position to record or play back in the opposite direction. Anderson said that a metal foil at the end of the tape, silence or several other triggering devices could be used.

He acknowledged that at the moment, the company has no takers for the new head, which is only in prototype form. "However, we could be tooled up and in production in about 26 weeks, and units incorporating the head assembly could be in stores another two to three months after that."

The head assembly including the mounting plate measures 2 1/8" in length, 3/4" in width and just over 1/2" in height. It claims a frequency response of 100-10,000 cps \pm 10 db, crosstalk of -35 db and a signal-to-noise ratio of 50 db. Anderson says the unit thus is small enough to fit into virtually any dual capstan cassette recorder or player, though he expects it to be used mainly in stereo decks. "The unit is small enough to fit into a Carry-Corder type of unit, though the OEM price of \$11 to \$13 would make it prohibitive for all but the best units. It will fit easily into most of today's decks."

The record-playback head is somewhat smaller than a standard cassette stereo head, but Anderson claims that the heart of the system is the shifting mechanism which locks the head into proper alignment on the shaft whether in upper or lower playing position. In addition, the erase heads are smaller than conventional ones, and utilize a bias current of 70,000 cps. He noted that the three heads must be manufactured to fit holes currently cut out for two heads on most machines.

That means mounting the erase heads as two small projections on either side of the playback head and using the central playback hole on the recorder.

Michigan Magnetics sees the assembly as a means of upgrading component system playback decks, though Anderson says it won't be offered as a do-it-yourself kit to hobbyists. "A technically-oriented layman could convert his machine, but it isn't easy. We see the market primarily as one for original equipment manufacturers who will design machines around the head."

The company has tested the unit not only with low-noise cassette tapes, but with such new tapes as TDK's SD and DuPont's Crolyn. The results: "They greatly improve the output of the head, and its performance." Anderson declined to specify the results in detail, but agreed that a combination of the new head and the new tape types could mean uninterrupted stereo music for 90 minutes with a reasonable degree of fidelity.

First public viewing of the new head will be at the Audio Engineering Society Show in New York soon. The company at that time hopes to demonstrate a mockup for engineers from prospective manufacturing firms, and to explain how the assembly can be engineered into new recorders. "The system can also be adapted for four-track stereo or four-track mono cassette operation," he concluded.

Ampex Entering Record Industry

NEW YORK — Ampex Corp. has announced its entry into the record business. Don Hall, Ampex vice president and general manager of the Ampex Stereo Tapes division, a pioneer in the pre-recorded tape business, said Ampex is in the process of forming a subsidiary called Ampex Record Company. Headquartered in New York City, the company will begin operations this month.

Lawrence K. Harris, former vice president of Elektra Records has been named president and general manager of the subsidiary, reporting to Hall. Ampex Records will produce and market single and LP discs in a variety of styles, primarily popular music. Initial releases are planned in the near future.

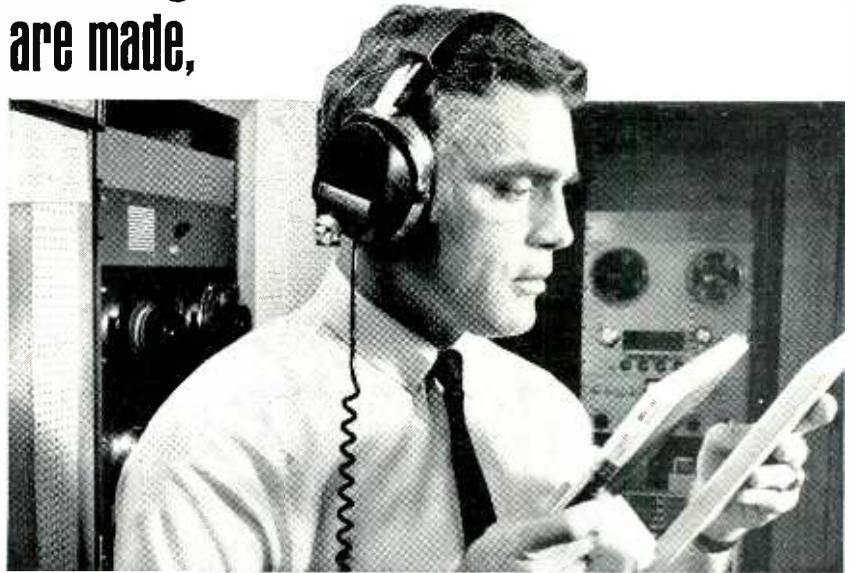
Cassettes Adapt To Eight Track

DURHAM, N.C. — The Weltron Company has introduced a new tape adaptor called the C/8 Coordinator, designed to adapt tape cassette machines to eight-track stereo cartridge units for better sound reproduction.

Weltron's C/8 Coordinator enables owners of cassette mechanisms to attach them to any audio equipment which has an earphone jack, such as radios, television, phonograph, etc., allowing greater fidelity.

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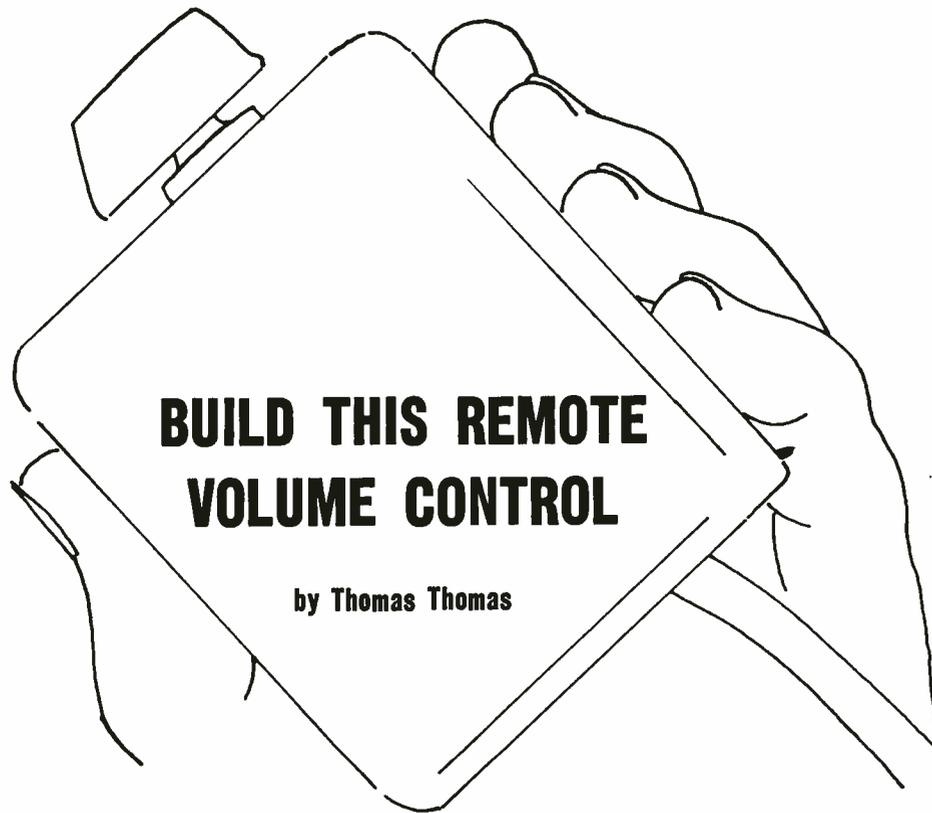
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BUILD THIS REMOTE VOLUME CONTROL

by Thomas Thomas

Of all the many devices I've made up for my recorders in the past fifteen years, this simple extension volume control unit is my favorite. My greatest delight, bar none! In fact, I use this little step-saving accessory more often than all the rest put together. Now, though the assembling and the wiring of this auxiliary attachment is very simple, I soon discovered that adding an "extra" volume control into a recorder's circuit CAN be an exasperating business. The main problem, which had me bothered for quite some time, is in discovering a control that can be added without materially "coloring" the sound. Some controls actually seem to *muffle* the speaker sound a bit, while others emphasize the bass or the treble unduly. Enough so that I was never quite happy and fully satisfied until I finally came across just the perfect little L-Pad attenuator that didn't upset the original sound one little bit (that I could notice). But more about this unit in a moment; first let's investigate why a remote volume control *for a recorder* might even be necessary. (And by the way, I'm talking about controlling the PLAYBACK volume only, and not the recording volume.)

Personally, I especially enjoy making candid recordings. I don't hide the mike—it's out where everyone can see it—but I often record by the hour when friends are visiting, and then afterwards I edit the "choice" material down to an interesting 20 minutes or so. But the big problem, when playing this edited tape back to my friends later, *is that the play-*

back volume usually varies most annoyingly. I found myself constantly jumping up and crossing the room to my recorder to boost the volume for one part, then cutting it down hastily for another, etc. But now, with the volume control in my hand, I can put on a far neater "show." It's a feature much like the remote *focusing* control that some of the more advanced 35mm color slide projectors boast nowadays. Without moving from your easy chair, you can "sharpen up" any slide that needs it to everyone's greater pleasure. And the same with recordings.

But that's not the best part! Or its greatest use! My favorite way of editing recordings (or, in fact, doing any tape listening at all) is with my eyes closed and with me stretched out flat on my back on our den couch, with the recorder on the other side of the room... and with the little remote volume control unit resting handily on my chest. If my wife sticks her head in the door or calls out from the kitchen, I can quickly and easily turn the volume down while we talk. Or conversely, if my two rather rambunctious boys are making so much noise that even closing the den door with a well-aimed pillow doesn't help, I just boost the volume until I drown them out.

Finally, this useful control is also a big help when I copy tapes. Normally, when I hook up two of my recorders together so I can copy from one tape to another, *the monitor playback volume is a bit too loud for comfortable listening.* This is especially true when someone else in the family is nearby, working

Fig. 2, upper left: The knob-controlled L-Pad housed in its little case connects to up to twenty-five feet of 4-conductor cable ending in a Cinch-Jones 4-conductor plug "C." Optionally, you can also wire in a phone jack "X" that automatically disconnects the recorder's speaker when you plug in a remote loudspeaker or set of headphones. Fig. 3, upper right: As you can see, only a few parts are needed for this simple hookup. "A," "B" and "C" (and "X" optionally) are used to make up the complete unit shown in Fig. 1. Female socket "D" and DPDT toggle switch "E" are mounted right on the recorder case itself, and wired into its circuit via the two wires going to the L-Pad into the speaker circuit in such a way that it can be used from 15 to 25 feet away. Flip the toggle switch one way and your recorder works normally, flip the other way and the L-Pad can plug in and take over. Fig. 5, lower right: The housing was made from 1/4" Masonite pieces glued together as shown. Height is 3", width is 2 1/4", depth is 1 3/4". This was a very convenient size to hold comfortably in my hand but note that space was left for the phone jack "X." If you won't be needing this optional part, then of course the housing may be made smaller.

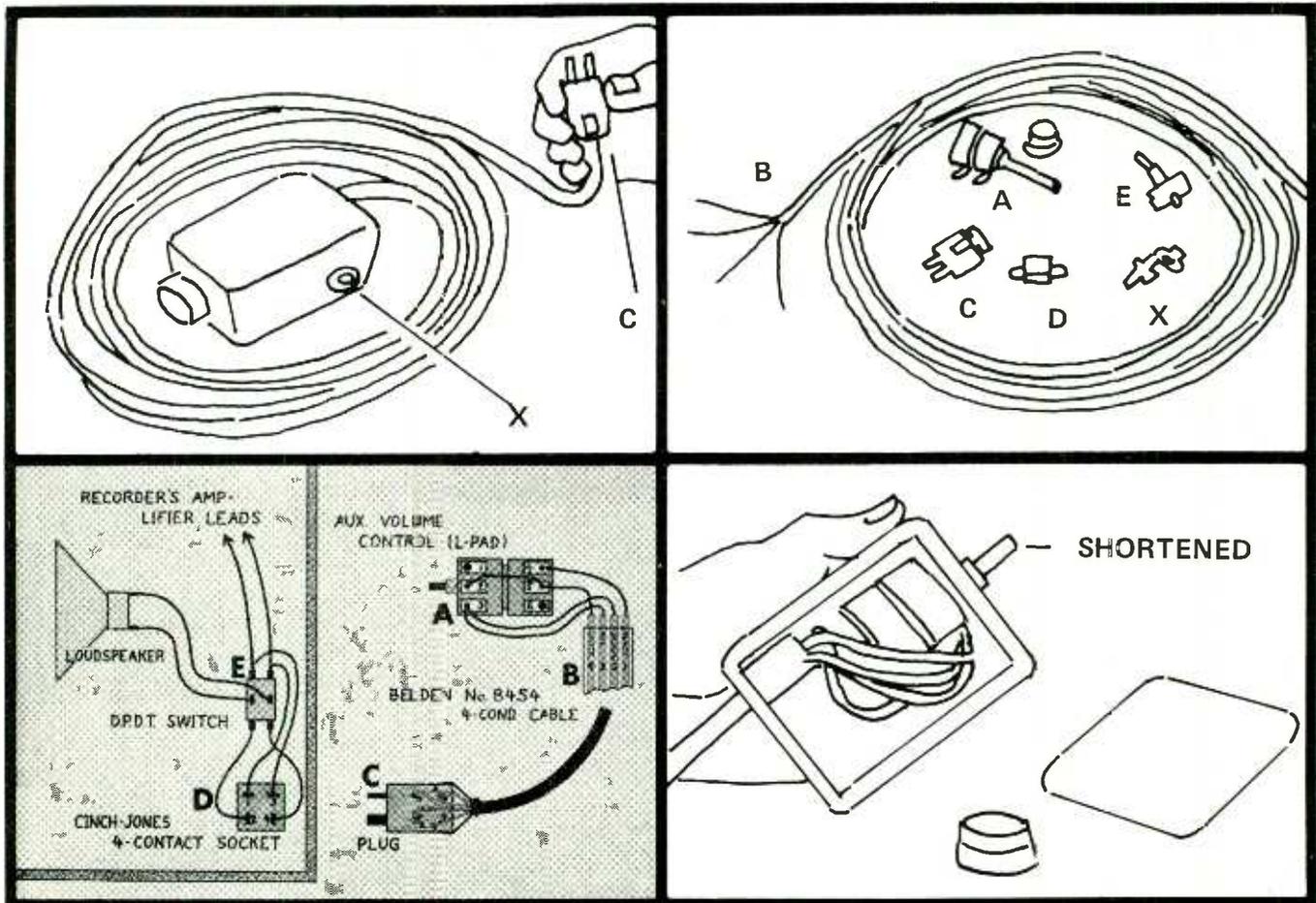
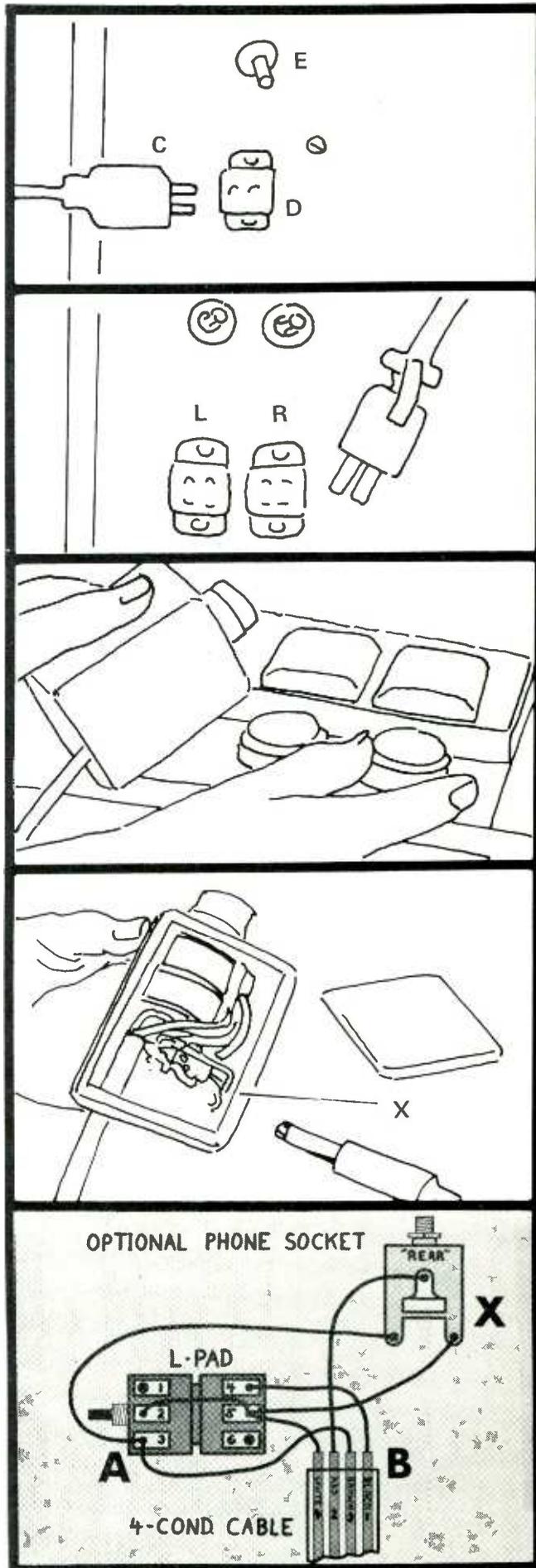


Fig. 6, top: With the remote unit finished, your next job will be to find a place on the side or rear (as here) of your recorder case for the location of socket "D" and toggle switch "E." Aim for convenience of wiring to the speaker (keeping in mind that wire lengths are not at all critical) as well as plug-in convenience from outside. Fig. 7, upper center: If you have a stereo recorder with two speakers, then make exactly the same (though individually separate) wiring to each speaker. Then, for mono listening from either speaker, plug the remote volume control into the socket controlling the speaker you will be listening to. For stereo control, use a DOUBLE L-Pad setup. Fig. 8, center: When using the remote attachment, remember that this auxiliary control can only REDUCE the volume that comes from the amplifier; it can't go a bit higher. So set the recorder's volume control somewhat OVER what you'll want to listen to . . . and make note of this setting (mine is 2 o'clock) for all your remote usage. Fig. 9, lower center: Not everyone needs this optional feature (which always can be wired in later, of course, if you leave room for it in the little case) but for just a few cents more and with hardly much more wiring, you can install a convenient phone jack for remote speaker/phones use. Personally, I find it handy to have available. Fig. 10, bottom: Please note that the numbers on the L-Pad are not actually printed on the actual unit but correspond with the numbers on the diagram packaged with the part. The numbers here on the diagrammed cable (Black, 1-Red, 2-Brown, 3-White, 4) are color-coded to simplify wiring when following down to the numbered 4-cond. plug.



on something else. So now part of my re-recording technique includes plugging in the extra volume control for the playback recorder's speaker, to tune it down a bit (for superior family relations, I might add).

The accompanying photos and diagrams tell most of the construction story, though I'd like to emphasize a few points along the way. Quite likely those of you living in large cities can locate the following parts at local hi-fi or electronics supply stores, but I've listed a mail order source for the rest:

"A"—This CENTRALAB Model "WL" L-PAD came from Burstein-Applebee Co., 1012 McGee St., Kansas City 6, Missouri. It comes complete with black knob and instruction sheet, and is their Stock No. 14A221 for \$2.97 plus postage on 6 oz. *Important!* When ordering this L-Pad, be sure to specify the OHMAGE you'll need to most nearly match the amplifier output of your recorder. My Knight recorder here, for example, has 3.2 ohm speakers so I ordered the 4-ohm control (as being nearest out of a choice of 4, 8, or 16 ohms). You should be able to locate the ohmage value of your own recorder's speaker system either in the instruction booklet that came with the machine or you can check with your dealer. If still in doubt, it's very likely that a four (4) ohm L-Pad will do you fine. And note that the control's *shaft* was CAREFULLY shortened (with a hacksaw) by about a full inch.

"B"—This represents eighteen feet of BELDEN Type 8454 four-conductor CABLE. If not locally, you can obtain it from the Burstein-Applebee Company for 11 cents per foot by ordering their Stock No. 2A112. The individual wires are 18 gauge (same as regular lamp cord), so you can use as much as 25 feet of this non-shielded cable without any trouble. Keep in mind that since you are actually using two of the wires to lead OUT to the L-Pad and two of the wires to RETURN to the recorder, 25 feet of 4-conductor cable really represents 50 feet of double wires added in between the recorder's amplifier and speaker system. So if you need to go further than 25 feet away, you'd better locate and use wires of 16 or larger gauge.

"C"—A CINCH-JONES 4-conductor Type No. P304CCT PLUG is put on the opposite end of the cable from the L-Pad. Burstein-Applebee Stock No. 12A179 for 53 cents, sh. wt. 4 oz. When ordering, be sure to state the Cinch-Jones *type number* as well as

the B-A stock number. Unlike the L-Pad, this part (and the matching socket) have numbers stamped right on the plug itself so it's easy to follow the diagrams. To further simplify wiring, I've "coded" these numbers to the four colors of the Belden cable as noted in Fig. 10. *Note!* This plug comes with a handy cable clamp for relieving the strain of the cable pulling on the plug. For a tight grip, first wrap a few layers of plastic tape around the cable underneath the plug clamp.

"D"—A CINCH-JONES 4-conductor Type No. S304AB SOCKET. Burstein-Applebee Stock No. 12A180 for 29 cents, sh. wt. 4 Oz. Again, be sure to include the Cinch-Jones *type number* when ordering. And, if your recorder is a stereo model with two speakers, you'll need two sockets.

"E"—Any good quality AC-DC type DPDT toggle switch is fine. The one used here (or two for stereo) is an especially dependable and smooth-working CARLING TOGGLE SWITCH, Carling Type 316-73 and Burstein-Applebee Stock No. 12A650 at 78 cents each, 4 oz. sh. wt. each.

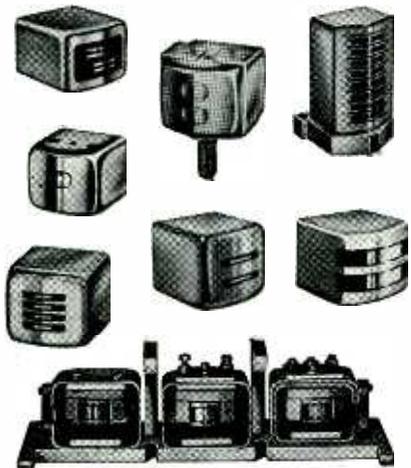
"X"—This is a midget phone jack that will take standard ¼" phone plugs. With this jack hooked into the L-Pad circuit as shown in Figs. 9 and 10, you can easily plug in a remote set of headphones or a remote loudspeaker any time the occasion arises. It's a MALLORY Type A2A MIDGET PHONE JACK (closed circuit type) for 57 cents from the Newark Electronics Corp., 223 W. Madison St., Chicago 6, Illinois. Ask for their Stock No. 39F739, sh. wt. 4 oz.

The small HOUSING CASE (Fig. 1) that holds the L-Pad and its wiring was made from Masonite, but most any material will work as well. If you won't be needing the phone jack, an especially easy-to-assemble case may be made from a small food can, such as a Libby's 4-oz. can of Vienna Sausage. Remove both the metal top and the bottom and replace with glued-in circles of Masonite or some other thin wood or plastic material. Glue the top in place, wire and then fasten the L-Pad to the top and give it a final test before permanently gluing in the bottom piece. And be sure to wind quite a few layers of plastic tape around the 4-conductor cable *just inside* the case (see Fig. 9) to keep it from pulling out and exerting undue strain on the inner wiring.

When wiring inside your RECORDER (Fig. 4), first cut the two wires going to the speaker, to give you a set of speaker wires and a set of amplifier wires. For a stereo set, duplicate this wiring for each speak-

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er. If instead of two wires going to each speaker your set has *three* wires dividing between both speakers, then note which of these three wires is the "common" one (that is, goes to both speakers) and do the same with your own wiring. Wire the common wire to each of the toggle switch connections. Now you're all set up for MONO control of whichever speaker you've plugged the L-Pad into.

For those of you who would like to make this a complete STEREO control unit, you'll need *two* L-Pads hooked up side by side. Though it's not shown here, I have such a control myself and it's a terrific way to "fine-tune" *balance* your stereo listening from across the room and I can highly recommend it. Make your little hand-held case large enough to hold both of the L-Pads and use BELDEN Type 8418 eight-conductor CABLE. It's Burstein-Applebee Stock No. 2B195 and costs 22 cents per foot. But since the individual wires are a smaller (20) gauge, I don't recommend using a total length of over 18 feet or so. On the other end of the cable you can use 8-conductor Cinch-Jones plugs and sockets but I think you'll find the 4-conductor plug and socket wiring (a couple set, of course) easier to follow.

IMPORTANT! In order to keep the wiring as simple as possible, a *load resistor* was not included in the amplifier/speaker circuit inside the recorder. Therefore, be careful not to switch the toggle switch(es) from normal operation to remote operation until *after* the L-Pad is plugged in. Conversely, don't pull the plug out until you have switched the toggle switch(es) back to normal operation. This way, there's no danger (even though it's likely a remote one) that your amplifier will be damaged because of lack of "something" to absorb the power output. Finally, should you note that *rapidly* twirling the L-Pad control knob causes a scratchy sound to come out of the speaker, don't be especially dismayed. This seems to be inherent with L-Pads so don't think yours is defective. Just turn the knob slowly when making volume changes and it'll sound smooth as silk—and within a month you'll wonder how you ever got along without this wonderfully convenient little device.

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Orchestral Miscellaneous

<p>Bach—Brandenburg Concertos—Casals (Columbia)</p> <p>Beethoven—Overtures—Munchinger (London)</p> <p>Bizet—L'Arlesienne Suites—Ormandy (Columbia)</p> <p>Brahms—Haydn Variations—Walter (Columbia)</p> <p>Copland— Appalachian Spring—Bernstein (Columbia) Billy the Kid—Bernstein (Columbia) Rodeo—Bernstein (Columbia)</p> <p>Debussy—Afternoon of a Faun—Monteux (London)</p> <p>Dukas—Sorcerer's Apprentice—Ansermet (London)</p> <p>Falla—Nights in the Gardens of Spain—Argenta (London)</p>	<p>Bach—Four Suites—Munchinger (London)</p> <p>Bartok—Concerto for Orchestra—Haitink (Epic)</p> <p>Beethoven— Choral Fantasia (Columbia)</p> <p>Bizet—Fair Maid of Perth—Ansermet (London)</p> <p>Borodin— In the Steppes of Central Asia—Pretre (Angel) Polovtsian Dances—Pretre (Angel)</p> <p>Brahms—Serenade No. 2</p> <p>Britten—Young Person's Guide to the Orchestra—Dorati (London)</p> <p>Corelli—Concerti Grossi, Op. 6</p> <p>Debussy— La Mer—Ormandy (Columbia) Nocturnes—Ansermet (London)</p>	<p>Bartok—Music for Strings, Percussion and Celeste—Ansermet (London)</p> <p>Debussy—Iberia</p> <p>Honegger—Pacific 231—Ansermet (London)</p> <p>Stravinsky—Histoire du Soldat—Markevitch (Philips)</p> <p>Thomson—Louisiana Story</p> <p>Varese—Ionization</p> <p>Vaughan Williams—Fantasia on a theme by Tallis—Barbirolli (Angel)</p>
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Essential	Desirable additions	Off the Beaten Track
<p>Handel—Concerti Grossi, Op. 6 (DGG) —Water Music—Kubelik (DGG) Liszt—Les Preludes—Bernstein (Columbia) Mendelssohn—Midsummer Night's Dream—Kubelik (DGG) Mozart—Eine kleine Nachtmusik Walter (Columbia) Prokofieff—Lt. Kije—Ormandy (Columbia) Ravel—Daphnis and Chloe—Monteux (London) Rimsky-Korsakoff—Scheherazade—Stokowski (London) Sibelius—Swan of Tuonela—Gould (RCA) Smetana—Ma Vlast Strauss— Death and Transfiguration Von Karajan (London) Don Juan—Szell (Epic) Till Eulenspiegel—Von Karajan (London) Stravinsky— Firebird—Ansermet (London) Petrouchka—Stravinsky (Columbia) Tchaikovsky— Nutcracker Suites—Ansermet (London) 1812 Overture—Alwyn (London) Romeo and Juliet—Munch (RCA Victor) Sleeping Beauty—Ansermet (London) Swan Lake—Ansermet (London) Vaughan Williams— English Folk Song Suite—Gould (RCA) Wagner—Siegfried Idyll.</p>	<p>Elgar—Enigma Variations—Barbirolli (Angel) Falla— El Amor Brujo—Maazel (DGG) Three-Cornered Hat—Maazel (DGG) Gershwin— American in Paris—Fiedler (RCA) Cuban Overture—Hanson (Mercury) Grieg—Peer Gynt Suites Gruner-Hegge (Camden) Grofe—Grand Canyon Suite—Gould (RCA Victor) Handel—Royal Fireworks Music—Stokowski (RCA) Holst—The Planets—Stokowski (Capitol) Khachaturian— Gayne—Fiedler (RCA) Masquerade Suite—Kondrashin (RCA Victor) Kodaly—Hary Janos Suite—Ormandy (Columbia) Mussorgsky— Pictures at an Exhibition—Karajan (DGG) Offenbach—Gaité Parisienne—Fiedler (RCA) Prokofiev— Peter & The Wolf—Von Karajan (Angel) Romeo & Juliet—Kurtz (Angel) Ravel—Rapsodie Espagnole—Bernstein (Columbia) Bolero—Bernstein (Columbia) Respighi—Pines, Fountains of Rome—Reiner (RCA) Saint-Saens—Carnival of the Animals—Henderson (London) Sibelius—Finlandia—Gould (RCA) Strauss—Also Sprach Zarathustra Reiner (RCA) Stravinsky—Le Sacre du Printemps—Stravinsky (Columbia) Thomson— The Plow That Broke the Plains—Stokowski (Vanguard)</p>	

Essential	Desirable additions	Off the Beaten Track
Sonatas		
<p>Bach—Six Unaccompanied Violin Suites Nos. 2 and 3 for Cello</p> <p>Beethoven—Complete Cello Sonatas—Fournier (DGG)</p> <p>Violin Sonatas, complete</p> <p>Piano Sonatas Nos. 8, 14, 23, “Pathétique,” “Moonlight,” “Appassionata”—Serkin (Columbia)</p> <p>Chopin—Piano Sonata in B—Vasary (DGG)</p> <p>Liszt—Piano Sonata in B</p> <p>Mozart—Violin Sonata in E, K. 304</p> <p>Violin Sonata in B Flat, K. 454</p> <p>Piano Sonatas Complete</p> <p>Schubert—Violin Sonata (Duo) in A</p> <p>Arpeggione</p> <p>Piano Sonatas in C, D—Brendel (Vanguard)</p> <p>Schumann—Violin Sonata in A</p>	<p>Bartok—Unaccompanied Violin</p> <p>Beethoven—Piano Sonatas</p> <p>Op. 106</p> <p>Op. 109—Backhaus (London)</p> <p>Op. 110</p> <p>Op. 111—Backhaus (London)</p> <p>Brahms—Piano Sonata in F</p> <p>Chopin—Cello Sonata, Op. 65</p> <p>Grieg—Piano Sonata in E</p> <p>Ives—Piano Sonata No. 1—Lee (Nonesuch)</p> <p>Liszt—Dante Sonata</p> <p>Ravel—Sonatine</p>	<p>Barber—Piano Sonata</p> <p>Bloch—Piano Sonata</p> <p>Clementi—Piano Sonatas</p> <p>Copland—Piano Sonata</p> <p>MacDowell—Piano Sonatas</p> <p>Schumann—Piano Sonata in F</p>

Miscellaneous Keyboard Works

<p>Bach—</p> <p>Organ Music—Biggs (Columbia)</p> <p>Well—Tempered Clavier</p> <p>Kirkpatrick (DGG)</p> <p>Brahms—</p> <p>Piano Music (excerpts)</p> <p>Chopin—</p> <p>Polonaises—Rubinstein (RCA)</p> <p>Scherzos—Vasary (DGG)</p> <p>Debussy—Preludes, Book I</p> <p>Preludes, Book II</p> <p>Children’s Corner.</p> <p>Liszt—Hungarian Rhapsodies (complete)</p> <p>Mozart—Rondo in A minor—Haskil (Mercury)</p> <p>Scarlatti—Sonata collections—Horowitz (Columbia)</p> <p>Schubert—Four-hand Piano Music</p> <p>Schumann—</p> <p>Carnaval—Rubinstein (RCA)</p> <p>Kinderscenen</p>	<p>Bach—Partitas</p> <p>Beethoven—Bagatelles</p> <p>Franck—Prelude, Chorale and Fugue</p> <p>Greig—Lyric Pieces.</p> <p>Hgndel—Harpsichord Suites</p> <p>Mendelssohn—Variations Serieuses.</p> <p>Rachmaninoff—24 Preludes. Pigno Music</p> <p>Schumann—Novelletes</p>	<p>Albeniz—Iberia</p> <p>Chabrier—Trois Valses Romantiques</p> <p>Falla—Piano Music</p> <p>Grieg—Ballade</p> <p>Mendelssohn—Songs Without Words (complete)</p> <p>Rachmaninoff—Suites Nos. 1 and 2</p> <p>Stravinsky—Concerto for Two Solo Pianos</p>
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THE PHILADELPHIA SOUND STORY

by John Pfeiffer

In this cybernetically sophisticated twentieth-century world, the search for aesthetic pleasure through wordless communications still leans heavily on the scraping, blowing, pounding, and plucking of centuries-old noisemakers to create the sound of music. And perhaps nowhere today is this quest more rewarding than in listening to The Philadelphia Orchestra with Eugene Ormandy conducting in the concert hall or in the home through radio, television, or phonograph.

The Philadelphia Orchestra is "... probably the greatest virtuoso orchestra of all times," according to Harold Schonberg of the *New York Times* and it is



"...surely the greatest orchestra in the world," in the opinion of Irving Kolodin, music critic of the *Saturday Review*. These opinions have been echoed by a great proportion of the musically sensitive community since 1912, when Leopold Stokowski took the helm of the then 12-year-old orchestra, and over the last 28 years, Eugene Ormandy's monumental era.

Perhaps the most consistently recognized unique attribute of the Orchestra is its sound, which has been variously described as "sonorous," "warm," "magical," "opulent," and "elegant." For example, the eminent musician and critic Virgil Thomson has written: "The sound [of The Philadelphia Orchestra]

is always a surprise, for its power, its wondrous bloom, like the coat of some high-bred animal, and its grace, its tiger-like articulation are finer today than they have been before. . . . It is even better, I think, than any orchestra has ever been."

An orchestra's sound, quite simply, is the sound its conductor creates. An orchestra is the conductor's instrument. And the remarkable instrument known as The Philadelphia Orchestra was originally built by Stokowski, who collected a body of excellent musicians with fine instruments and trained them to respond flexibly and sensitively to his every wish. "He created the brilliant sound. He made it sound

like a limitless organ," Ormandy explains, "and I loved it. I grew up in a country [Hungary] where almost everybody has a flair for brilliance." Subsequently, Ormandy took this virtuosic brilliance and re-voiced and refined it. The result was a vitality and musical directness. This has been called the "Philadelphia sound"—a *natural* string quality that applies a velvety patina over the entire orchestra coloration.

The origin of The Philadelphia Orchestra is a tribute to dedication, experimentation—and chance. In 1899, Fritz Scheel, a highly gifted German conductor, appeared on the Philadelphia scene, where there had been many unsuccessful efforts to establish a high-quality, permanent symphonic life for the city. One of the main problems was the frightening economics of maintaining a major symphony orchestra. Fortunately, at the time, some of the community leaders were promoting two concerts with professional musicians chosen by Scheel at the end of his first casual season with the amateur Symphony Society. Camouflaged behind these benefit concerts for families of Philippine War heroes, the formation of a permanent professional orchestra took root in March, 1900. The resounding success of these concerts—musically and financially (a profit of more than \$10,000 for the benefit)—mobilized the cultural and financial forces that offer strong support to this day. By November of 1900, Scheel had assembled 85 competent players and had presented the first undisguised Philadelphia Orchestra concert in an atmosphere of social and musical triumph. The occasion was compared to Boston Symphony nights in Philadelphia, which were then regarded as the only events of symphonic substance in town. Even the *Evening Times* in Glasgow, Scotland, reported that the Orchestra was "... originated by a few American millionaires ... who sent an agent to Europe to spare no expense in getting together the best possible band." Reading—and started its current record for traveling

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That first season, the Orchestra took its first trip—to nearby Reading—and started its current record for traveling more miles to play more concerts than any other orchestra in the United States. It also began the practice of having eminent guest artists appear with an orchestra. These have included such concert soloists as Ossip Gabrilowitch, Fritz Kreisler, and Edward MacDowell. It may also have started the history of spunky conductors who have survived the longest and accomplished the most; for example, Scheel was known as the "Fighter." But it most certainly started a pattern that is common to all symphonic organizations—it ended with a deficit.

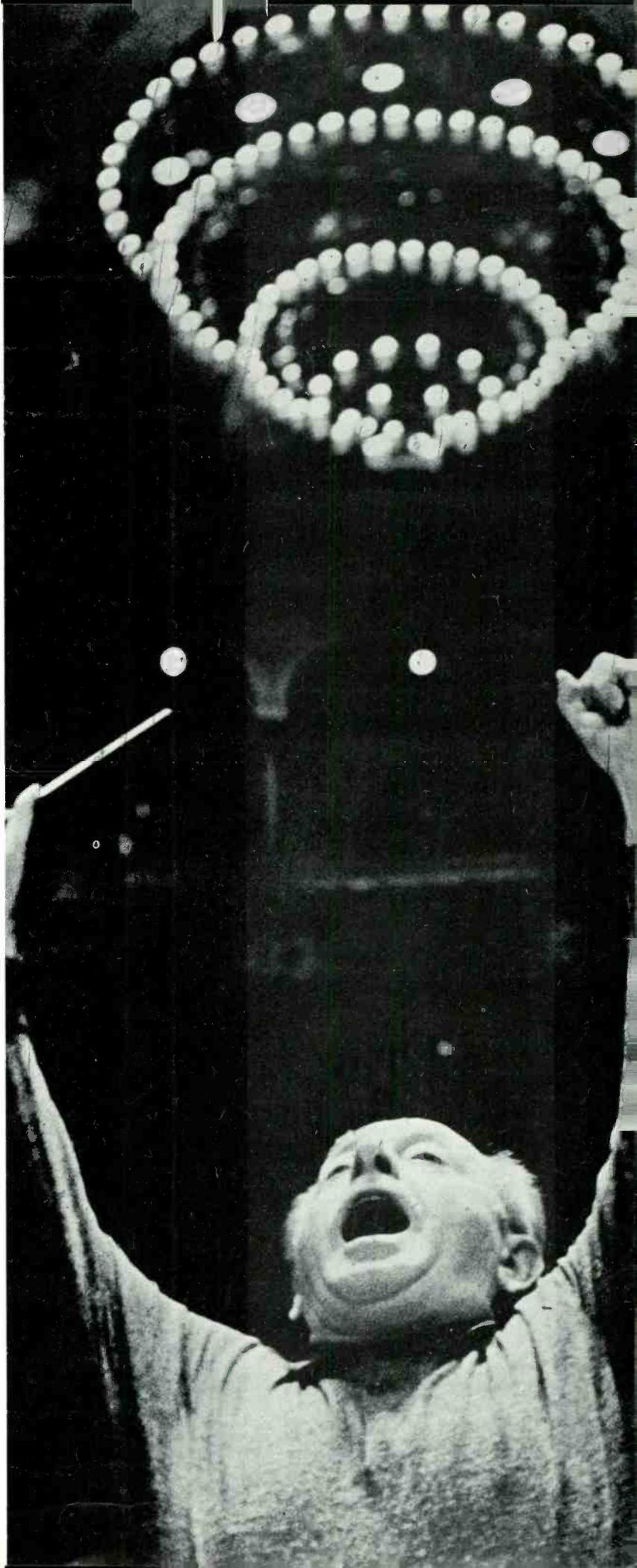
Although it was a basic theater orchestra of Europeans with few U.S. citizens (today, members must be either native or naturalized Americans), it soon boasted a personnel list that read like a roster of every court orchestra in Germany. With higher musical quality came expanded seasons, a succession of world-famous guest artists, and, of course, greater deficits. Some measure of the quality of this infant of all major American orchestras (except Cleveland, which was 16 years in the offing) is evident from a *Musical Courier* description of the reaction of a

notoriously tough audience to its first New York concert in 1902: "They were surprised; they were disconcerted; they were—to put it frankly—intensely envious. As one composer said, 'I feel jealous . . . it plays the classics as we seldom hear them performed here. What splendid enthusiasm, what superb aplomb! . . .'"

"Enthusiasm" and "aplomb" have been continuous distinctions of The Philadelphia Orchestra members. In some measure, they come from a unique pride each player seems to have just in belonging. In turn, that pride today is due considerably to Ormandy's ability to endow each member with a sense of responsibility not only for his own performance but also for his contribution to the whole. "It is a series of chamber music ensembles in which each player listens to himself in relation to the others," he explains. And another part of this pride undoubtedly has its source in the mutual respect between conductor and player. "You are dealing with great artists and with your equals, and you must treat them like that," Ormandy feels.

But more of the players' enthusiasm must evolve from the spirit of experimentation applied both to music and to sound, which was a hallmark of the Stokowski era. Scheel built a solid foundation in an atmosphere of cooperation, support, and gratitude until his death in 1907. He was succeeded by another German traditionalist, Carl Pohlig, who first created a stir by conducting two-hour programs entirely from memory, a talent that tended to obscure the lack of variety in his programs. His five-year tenure was primarily distinguished by an increase in the total number of season concerts from 62 to 86—a statistic that may suggest one reason for his demise: over-exposure. Justly or not, he is remembered as the man who followed Scheel and preceded Stokowski.

With Stokowski came a totally new vitality and "an embarrassing number of novelties," as one newspaper reported after he announced his plans for the first season. But as the last notes of the season's final concert died away, the directors of the Orchestra knew they had found the right man. Although he had just passed 30, Stokowski had had successful seasons with the Cincinnati Orchestra and musical experience abroad. He had come to American in 1905 as organist for St. Bartholomew's Church, in New York. It was his curious, untamed fusion of talent and restless





imagination, appearing at the right moment, that enabled him to weave random threads of music into a brilliant tapestry. Lawrence Gilman, program annotator for the Orchestra and critic of the *New York Herald Tribune*, decided that, when Stokowski took over the Orchestra, "It needed his indomitability, his unslakable passion for perfection, his magnetizing contact, his adventurousness, his superb dissatisfactions" and that he "...shaped and tempered his orchestra into an instrument of almost uncanny perfection...."

Alternating and sometimes violent public and critical darts and kudos never perturbed Stokowski's strong will, and his magnetism converted a provincial orchestra into a world-famous enterprise. During his 28 years with the Orchestra, there were many important "firsts," including the first commercial broadcast of a symphony orchestra (1929, over NBC, sponsored by the Philco Corporation and carried by 50 stations as well as relayed abroad); the first "orchestra-opera" performance in this country; and a distinguished list of world and American premieres of works by many giants of contemporary composition: Stravinsky, Schoenberg, Rachmaninoff, Shostakovich, Richard Strauss, Sibelius, Berg, and Mahler. The *Eighth Symphony* by Mahler—his "Symphony of a Thousand"—premiered in America by Stokowski in 1916, perhaps evoked the most attention, if only by its sheer spectacle. Three choruses totaling 1,000 voices, eight vocal soloists, and an orchestra augmented to 110 musicians performed nine times to enthusiastic Philadelphians and then moved *en masse* to New York's Metropolitan Opera House for a flamboyant climax.

It was during the dynamic atmosphere of Stokowski's second Philadelphia decade—the year, 1931—that Eugene Ormandy, a young Hungarian conductor, made his first appearance with the Orchestra as a substitute for the celebrated conductor Arturo Toscanini, who had suddenly become ill. It was a great challenge. Not only did Ormandy have to impress a Stokowski-oriented audience but he had to please music lovers who were keyed up to a high-pitch anticipation by the guest appearance of maestro Toscanini. Eugene Ormandy met the challenge, conquered his audience, and was permanently engaged—for another orchestra: the Minneapolis Symphony. However, in 1936, he returned to

Philadelphia as music director and shared the podium with Stokowski for the next four years. His appointment as conductor in 1940 started a new history of tenure that is unequaled by any other living conductor of a major orchestra.

A student in the Royal Academy of Music in Budapest at the age of five, Ormandy studied with the famous violinist Hubay and became a professor at 17. Although he says he was born in this country at the age of 22 (he had to start his whole career over again when he came to the United States in 1921), it took him only 10 years to work his way from the last stand of a theater orchestra violin section to the podium in Philadelphia.

What does Ormandy do differently from other great conductors that accounts for his uniquely recognizable sound? It starts with the strings. He specifies every bow stroke, determines the appropriate conditions for optimum string tone from height of instrument bridge to the best type of resin to use on the bow, and directs the detailed changes in tone production to serve stylistic musical needs. In short, he "plays" his orchestral instrument with full awareness of not only what he wants but also how to get it. He engages not only orchestra musicians but also their tone and their instrument, and he helps a member acquire a better instrument if his own falls short of the quality mark. Liberally represented in the violin section are famous old Italian instruments: Guarnerius, Stradivarius, Amati, Guadagnini. Violas, cellos, and string basses have equally famous Italian makers, while woodwinds, brass, and percussion are simply the finest instruments available. In these latter groups, a player will often have several instruments, each appropriate for a different tonal or stylistic requirement. First trumpeter Gilbert Johnson, for example, may use eight different trumpets in the course of a week's performances. On tour, the Orchestra's instruments are insured for more than a half-million dollars.

Ormandy's sense of sonic balance builds on solid, articulated string bass sound. The architecture of his sonic spectrum has a foundation that one feels deeply. Structuring his string sound on this support, he builds cellos, violas, and violins in precise forms to create the integral masses to fill primary space (in music, space is a dimension of time). Woodwinds, brass, and percussion are the architectural details of



the musical structure, articulating the masses, supplying contrasting colors and adding drama. Balancing these elements with the basic radiance of his string sound structure calls upon Ormandy's sense of dramatic proportion, his instinctive and acquired love for brilliance, and a natural eloquence in large musical forms.

The Philadelphia Orchestra sound is also embedded in a tradition of experimentation, teacher legacy, and the continuous search for optimum musical substance. A great orchestra's experimentation is constantly paraded before its audiences in the form of new compositions that have been carefully thought out and tested to produce just the right sound for every detail of a score. This "research and development" is a quest that is constantly carried on by the Orchestra's 106 musicians, conductor, librarian, and operating staff.

An example of this prevailing search is the story of the percussionist Benjamin Podemsky, who joined the Orchestra in 1923. The idea that drums, gongs, cymbals, bells, and other assorted noisemakers are only that and no more was as foreign to him as it would be to Jascha Heifetz with respect to violins. Podemsky modified, refined, and rebuilt to achieve perfection in the sound of his instruments, some of which were exotic ones collected in Stokowski's travels. But he had no antique cymbals—those tiny, delicate, tintinnabulary devices scored for wonderful effects by impressionistic composers such as Debussy. By experimenting with a bar from a glockenspiel, suspending it on a thread, and striking it with a plastic comb, he found the precise effect, but only after collecting all the different types of plastic combs he could find and testing each one. As he approached retirement, he passed his secrets on to his best pupils, who joined the Orchestra and carry on the tradition.

Many such instances exist where present Orchestra

members were trained and inspired by the masters of the early Philadelphia personnel. The finest pupil of the distinguished French horn "first chair" Anton Horner, who joined the Orchestra in 1902, is Mason Jones, the present first horn player and unsurpassed in the world today. His star pupil is already a member of the horn section. Almost every member actively teaches, thereby ensuring quality and stimulation for future Philadelphia orchestras.

William Smith, the highly talented and articulate assistant conductor, points to two other areas of influence on the sound of an orchestra—the shell, or stage enclosure in which the orchestra plays, and the acoustical quality of the hall into which the sound is projected. The stage enclosure is effectively the orchestra's sounding board, the hall its resonant cavity. Deficiencies in either can result in distortions in the sound and balance created by players and conductor. At its home base, the venerable Academy of Music, the Orchestra has faced not altogether favorable conditions for displaying the quality of its sound production. Although popularly considered a fine concert hall, it was designed primarily for operatic performances. Built in 1856 on a design modeled after the most distinguished house for such productions, La Scala in Milan, the Academy's tiered horseshoe brings its almost 3,000 seats close to the stage for maximum delineation of clarity. Orchestral sound, however, should not be heard as individual instrumental tones, and, despite some successful efforts to improve the balance of sound projected to the audience by new stage shells installed in 1922 and again in 1964, the Academy audience still cannot enjoy the full opulence of ideally blended tone colors that is so apparent, for instance, when The Philadelphia Orchestra performs in Symphony Hall in Boston. Although a great sense of intimacy exists between listener and performer in the Academy, there is a lack of sufficient reverberation. It is the effect of multiple reflections of sound in a concert hall that musicians and composers actually use to impart blending, sustaining, and dynamic qualities to their music. Also, reverberant sound returns to the performing musicians from the hall—from which they gain security in knowing their sound is reaching the listener and from which they can judge dynamics, balance, and tone color.

Philadelphia audiences suffer no conscious loss from this absent ingredient. but, in the environment of perfection in which Ormandy and his musicians reside, it is a source of concern and stimulates constant experimentation with the compensating measures within their control. One theory, however, suggests that, had the Orchestra been housed in a more sympathetic acoustical setting, its tonal efforts might not have been so exhaustively exerted and the results not so universally recognized.

When recording production of the Orchestra was recently returned to RCA (its first half-century of recording activity was almost equally divided between, first, RCA and, then, Columbia Records), the problem of *where* to record the Orchestra was discussed. All concerned reasoned that an orchestra plays better in the stage shell and hall where it rehearses and performs—particularly the stage shell that controls its direct sound balance. Without sufficient reverberation, a sonic impression of the hall on a recording is absent. Today, the living room record audience expects symphonic music on records to have the same sonic feeling as that in the concert hall. Columbia Records has met this need over the past 13 years and effectively supplied the consumer with the sound of the Orchestra recorded in the Town Hall ballroom, Philadelphia. Thanks to the responsive flexibility of musicians and conductor in adjusting to this radically different acoustical setting, great recordings in highly sympathetic sonics have

delighted music lovers over the world. (Ormandy has recorded more than 300 LP records and holds three of the six classical Gold Records ever given, each representing sales of \$1 million.)

The rationale of documenting the sound and substance of this unique orchestra in its natural home stimulated RCA to take steps to modify the reverberation character of the Academy so that it would be able to record there in all its sonic glory. To Ormandy and his players, the effort was a resounding success—they could, for the first time, hear their sound returning to them from the Academy walls. Additional improvements are currently being explored that would allow concert audiences in the Academy to enjoy even greater sonic benefits.

Ormandy conducts about 110 of the Orchestra's 170 performances a year at home and on tour, for radio, television, and recordings. Continuing the record of "firsts" (he gave the first symphonic telecast in 1948), he introduces, on the average, 12 new works in Philadelphia every season, including American or world premieres. Fifty compositions are added to the Orchestra's repertoire annually.

Over the past 28 years, Ormandy has given the Orchestra a stability that is in evidence in his confidence in meeting new projects with the eagerness of a beginner and carrying them through with the efficiency of a pro. He works out details, careful to preserve the phrasing, the harmony, the intonation, and the sonority of every orchestration. His respect for time is evident in the tempos he chooses, both on stage and in his personal contacts. Although he berates himself for a lack of patience and diplomacy in human contacts, it is actually the directness as well as the enthusiasm of his personality that govern both his musical and personal performances.

It is these Ormandy qualities—and the over-all quality of his superb orchestra instrument—that have made the "Philadelphia sound" world-famous. A music critic in Katowice, Poland, wrote: "The ensemble is full of clarity, light, and warmth . . . as if created by one hand on one magic keyboard." And an American music lover recently expressed his feeling by this comment: "Listening to Ormandy conducting The Philadelphia Orchestra is an experience comparable in sound to the wondrous sight of the Grand Canyon."



HOW TO RECORD CHORAL



GROUPS



There is nothing more beautiful than a good tape recording of a choral group. The blended voices swell and soften in well-balanced complex chords; they divide into harmony and counterpart; or they take the lead with piano or organ accompaniment. To record all these effects to best advantage entails two separate considerations: the pick-up and balance of the various voices in the chorus; the pick-up of the accompanying instrument and its overall balance with the chorus.

Considering first then the pick-up and balance of the chorus, we find such a group very much like an orchestra. It consists of a number of voices, each with a different pitch and intensity, which must be picked up correctly in order to produce a good musical blend on the recording. These voices may be set up for either a close or distant perspective effect—that is, the singers can be grouped closely in front of the microphone for an intimate “on mike” pick-up, or set quite a way “off mike” for a distant choir effect. Generally a small group will sound best if kept in close focus to the microphone, while a larger chorus permits a choice of either the close or distant type of pick-up.

Since the intimate pick-up requires that all voices sound directly on mike, the members of the group should form a close semi-circle in front of the microphone. The distance used will naturally depend upon the kind of singing selected. For instance, a crooning type of chorus should work approximately a foot away from the microphone; singers using fuller voices must stand back two or three feet to obtain good results.

The surest way to check the working position of each member, not only for the correct volume, but to determine that his voice blends effectively with those of the other singers, is to have the group assume an approximate working position and then, with the recorder turned on, have each vocalist sing his part of the choral selection alone. As this is done, check the volume of the singer either by noting the amount of light on your neon bulb or by the needle swing of your volume indicator. On recorders that have no visual sound indicators the volume of the voice recorded will have to be gauged by ear; but this is not particularly difficult to do and, after a bit of

to become hollow, otherwise objectionable distortion will be introduced. This point can always be checked by making several test recordings with the microphone control in different positions and then leaving it on the setting at which the best results were obtained.

When the chorus is picked up in a very live room, such as a large hall or church with a high ceiling and numerous stained glass windows, the tones will be reflected to such an extent that serious distortion will result. Here then the voices must be picked up with the least amount of echo possible. One way is to have the members of the choir sing softly so that the sound of the voices does not bounce off the walls or ceiling; the other method is to pick up the singers at close range, even if this means using two or three microphones to cover all the sections of a large group. The difficulties in these two alternatives are obvious: in the first, the microphone must be opened fairly wide to obtain sufficient volume to record the voices properly. This may introduce microphone hiss and amplifier noise which may be just as objectionable as the echo. In the second method, the distant perspective is lost and there is also the problem of handling a number of microphones for level and balance. A compromise between these two types of set-ups can sometimes be made. The microphone is moved in so that it is from ten to fifteen feet away from the chorus. Then, by crowding the singers in as compact a mass as possible and having them keep down the overall volume of their voices, a large portion of the objectionable echo may be eliminated without appreciably affecting the recorded quality of the chorus.

Now whether the perspective of the pick-up is close or distant or whether the chorus is large or small, all the voices within the group should sound as though they originated from the same place—that is, they should all have the same perspective. Nothing mars a chorus selection more quickly than having a few voices sound very close to the microphone while the rest seem to be lost in the distance. This effect is quite noticeable on a small chorus, particularly with an intimate set-up; but it can be quickly remedied by having the singers keep their heads close together, as has already been suggested in order to obtain a solid choral tone. With large groups using distant per-

spective, the actual distance of each member from the microphone is not quite as critical provided the individual sections stay at an approximately equal range from the microphone. This perspective balance can be checked on the same recording used to check the volume of sound produced by the different sections of the chorus.

Now that we have discussed the pick-up and balance of the chorus, we must turn our attention toward the instruments used to accompany choral groups.

Perhaps the most widely used chorus accompaniment is the piano. The pickup perspective required on the piano is determined by the perspective adopted for the chorus. Some care must be taken, especially with a distant pick-up, that the piano tones do not boom through the chorus microphone, particularly when only one microphone is used to pick up both the chorus and the piano. As this occurs most frequently whenever a very live room is used, the best way to reduce the effect, if not to prevent it completely, is to have the piano play softly. Sometimes it will be necessary to move the instrument closer to the microphone so that it will create the correct background for the voices but, provided the perspective balance is not upset extensively, the resultant lack of distortion of the piano tones will do much to make the choral rendition still effective on the recording.

Probably even more in demand than the piano for accompanying a large choral group or choir is the pipe organ.

To pick-up and record faithfully all the tones of the pipe organ, the microphone must be set a good distance—generally from twenty to thirty feet—away from the organ shutters. With the microphone in this location, the organ can be played using any degree of sound intensity or extremes of pitch without overloading either the microphone or the recorder. A closer pick-up might produce a better recording on the high-pitched notes, but it would result, especially if too close, in picking up the noise from the bellows and also in distortion on the low notes. On the other hand when the microphone is too far away from the organ, then all the tones of the organ will generally sound distorted. This, as in other too distant pick-ups, is caused by an excess of room echo. The obvious remedy, of course, is to move the micro-



phone closer or, if this is not feasible, to break up the room reverberation by placing sound absorbing material—such as drapes—along different parts of the wall, particularly in the area between the microphone and the organ shutters.

Generally if an organ pick-up and recording can be made without distortion in a certain room, chances are that a chorus with pipe organ accompaniment can also be picked up with good quality. The chorus is set up about fifteen feet away from the microphone which should be tilted toward the center of the group. The normal pick-up distance for the organ is then reduced only slightly—the microphone being set from twenty to twenty-five feet away, to compensate for the tilt on the microphone which favors the chorus.

If the room is too live, then the tones of the organ will have a tendency to swell above the voices in the chorus. One way to cope with this situation is to use two microphones. By placing the chorus as far as practicable from the organ microphone and then making very close pick-ups, on both the chorus and the organ, the organ tones are kept out of the chorus microphone and reverberations are reduced by the directness and closeness of the pick-up. All that is required then is to balance the volume of the chorus against that of the organ and this can be done easily

by adjusting the volume controls of the individual microphones.

When only one microphone is used the problem is more difficult. The microphone must be set tentatively at different distances from the organ shutters, with the chorus arranged each time for very close perspective. Depending of course on the characteristics of the room, it is sometimes possible to find a location for the microphone from which the chorus, heard on a test recording, will sound full and the organ tones will still be reasonably close to the perspective of the voices. Again in this case the nearness and directness of the vocal sounds will decrease the possibility of distortion.

On an overall basis, whether the chorus is accompanied by piano, pipe organ, or electric organ, the points to consider remain the same. First the voices must be balanced in volume and perspective so that the recorded chorus sounds full and integrated. Second, the accompanying instrument must be picked up in such a way that its tones match those of the chorus in quality and perspective and so that they have sufficient volume to furnish the desired background for the voices. Keeping these factors in mind and making frequent test recordings to check the pick-ups should help you obtain good results with any type of choral group.

tape

REVIEWS

Classical

The Art of Ornamentation & Embellishment in the Renaissance & Baroque. Many selections from the works of many composers with many artists. Bach Guild VGF 9698. 3¾ ips, \$9.95.

Music	****
Performance	****
Recording	***

Here is a wonderfully instructive and fascinating collection of music. All the music is presented twice—first, as it was originally written, then, as it was ornamented or embellished by the composer himself or by one of his contemporaries. So the entire tape represents a fine study of the musical thinking of the great period of musical history from the mid-15th to the mid-18th century.

Dennis Stevens, professor of music at Columbia University, chose most of the works. But the idea for the album was the brainchild of Seymour Solomon, who worked out the details with Professor Martin Bernstein of New York University.

Ornamentation and embellishment were integral parts of the music of the renaissance and baroque periods. The purpose of this recording is to present historically authentic survey of some of the aspects of ornamentation and embellishment.

There is a wealth of rich material here. The composers represented include some of the world's greats—like Gluck, Vivaldi, Telemann, C.P.E. Bach, Monteverdi, Handel and Rameau—as well as some of their lesser known contemporaries. The soloists are greats, too. They include Alfred Deller, Maureen Forrester, Igor Kipnis, Jan Tomasow and others. All are excellent.

This tape provides a singular contribution, not only in highlighting the beauty of this particular music, but in providing a documentation of tasteful ornamentation and embellishment.

—G.R.

Bach

Ein feste Burg ist unser Gott and Wachet auf, ruft uns die Stimme. (Cantatas No. 80 and No. 140). Choir of St. Thomas Members of Gewandhausorchesters Leipzig, conducted by Erhard Mauersberger. Archive AR-8407. 7½ ips, \$7.95.

Music	***
Performance	****
Recording	***

As in so many of Bach's cantatas, the most moving sections in these two are the choral portions. Some of the solo portions tend to be more technically inventive than inspired. Though not among Bach's greatest utterances, these cantatas are certainly compelling.

In using small orchestral forces, the recording comes close, musically, to the forms in which Bach probably conceived these works.

The soloists are Agnes Giebel, soprano; Herta Topper, alto; Peter Schreier, tenor; and Theo Adam, bass. The male artists are outstanding for beauty of execution combined with sensitive musicianship.

The recorded sound is excellent, so, all in all, this is a tape worth owning.

—W.G.S.

Bach

Violin Concertos Nos. 1 in a; 2 in E; Concerto for 2 Violins in d. David Oistrakh (with Igor Oistrakh in the Double

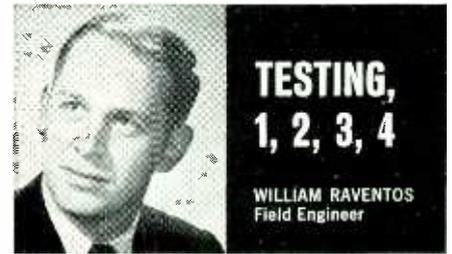
Concerto), violin; Vienna Symphony Orchestra cond. Oistrakh (in the first two concertos); Royal Philharmonic Orchestra cond. Goossens (in the Double Concerto). Deutsche Grammophon DGC 8820, 7½ ips, \$7.95; DGM 88820, 8-track cartridge, \$6.95.

Concerto for 2 Violins in d; Beethoven—Romances for Violin and Orchestra in G, F; Vivaldi—Concerto Grosso in a, Op. 3 No. 8. David Oistrakh (with Igor Oistrakh in the Double Concerto) violin; Royal Philharmonic Orchestra cond. Goossens. Deutsche Grammophon DGC 8714, 7½ ips, \$7.95.

Music	****
Performance	****
Recording	****

There's one common element here, so let's discuss it first. Surprisingly, this appears to be the first tape version of the Bach Concerto for Two Violins (and certainly the first cartridge version). It could hardly be presented under better auspices. The Oistrakhs, father and son, have performed this work often together and treat it with sympathy and respect. The Royal Philharmonic is a worthy participant in this endeavor. The recording is just a shade dry, with plenty of stereo separation, clarity and nary a trace of tape hiss—at least on our equipment.

The two Bach violin concertos likewise receive sensitive readings and really good recordings—but Ampex has fallen into the trap of duplicating on tape what's available on records. Instead of offering us the *Concerto No. 2* complete on one track and using one or both of the *Beethoven Romances* as a filler—even at the risk of an increase in price—Ampex has split the concerto in the reel version. It's even more horribly split in the cartridge version, which manages to split both a concerto and a movement at the end of



**TESTING,
1, 2, 3, 4**

WILLIAM RAVENTOS
Field Engineer

its three changes. Please, fellas, can't we have better planning than this—particularly when the performances and the sound otherwise are so outstanding?

The Beethoven Romances and *Vivaldi Concerto Grosse* likewise would appear to be new to tape, and the comments about performance and recording apply equally to them—we can't imagine a better performance. Which tape you select will depend on your repertoire preferences (ours are toward the all-Bach if you have to make a choice). As cassettes go 88820 is well-recorded with excellent sound, and contains music which is very rare in cartridges. It should be encouraged despite its shortcoming.

—R.A.

Ballet Music

The Heart of Ballet. *Excerpts from Gaité Parisienne, Giselle, Romeo and Juliet (Prokofieff), Sleeping Beauty, the Red Poppy, Swan Lake, Petrouchka, Sylvia, Fall River Legend, Afternoon of a Faun, Bourrée fantasque, Valses noble et sentimentales, Firebird, Coppélia, Rodeo, Graduation Ball, Gayne, Faust and the Nutcracker. Various orchestras and conductors. Mercury/Ampex MEF 9127, 3¾ ips, \$9.95.*

Music Performance Recording	★★★★ ★★★★ ★★★★
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Generally, collections of this type leave a lot to be desired, or they set out to prove something and usually fail in the attempt. Such just isn't the case here. This double-length tape (97 minutes-plus playing time) is an unpretentious, simply gorgeous collection of some of the most pleasant and most remembered ballet music available. No lessons, no obscure never-heard-before and just-as-soon-not-hear-again scores. It's just plain nice, well programmed, well recorded, and downright enjoyable. Of course it's nice to have an ex-dancer in the house whose feet just won't stay still when this tape is on; but it's that kind of tape—it turns you on.

The orchestras include the Minneapolis (Dorati), LSO (Fistoulari), Eastman-Rochester (Hanson), Detroit (Paray)—the usual ones on the Mercury label. They're all good and well recorded, and this tape may well earn a place as a basic library item in many

a collection. Quite good all the way around. —W.G.S.

Berg

Lulu, Orchestra of the Deutsche Oper, Berlin, conducted by Karl Böhm. Leading soloists: Evelyn Lear, Dietrich Fischer-Dieskau, Patricia Johnson, Donald Grobe. Two reels. Deutsche Grammophon DGT 9275. 7½ ips, \$17.95.

Music Performance Recording	★★★★ ★★★★ ★★★★
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You either like Alban Berg or you can't stand him. There's no middle ground. Either his music conveys musical sense or all you hear is a lot of noise.

Where many other contemporary musicians display only emotional bankruptcy and musical ugliness in spite of their technical fluency, Berg—in his operas—offers expressive accuracy and power in relation to the situations and text. In his self-contained instrumental works, he is certainly less successful.

Lulu is a powerful, moving work. Based on Wedekind's two works. *Earth-Spirit* and *Pandora's Box*, it centers on the irresistible Lulu who, completely amoral, destroys all men who come into contact with her. Lulu commits her crimes innocently; she is simply the unfortunate embodiment of beauty and femininity.

The entire opera is symbolic. The characters aren't real. Rather, they are embodiments of ideas and personality types. *Lulu* represents Berg's vision of modern life. The music doesn't merely accompany the action; it is intricately interwoven with it. For this reason, there are many who can enjoy and love the music of *Lulu* when it accompanies the action on the stage, while they can't take the music in the listening room at home.

In Evelyn Lear as Lulu and Dietrich Fischer-Dieskau as Dr. Schon, D.G.G. has ideal casting of the principals. No nuance of the musical text escapes them; they act with their voices and sing superbly too. Miss Lear conveys all the varied aspects of Lulu's personality most meaningfully. The scenes between the two principals are highly charged.

The remainder of the cast is excellent, too, though, perhaps, Patricia Johnson as the Countess Geschwitz, could have

Testing of microphones ordinarily takes two distinct forms: laboratory tests and field tests. The former is basically objective in nature and results in performance specifications, while the latter provides a subjective evaluation of the microphone under actual use conditions. Both forms of testing are valuable, but on occasion the field results do not seem to fully support the laboratory tests.

The difference, of course, lies in the "idealized" conditions that consistently form the basis for laboratory tests. No such uniformity exists in the field, yet the need for correlation between specifications and actual performance is increasingly felt.

In order to more thoroughly explore the causes for deviation from laboratory response, Electro-Voice has undergone a series of tests of varying types of microphones using its large anechoic chamber as a research tool. To date the investigation has concentrated on effective polar response, effects of distance on frequency response, and the results of multiple in-phase and out-of-phase microphone pickups. While the studies have just begun, causes of several common problems have been pinpointed.

Polar response was investigated by rotating the microphone in the anechoic chamber, while speaking at constant volume. This test pointed up the necessity for uniform response off-axis as well as on-axis. With microphones such as the Model RE15, level changed with rotation of the microphone, but voice quality (hence frequency response) remained constant. However with directional microphones that did not offer uniform off-axis response, sound quality quickly became unacceptable. Using such a microphone to reduce unwanted pickup to reasonable levels can alter the tonal character of the unwanted sound, as well as distort the apparent acoustical characteristics of the studio or hall.

It was also noted that many omni-directional microphones exhibited directional characteristics that were quite audible at an angle as small as 80° off axis. This proved to result from interference of the microphone case, and was directly related to increasing case diameter.

In another series of tests, the effect of distance of frequency response and articulation was investigated. A male voice was recorded at distances from 2' to 25' in the anechoic chamber, levels were then equalized, and tonal quality and articulation was compared. No significant difference could be noted as distance increased. It is evident that the "loss" of highs with distance is not due to reduction in actual intensity. Rather the changing phase relationships determined by environment acoustics has an increasing effect with rising frequency. This is interpreted subjectively as a loss of intensity.

Further tests of this type will be discussed in future columns, and suggestions for other areas of investigation are welcome.

For reprints of other discussions in this series, or technical data on any E-V product, write: ELECTRO-VOICE, INC., Dept. 1183TR 637 Cecil St., Buchanan, Michigan 49107



contributed a few more subtleties to this meaty role.

Karl Bohm's conducting is one with the musical spirit of *Lulu* and the Orchestra of the Deutsche Oper, Berlin, responds to his direction beautifully.

One final word. The notes by G. R. Sellner and Theodor Adorno offer little that is meaningful. They are simply pre-tentious. —G.R.

Brahms

Concerto No. 1 in D Minor for Piano & Orchestra, Opus 15; Rudolf Serkin, piano; Cleveland Orchestra, George Szell, conductor. Col. MQ1008, 7½ ips, \$7.95.

Music	***
Performance	****
Recording	****

The Brahms D Minor isn't a very high-ranking favorite—in fact it's relatively obscure when ranked up against the composer's other works. It's too long, too windblown, too groping-for-a-format. It has its delightful moments and can be an enjoyable listening experience, but not one you'd want to repeat too often. It lacks the luster and brightness of the B-Flat Concerto.

But in giving the work its due, Serkin acquits himself admirably, delivering one of the best and most animated performances (it's hard to think of Serkin as not being animated) that we've yet heard. The soloist is superb, backed up by an excellent orchestra and recorded quite well by Columbia. There is a little crosstalk noticeable during quiet passages, but not enough to be distracting. One thing Columbia still hasn't seen fit to do—their tapes still aren't pro-

grammed for automatic-reversing recorders. The result: about seven minutes of silence between the first and second movements. Columbia please take note—do as Ampex does—put the silence at the beginning of Sequence A instead of the end. Hiss level is a little high, but maybe we've been spoiled by Dolbyized tapes. Otherwise, an excellent job and high on the recommended list for Brahms lovers. —W.G.S.

Horowitz

Concerto No. 2 in B-Flat, Op. 83 (Brahms), Concerto No. 1 in B-Flat Minor, Op. 23 (Tchaikovsky). Vladimir Horowitz with NBC Symphony Orch. conducted by Arturo Toscanini. RCA Victor TR 3-5027. Mono, (3¾ ips), \$10.95.

Music	**
Performance	***
Recording	**

There's good news and bad news on this tape. Toscanini is fabulous—almost by definition. Brahms and Tchaikovsky are fair to poor. These are not their great works.

RCA Victor deserves high praise for resisting its usual deplorable tendency to "enhance" a recording with "electronically reprocessed" stereo. Though the sound quality on this tape is not quite as fine as that on other RCA releases, the company still deserves thanks for providing monophonic transcriptions of the mono recordings of the Carnegie Hall performances of the Brahms in 1940 and the Tchaikovsky in 1943.

Horowitz, unfortunately, is just Horowitz—a brilliant technician but not always a great musician. His brittle, ultrasophisticated approach to the Brahms, for example, shows a lack of understanding of the character of the music. If you prefer Brahms to Horowitz, you may want a different performance.

It's not a particularly fine work anyway, as Brahms strains for effect much of the time. So perhaps Horowitz can be forgiven his liberties with the music. And his father-in-law, Toscanini, can be forgiven his choice of pianist.

Horowitz's performance of the Tchaikovsky, on the other hand, is superb and breathtaking. Like many other per-



formers, Horowitz has the right feel for some works and the wrong one for others. —G.R.

Kostelanetz

Scarborough Fair. Includes *The Bare Necessities, Talk to the Animals, Love Is Blue, Laura, Scarborough Fair/Canticle, I'm in the Mood for Love and others.* Columbia CQ 1006, 7½ ips, \$7.95.

Music	★★★★
Performance	★★★★
Recording	★★★★

Kosty has that old black magic when it comes to filling up a whole symphony orchestra's program with the trivia of everyday popular music. Part of the secret is superb programming; another is top-notch arranging; the third ingredient is Kosty himself. Old Andre has a way with music that captivates the long hair as well as the music-hater. The beat is there—never heavy-handed, but mellowed and smoothly flowing over the glissandos of his symphony orchestra. He can make an ever-so-ordinary popular tune over in royal raiment and hold the attention and rapture of any audience; such is his magic. Columbia knows a good thing, and the recording's mastering and duplication is superb.

—W.G.S.

Orff

Carmina Burana, by Carl Orff. *Gundula Janowitz, soprano, Gerhard Stolze, tenor, Dietrich Fischer-Dieskau, bariton; the German Opera Chorus and Orchestra, Berlin; Eugen Jochum, conductor.* DGG/Ampex, DGC 9362, 7½ ips, \$7.95.

Music	★★★★
Performance	★★★★
Recording	★★★★

"God bless Ampex," we said on first opening the new tape box, "they've included a libretto!" Such was not the case with Columbia's Ormandy recording of *Carmina Burana*. The libretto immediately makes understanding and appreciation more viable, even for an old-time Orff enthusiast like this reviewer. This tape is an excellent reading of *C.B.*—one of the best we've heard since

the Ormandy. Unhappily, all *Carminas* are compared with the Ormandy/Columbia recording, for it is after all the definitive one—a yardstick against which to measure all who follow.

But this DGG release has much to commend it, not the least of which is its impressive list of soloists. The archaic Latin diction isn't quite as vulgar as in the Ormandy, and thereby loses some of its flavor of authenticity; in a few spots, the orchestra is kind of muddy; in others, the balance was somewhat awry between orchestra and chorus. Yet overall, Deutsche Grammophon has done an admirable job, and this tape is largely free of the high crosstalk levels that plagued the Ormandy release, although it too has crosstalk. In a few places, Jochum's control of the orchestra is perhaps too tight. This score should after all be one of almost reckless abandon in the performance, even though it is actually very tightly controlled. To call this recording the best since the Ormandy is high praise indeed, and it ranks high on the recommended list.

—W.G.S.

POPULAR

Baja Marimba Band

Do You Know The Way To San Jose? Julius Wechter And The Baja Marimba Band. *Selections include: I Say A Little Prayer, Sunrise, Sunset, San Fernando, Do You Know The Way To San Jose?, In A Vera Cruz Vein, The Ballad Of Bonnie And Clyde, Yes Sir, That's My Baby, By The Time I Get To Phoenix, Sunday Mornin', For Bud, There's Gotta Be Something Better Than This.* A&M M8150, 8-track cartridge. \$. .

Music	★★★
Performance	★★★
Recording	★★★

This Herb Alpert offspring continues to reach new heights of entertainment enjoyment. In this latest cartridge, we find the current 'Big Hit' *Do You Know The Way To San Jose?* which will please every fan. But my bets are placed on *Sunrise, Sunset, By The Time I Get To Phoenix,* and *The Ballad Of Bonnie And Clyde.* Simply because Mr. Wechter's

shoddy group makes these standards appear to be brand-spanking new. That's quite a magical feat.

—F.R.

Count Basie

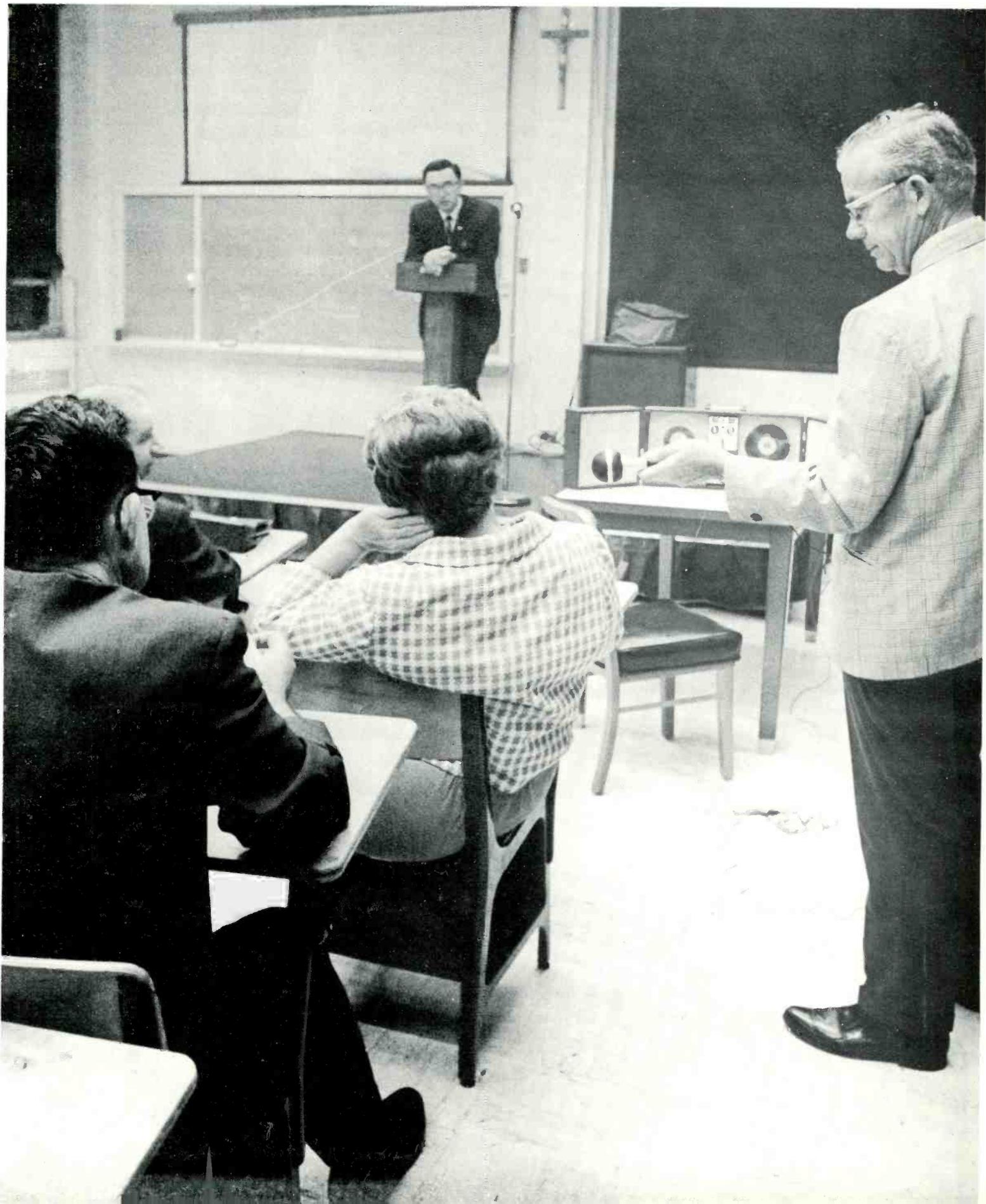
Half A Sixpence. *Selections include: Half A Sixpence, If The Rain's Got To Fall, The Race Is On, A Proper Gentleman, I Don't Believe A Word Of It, I'm Not Talking To You, She's Too Far Above Me, I Know What I Am, Money To Burn, This Is My World, All In The Cause Of Economy, Flash Bang Wallop.* Dot DTM 85834, 8-track cartridge. \$. .

Music	★★★
Performance	★★★
Recording	★★★

Here is Big Bill from Red Bank swinging at his best. He has finally joined the ranks of the other jazz greats who make fortunes playing the latest show tunes. And none too soon, to say the least. The Count aided by sax man Illinois Jacquet, and trombonist Dick Boone do the familiar score as they first did it for film star Tommy Steele who appears in the *Half A Sixpence* movie. Steele later sent a note to the composer Dave Heneker. It stated, 'I am thrilled to tell you that your score wore them majestically and strutted around that studio for hours as happy and as gay as it was in Liverpool and, if I may add, in a style that even you couldn't have imagined in your wildest dreams.'

—F.R.





THE SOUND OF SUICIDE

by Ann Simer

Dick Parker flipped the "on" switch as the small group of volunteers moved closer to the tape machine. The tape snaked once, twice around the spool, then the burr of a telephone sounded. The receiver was lifted and a woman's voice said, "Suicide Prevention. May I help you?"

There was a long pause, broken only by the sound of heavy breathing at the other end of the line. Then, almost in a whisper, a man's voice said, "I don't know . . . I think I'm going to kill myself."

At a signal from Dr. George Kramer, training director for Suicide Prevention, Inc., of Corpus Christi, Texas, Dick Parker switched off the machine. Dr. Kramer turned to the class of volunteers.

"What would you do next?" he asked.

"Ask his name," said one volunteer.

"Find out where he is," another suggested.

And a third said simply, "Faint!"

Dr. Kramer smiled and motioned for Dick to start the tape again. The neophyte volunteers heard the Suicide Prevention worker's reply to the caller's threat of suicide.

"Why?" she said.

Dick stopped the tape again as Dr. Kramer explained.

"At this point a direct, personal question of the sort you suggested would probably cause the caller to become frightened and hang up. Instead, the volunteer tried to show him she was interested in him and—most important—she was not frightened by the thought of death."

As the simulated telephone conversation wound through the tape machine, the volunteer whose initial reaction to the suicide threat would have been to faint listened closely. By hearing how another, more experienced volunteer handled the call, she was able to store up practical, valuable tips to use the first time she served a telephone shift.

Tape recording simulated "crisis calls" for the suicide prevention group has been one of the most exciting jobs Dick Parker has undertaken. It has also proved to be worthwhile, money-wise. Although

Dick's work for the crisis intervention organization has been strictly on a voluntary, no-compensation basis, it has led to better financial things.

Suicide prevention is a fairly new phenomenon, and Corpus Christi's group was one of the first of many such centers which are springing up across the nation. Because the volunteers who man the telephone 24 hours a day must be thoroughly trained, weekly lectures by professionals in mental health were arranged by Dr. Kramer, a clinical psychologist. Dick, who originally volunteered to be a telephone worker, soon was called upon to tape record the lectures so that the tapes could be used for future training sessions.

Within a matter of several months he had acquired an impressive collection of recorded lectures on subjects such as these:

"How Schools Contribute to Mental Illness"

"The Neurotic Personality"

"The Loser Syndrome"

"The Social Function of Being a Hippie"

"Marital Discord and Suicide"

"Emergency Suicide Prevention Procedures"

"Suicide Among the College Population"

"Abnormal Sexual Behavior and Mental Health"

Today, Dick has close to fifty tapes recorded under the auspices of Suicide Prevention, Inc., ranging in length from 18 minutes to 2 hours 8 minutes. Realizing the wealth of "professional advice" he had at his fingertips, he compiled a list of the material for distribution to other suicide prevention centers, mental health associations and other organizations using non-professional volunteers. He offers tape copies of the lectures at reasonable prices and finds most groups quite responsive to the thought of hearing a lecture by a \$30-an-hour psychologist for less than \$10.

Dick Parker at 51 is a hustler—after 20 years in the Air Force you get the hustling habit. A native Texan, he retired from the Air Force in 1957 and now operates a pest control business in Corpus Christi as well as his side industry, R. L. Parker recordings. In addi-



tion to offering his services to record weddings, birthday parties and the like, he finds considerable demand for his services with organizations such as Suicide Prevention, Inc.

"Tape recordings are an invaluable contribution to such an organization," says Dick. And even if the group cannot afford to pay for the service, the cost of the tapes is tax deductible.

"Of course, there's a selling job involved in work of this sort," Dick remarked. "I couldn't have walked into a Suicide Prevention meeting cold, for instance, and whipped out my tape recorder. The volunteers maintain strict anonymity and their cases are kept confidential. But once they realized what a help these recordings could be, they were anxious to have me do the work."

Dick finds his Wollensak 5290 portable stereo machine does a fine job of recording voices. He uses a Realistic Pro 200 microphone system and finds he can use an extension cord up to 100 feet long with no loss of quality.

"My equipment setup is simple but it's effective," says Dick. "I can get in and out of meeting rooms quickly without disrupting the proceedings, and this is always appreciated."

He also owns a GE-TP1100B monaural system which he uses for copying work. Most of his taping is done at 3 $\frac{3}{4}$ ips, although he does switch to 1-7/8 for storage purposes.

For the suicide prevention volunteer, the most exciting and yet the most dreaded part of the training period comes at the end of the weeks of lectures. It is then that each volunteer must take a part in a "psychodrama"—a role-playing situation in which the new volunteer plays the part of the suicide prevention worker while one of the more seasoned volunteers portrays a suicidal caller. Sitting in straight chairs back to back, they go through an entire "call," with

the new volunteer attempting to win the "caller's" confidence and possibly to refer him to some helping agency. The psychodramas often become as emotionally charged as the actual calls taken in the Suicide Prevention office.

To prepare for this "ordeal by fire," the volunteers-in-training listen to a number of such simulated calls recorded by Dick Parker in earlier sessions. They are able then to discuss and evaluate the volunteer's ability, and to try to imagine what they would do in such a situation.

"It would be of great value to our training program if we could record the actual calls we receive at Suicide Prevention," says Dr. Kramer. But there are several obstacles to recording calls on the telephone, not the least of which is the legal angle.

"Most of our callers are quite concerned with anonymity," explains Dr. Kramer. "We assure them that their call is kept in strictest confidence, and in this way we are often able to elicit important information such as name, address and phone number. But the moment a caller hears that intermittent 'beep' which means his conversation is being recorded, he becomes suspicious and will usually hang up."

"Even if we don't play according to Hoyle," Dick adds, "that is, if we record the call without the beep so that the caller doesn't know, we find that the volunteer's effectiveness is lessened because he knows the call is being recorded for later evaluation."

It is impossible to know how many lives Suicide Prevention has saved. But Corpus Christi's suicide rate dropped 25% the first year the group was in operation. The volunteers believe that the thorough training they received in handling people in crisis was a contributing factor to this decline, and if that is true, then Dick Parker is entitled to some laurels of his own. For it was he who helped teach those volunteers how to tune in to trouble.

Will your tape recorder sound as good in December as it did in May?

How do you *know* that a tape recorder will sound as good in seven or eight months as it does when it's new? You obviously don't. Not with most. But you *do* with an Ampex player/recorder. Because of the exclusive, deep-gap Ampex heads.



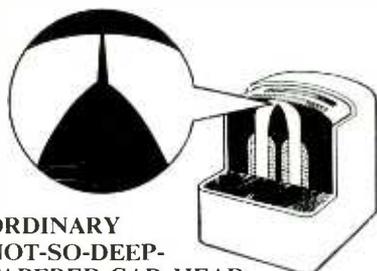
AMPEX 755 TAPE DECK

Let us explain. The head is the most important part of any player/recorder. It is an electromagnet which puts sound on magnetic tape (when recording) and recreates sound from patterns on the tape (playback).

The rest of the recorder is designed to do nothing more than get the most out of the heads.

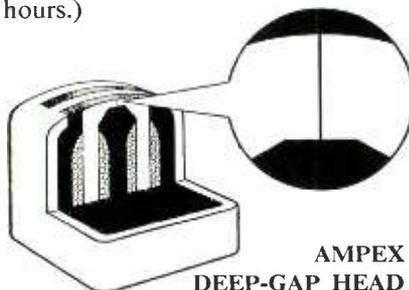
All tape heads are produced to have the smallest possible air gaps between their poles. Because the smaller the gap, the higher the frequency that can be recorded or played back at a given tape speed.

It would stand to reason then, that every manufacturer would try to make its head gaps as small as possible. And they do . . . at the *top* where the tape meets the head. The trouble is, they have a great deal of difficulty keeping the gaps *straight*.



ORDINARY NOT-SO-DEEP-TAPERED-GAP HEAD
(Typical head used by other manufacturers)

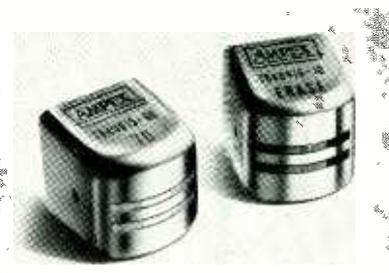
Take a look at the drawing of the ordinary tape head above. It has a pole gap distance of about 1/30th the width of a human hair. *To begin with.* But, as the head begins to wear down, the pole gap begins to widen. And the frequency response begins to deteriorate. So the unit can't possibly sound the same in December as it did in May. And in a relatively short time the head has to be replaced. We call this kind of typical head "*tapered shallow-gap head.*" (Under ordinary circumstances it wears out in 500 to 1000 hours.)



AMPEX DEEP-GAP HEAD
(Exclusively on Ampex Player/Recorders)

But *Ampex deep-gap heads* don't have that problem. Because they consist of two parallel poles brought together to the precisely proper distance by a unique process. This manufacturing technique is exclusive with Ampex. It's much more time consuming, and requires painstaking microscopic precision. But, it's worth it. Because, even as Ampex heads begin to wear down, *the gap distance continues to remain constant.* And so does your frequency response!

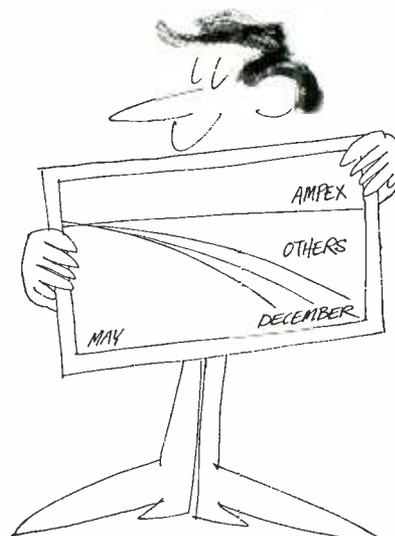
And in addition, because Ampex does not use pressure pads, Ampex deep-gap heads wear much more slowly. Don't be surprised if they last well over twelve years, even if you use your player/recorder two hours a night, every night. (That's about 10,000 hours, as compared to about 500-1000 for other tape heads.)



So, if you're confused by all kinds of claims for frequency response, remember that frequency response usually drops after use. Except with Ampex player/recorders. There's no mystery. (1) *Ampex heads last much longer.* (2) *Even when they do wear, the gap never varies and neither does the frequency response.* Which is why you'll be ahead with Ampex. Way ahead.

AMPEX

AMPEX CORPORATION/CONSUMER EQUIPMENT DIVISION
2201 WEST LUNT AVENUE/ELK GROVE, ILLINOIS 60007





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finest package
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audio-file

After we had developed BASF, the "ageless" recording tape, we realized it didn't make much sense to package it in an ordinary cardboard box offering only temporary protection at best.

A tape designed to preserve the original brilliance and fidelity of your recordings for generations deserves a permanent storage cabinet all its own.

So we packaged our tape in the "Perma-store" library box, a sturdy, decorator-styled container molded of rigid, impact-resistant plastic. The "Perma-store" package not only offers permanent protection against dirt and physical damage . . . it enables you to build a tape library that looks as good as it sounds.

And yet BASF, the world's finest tape and the only tape exclusively packaged in a permanent plastic container, costs no more than the tape you are buying now. All in all, it's the perfect tape for the audiophile's audio-file.

