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# TAPE RECORDING

VOL. 3 No. 2 JANUARY-FEBRUARY, 1956

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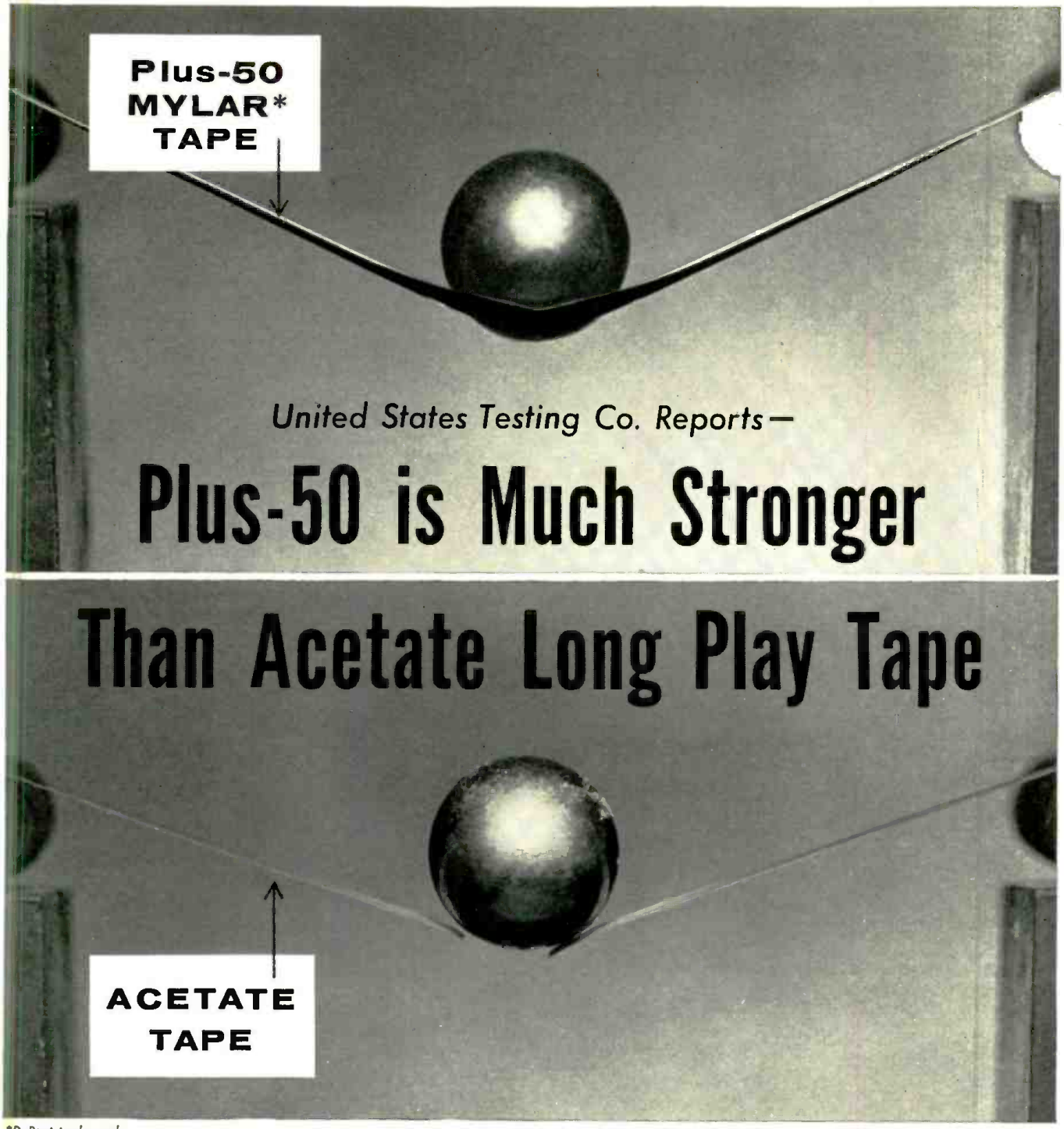


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# NEW TAPES

By Charles D. Sigsbee

You will notice several new labels in this issue and I am happy to report that the general quality of performance and reproduction is up, a trend that this magazine predicted was inevitable in the very first issue.

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## CLASSICAL

BRAHMS
Concerto #2, in B-flat, Opus 83
Artur Rubinstein, Pianist
Boston Symphony Orchestra
Charles Munch, Conductor
RCA VICTOR CC-6

Brahms was highly dissatisfied with his D-minor concerto and vowed, after its premier, "The next one will sound different." Twenty two years and 68 compositions later it appeared, and it *was* different. Different than any previous work for piano and orchestra by any composer.

Because of its major proportions, four movement form and the apparently minor role given to the solo instrument, it has often been referred to as "a symphony with piano obligato." Perhaps so with a pianist of lesser abilities than Mr. Rubinstein, but here the piano is dominant in the hands of the master, permitting the orchestra to share the score, but no more than that.

Together the pianist and conductor combine their understanding of the composer's intent to produce a work of the first magnitude. This together with RCA's superb sound is cause to label it as a major recording, a fact to be considered when building your basic tape library.

BRAHMS
Symphony #1, in C-minor, Opus 68
NBC Symphony Orchestra
Arturo Toscanini, Conductor
RCA VICTOR CC-8

Although the critics do not agree, I feel that here is the definitive interpretation of this work in our time. And, speaking of our time, let me point out to those who are inclined to doubt the productivity of men past forty, that Brahms was past forty when he produced this *First Symphony* and Toscanini was in his 85th year when he recorded it!

Toscanini conducts this recording with a drive and brilliance that is unmatched in any other recording of the work. The "old man" takes hold of his orchestra at the outset and doesn't relinquish his control for as much as one semidemiquaver throughout the entire work.

The engineers who were challenged in every recording to meet Toscanini's specifications, have made this one of the very best. I don't imagine that there will be a better recording of Brahm's 1st to come along for quite some time.

GERSHWIN
An American In Paris
Porgy And Bess (Suite)
Pro Musica Symphony of Hamburg
Hans Jurgen-Walther, Conductor
PHONOTAPES-SONORE PM-102

The conductor is conducting, the musicians are playing their very best but, at its best, the music is not George Gershwin. At least, not to my ears it isn't. The question is, why not? The orchestra plays well, the conductor has been applauded in this column for other things and the recording is excellent, so what happened?

My guess is that Gershwin's music is so idiomatic that when it is given a literal interpretation it becomes pedestrian. Gershwin is so American that it takes the American mind to interpret (or appreciate) him. This theory is somewhat substantiated by the fact that the *"Porgy And Bess"* suite, arranged by Robert Russell Bennett fares better because here only the thematic material is Gershwin's, the score is Bennett's.

HAYDN
Concerto for Trumpet in E-flat
Helmut Wobitsch, trumpet
Vienna State Opera Orchestra
Anton Heiller, Conductor

HAYDN
Concerto for Horn in D
Franz Koch, horn
Vienna Symphony Orchestra
Anton Heiller, Conductor

BACH
Concerto for Three Harpsichords in C

VIVALDI-BACH
Concerto for Four Harpsichords in A
Vienna Chamber Orchestra
Anton Heiller, Conductor
BERKSHIRE BH 1003

The trumpet concerto displays an amazing amount of virility in its construction as demonstrated here by Wobitsch and Heiller. The trumpet is flawlessly presented by the soloist and recorded better than most I have heard. It has a clear, natural sound without any of the piercing effect so often encountered in recordings of the instrument.

The orchestra and soloist are well presented, with good balance and chromatic control. In short, I don't believe that it could be done much better.

The horn concerto comes off fairly well, although the horn is not as well recorded as the trumpet. The balance between orchestra and soloist is about the same in both concerti.

The two Bach concerti are a positive delight to the ear. Heiler conducts Bach with a firm hand and pulls more from his



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orchestra than might be expected under the circumstances.

The solo instruments are back far enough so as not to be overpowering when alone, yet are in evidence during orchestral tutti. The harpsichordists are not identified, yet all seem to be virtuosi of the instrument.

Berkshire Tapes are, based on this, apparently going to be everything they claim in their advertising. If they can maintain the quality evident here, at their price (6.95), they have accomplished a tour de force.

**MOZART**
**Concerto #20, k.466**
Sondra Bianca, pianist
Hans Jurgen-Walther, conductor
Pro Musica Chamber Orchestra of Hamburg
**PHONOTAPES-SONORE PM 5003**

Miss Bianca and the orchestra get as much out of the second movement of this work as I have ever heard. A sentimental and understanding approach that thoroughly charms the listener.

The third movement keeps pace with the style set in the second, but the first finds some little disagreement between piano and orchestra. Perhaps not rehearsed as well, it does not impart the feeling of complete unity and rapport that exists in the last two movements.

I find that the balance between piano and orchestra, and sections in the latter, leaves nothing to be desired. The recording is clean and crisp, but with a slight hiss present unless the treble control is shaded a bit; on my copy, at least.

The minor faults mentioned should not deter anyone from getting the recording, as there aren't any better interpretations available at this time.

**MOZART**
**Don Giovanni (Arias)**
The Vienna Symphony Orchestra
The Vienna State Opera Chorus conducted by Hans Swarowsky
**BERKSHIRE BH-1006**

Although billed as "arias," the tape actually includes duets, trios, quartets and the whole first act finale as well. Thirteen selections in all, culled from Berkshire's recording of the complete opera which was made from the master tapes of the Hayden Society.

Performance-wise the recording is not at all bad, which does not mean that it is all good. Mariano Stabile's work as *Giovanni* is not what one would expect to hear in a title role. True, he is identified with the role through his performances at Milan's *La Scala,* so perhaps he should be seen in performance to gain an understanding of his apparent lack of control in this recording.

On the other extreme, is the magnificent voice of Alois Pernerstorfer as *Leporello.* He is a dramatic basso, whose spine-tingling first act aria, *Madamina, il catalogo è questo,* would be hard to beat anywhere.

The rest of the performances on this excerpt recording are quite good but the most outstanding things about the entire reel are the recorded sound and the enthusiasm of the performance. The dramatic interpretation of Hans Swarowsky is admirably enhanced by the clean, clear and chromatic sound.

Considering the fact that this is one of the few operatic recordings on tape (the only *Don Giovanni*), coupled with Berkshire's low price I would consider this a good buy, in spite of the deficiencies mentioned.

**RACHMANINOFF**
**Concerto #2 in C-minor, Opus 18**
Geza Anda, pianist
The Philharmonia Orchestra
Alceo Galliera
**COLUMBIA (BRITISH EMI) CAT 253**

This tape was very kindly loaned to me by A. E. Foster of the Newark College of Engineering with a suggestion that my reviews have refused to face more than a technical superiority. For awhile the American tape record industry didn't have much more than that, but it was *that* that brought about the current trend toward musical excellence.

I wouldn't claim that this EMI tape is any better, necessarily, than it's American brethren, certainly the ones received for review in this issue. It is, however, an excellent tape and we were happy to have the opportunity to review it.

Geza Anda delivers a sensitive and unique interpretation. I would say that the performance is, to date, my favorite, particularly the second movement, performed with infinite beauty and understanding of the composer's intent.

The orchestra and soloist are perfectly balanced and, together, deliver a definitive masterpiece that will last for some years to come.

**STRAUSS (Richard)**
**Don Quixote**
Boston Symphony Orchestra
Gregor Piatigorsky, Cellist
Richard Burgin, Violinist
Joseph de Pasquale, Violist
Charles Munch, Conductor
**RCA VICTOR BC-3**

I don't see how sound on tape could possibly get any better than this. I don't see it, but it undoubtedly will.

A powerfully beautiful recording that will stand definitively alone for some time to come. Piatigorsky is without peer as the *Don* and the Boston Orchestra has never sounded better, not even under Koussevitsky.

But most magnificent is the big, rich sound without a hint of distortion or frequency restriction anywhere. It is necessary to cut back the treble control about 10db even on NARTB equalized equipment.

**TCHAIKOWSKY**
**Symphony #6 in B-minor, Opus 74 (Pathetique)**
Oberammergau Festival Orchestra
Kurt Schwertfeger, Conductor
**BERKSHIRE B-2107**

Recording sleuths should have a good time with this one. To think that a little Bavarian village of 5000 souls has been harboring, and hiding, an orchestra of mas-



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sive and major proportions! And Kurt Schwertfeger (Oh, come now)!

The recording is magnificent, one of the best. It's chromatic mass, soaring strings and pyrotechnic bass should be exercising high fidelity equipment for some time to come. Coupled with Berkshire's low price ($6.95), its excellence should make it a big seller.

As to the recording's interpretive values, perhaps one should listen to it before buying because there are as many interpretations of the *"Pathetique"* as there are recordings. Which one is the definitive recording is a moot point because there are almost as many choices as there are critics.

Personally, I like it. For the average music-lover the symphony's principal appeal has always been an emotional one and this recording arouses the emotions, as do few others, no matter how cynically you approach it.

Sound system demonstrators, particularly those with the mammoth speaker rigs, should watch their volume when first playing this tape as the bass is quite lusty. If the volume control is too high during the quiet opening passages, the uninitiated will literally jump out of their shoes during the sudden, dramatic crescendo in the middle of the movement. The third movement will also cause labored breathing and twitching hair follicles under certain circumstances.

Because of its universal appeal to both music-lover and high fidelity fan, I feel that Berkshire has produced, in this recording, a solid hit.

## FOLK MUSIC

BALLADS OF THE CIVIL WAR
Sung by Hermes Nye with Guitar
PHONOTAPES P7T F5004

This is a Folkway's production that is as visual as it is aural. With the reel comes a 30-page booklet containing not only the words to the ballads but a great deal of interesting historical background as well.

Hermes Nye, an attorney by profession, is an engaging singer from Dallas who handles these songs in an authentic manner that will hold the listener spellbound throughout.

Included in the collection is a ballad, "Davy Crockett," not the one that drove you mad a few months ago, but one that was making the rounds in about 1836. It has to do with a fight that Davy had one day (lasted a day and a night) and is filled with 19th century Tennessee colloquialisms that arouse many a chuckle.

If you like the current hit song, "My Bonnie Blue Belle," then you may be interested to know that in its original, unexpurgated version it was a rousing song of secession.

In all, a successful recording and one that is a must for folk music collectors.

EARLY ENGLISH FOLK SONGS
Sung by Cynthia Gooding
AV 802 B
AV Tape Libraries

Cynthia Gooding is an uncommonly good folk singer. Her voice contains such a degree of timbre and clarity as to gain and command complete attention from her audience. Singing in her natural contralto register, she presents the story line with such enthusiasm that you find yourself listening to the narrative unfold without paying much attention, necessarily, to the musical development.

## POPULAR

DICK STEWART SINGS
George Wright, pipe organ
Trefoni Rizzi, guitar and electric guitar
Raymond Clevenger, drums, finger cymbals, effects
Verlye Mills, harp
Sam Cheifetz, bass
William Hamilton, Jr., saxophone, clarinet, flute
HIFITAPE R-401

An exciting adventure in sound from this new Hollywood recording company.

In spite of the title, the outstanding feature of the recording is the unusual instrumentation, not the singer. George Wright's arrangements of, "Ritual Fire Dance," "On A Little Street In Singapore," "At Long Last Love," and "Baia," along with the wonderful engineering job, make this a hi-fi tape find to complement the Wright organ recordings.

Stewart is not a bad singer but, at this stage of his development, he is no world-beater either. However, he is good enough to uphold his end of this recording and, as we said, here the recording's the thing.

EASY LISTENING MUSIC
Bill Andrews, Hammond Organ
CONSOLE TAPE (Wayne, Pa.)

A full hour-plus of electric organ from the company that has set the standard for recording this instrument. A different organist this time, but his style is easy to take and pretty original on the second side.

Side #1 consists of straight arrangements of selections from the Operettas, *"Student Prince," "Desert Song,"* and *"New Moon."* I will label these, "Sing-A-Longs," because that is just what you will do for the most part. I only wish that Mr. Williams had picked up the tempo a bit at spots, I flat on sustained notes. Wonder how "Sing-A-Longs" would go as a commercial recording idea? Hi-fi in the bathroom!

Side #2 is more stylized than the first, with some of the selections sounding suspiciously like multiple track recording. In all, a highly satisfactory tape.

## MISCELLANEOUS

A Child's Garden of Verses—Robert L. Stevenson
Sung by Russell Oberlin
TAPE-OF-THE-MONTH B509-A

The record jacket says absolutely nothing about the method of presentation. Here are the familiar lines in a new dress; sung by tenor Oberlin, accompanied by piano and brass!

I am not sure that I prefer it this way, although I haven't lived with it long enough to say for sure. I feel that I would rather hear them from a spoken voice, or perhaps a different approach to the music. The way they are presented upsets my dream illusion of them after all these years, but perhaps it will suit you just fine.

The recording is excellent and, as I say, it's all there, it's just that those doggoned trumpets. . . . Well, you try it and see what you think.



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# TAPE IN EDUCATION

By John J. Grady, Jr.

THIS being the time when both predictions and resolutions for the New Year are in order, a few predictions are presented relative to Tape Recording in Education. They are completely logical and are capable of attainment.

The educators of the nation, many many thousands of them—administrators as well as teachers—welcome the proved efficiency of tape recording as an instructional function. And thousands upon thousands of schools and colleges, particularly those with huge student bodies, where teachers are handicapped by large classes and double sessions, all of them are ready for the installation of tape recording and playback equipment.

The following predictions, if accompanied by parallel resolutions of co-operation from the Tape Recording Industry are certain to be speeding towards attainment in 1956. Educators—parents, too—are urged to use this Educational Section of TAPE RECORDING to present added predictions, to make suggestions, to file peeves, and to seek information relative to Tape Recording in Education. Address mail to Educational Section, TAPE RECORDING, Severna Park, Md.

1. Every classroom in the nation will be equipped with a playback unit for auditioning 1⅞, 3¾, 7½ and 15 IPS tapes.

2. Tape recorders, designed for 1⅞-3¾ IPS taping, so satisfactory and economical for speech practice and instruction, will be easily available.

3. Instructors in Speech, Music and Drama, all will have tape recorders. (Let's have a lot of support on this one. Why should Physical Ed. rate ALL the equipment?)

4. Adult Education will be expedited by Tape Recording.

5. Top notch Audio-Visual instructors, capable of producing auditorium-filling programs will begin to approach the salaries of football coaches. ("Note: begin to approach")

6. Some university or college music department will produce a magnificent nostalgic CAMPUS MEMORIES tape, featuring glee club, chorus, choir, band and orchestra in Alma Mater favorites. Blended with cheering section yells, pep talks, and the narration covering the old well, the petrified toad stool, the malt joint and such like, the tape will be a "must" for alumni.

• • • • • • • •

## EDUCATIONAL NOTES

A new PENTRON tape recorder was presented to Brattleboro, Vt., High School, by the Class of 1905. This class of oldsters, at a 50th reunion, recognizing the value of being articulate in the highly competitive commercial life, which graduates enter after schooldays, recommended tape recording as a modern instructional procedure for the benefit of ambitious students of Speech.

Leland C. Smith, Professor, Industrial Design Division, Alabama Polytechnic Institute, Auburn, Ala., desires to compare notes with other Audio-Visual experimenters. Synchronization of both moving and still projections, with sound in a single mobile automatic unit for educational lectures, is an objective. Here's an opportunity for a TR manufacturer, with a shop well-equipped for research and parts-making, to co-operate with an in-the-field designer. Prof. Smith has roughed a serviceable unit, but mechanical refinements will result in a valuable piece of equipment. What an instructional tool for medical schools and clinics!

Robert M. Coleman, Brookyn, N. Y., is proving better days are on the way for teachers. In addition to tape-recording various current from-the-air programs, appropriate musical and historical material for his classes, he personally records tapes for future class work. Where a feminine voice is advantageous he utilizes the vocal talent of a younger sister. Pictures and illustrations associated with the taped subjects are filed along with a list of questions for class discussion. That's smart organization. Mr. Coleman states that his tape recorder produces free time for him. This time is available for more parent conferences, for individual instruction where needed, and to dispose of teachers' pet plague—routine desk work.

Francis E. X. Dance, M. A., Instructor in Speech, Graduate School, U. S. Dept. of Agriculture, Arlington, Va. Many speech instructors feel as you do about the personal ownership of economical-in-tape 1⅞-3¾ IPS tape recorders. They are available, but not many dealers stock them, nor are sales personnel trained to cater to the huge market of Speech devotees. An inquiry to manufacturers advertising in TAPE RECORDING will get action. Re pre-recorded educational tapes: The Dept. of Ed. in some states are establishing splendid libraries of master tapes. In other states there will have to be considerable needling. More on this subject next issue.

Helen F. Cutting, Department of Romance Languages, The Woman's College, U. of North Carolina, Greensboro, N. C., desires a Spanish language brochure describing a tape recorder. Suggestion: Contact Prof. James A. Cuneo, U. of Minnesota, Minneapolis 14, Minn.

Lucky Ed Krist, lucky at this time of year, is dared to send a photo of students using a tape recorder under palm tress, by a swimming pool, in fabulous sunny Palm Springs, California.



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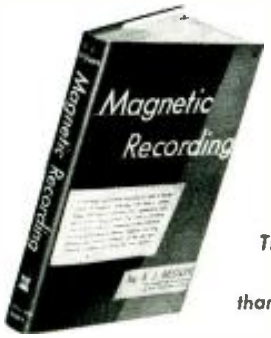


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# TEEN TAPERS

By Jerry Heisler, National President

We're back again Teen-Tapers, and more enthused than ever. I've heard from a number of you since the last issue, and it's great to know that you have interest and enthusiasm for that's the most important item. Last time we said that we'd talk about starting some school recording clubs so let's get right at it.

We feel that one of the best ways for teens interested in recording to become more active is to start a tape club at school. I've started one at my school and it's going along great, and there's no reason why you can't do the same thing. Briefly, here's what it takes.

First we assume that your school either owns or has access to a tape recorder, some tape, and a microphone. The only other things needed are some interest and a little hard work to start out with. Now, contact the person in your faculty who would most likely be interested in this project. Likely people are, audio-visual directors, science teachers, speech teachers, or any other interested teacher. Once you have this faculty member interested you have a great share of the work done. He can stir up interest and get the cooperation of other faculty members. He can also help with another important thing, getting permission to operate the club. Now you're set to call your first meeting.

Get an enthusiastic announcement made to the effect that a new, different, and interesting group is being formed for those students who are interested in tape-recording, radio broadcasting, dramatic reading, tape correspondence, and so forth. At the first meeting your big job is to retain the obvious interest in the group shown by those who attend.

Throw some suggestions out for discussion as to what the club could do around school both for fun and for school service. Some ideas are: learn how to operate equipment and make good recordings; make a memory album of interesting events (a sort of yearbook in sound); produce taped radio programs for broadcast throughout the school; exchange tapes with schools throughout the country and world; provide recordings for departments of the school. With these suggestions you'll be surprised at the interest you'll start up and before you know it the members will have many more ideas of their own and will be very anxious to get started. At this point, you should end the first meeting on a high note of enthusiasm, and make plans for the second meeting at which time the club will really get organized.

At meeting number two, we really get rolling. An election of officers is in order, and all necessary action is started to get the club officially recognized. In my school, permission must be obtained from the student council after a charter is drawn up. Once the president is selected, discussion should be opened as to just what areas the club wishes to specialize in, be it general recording, radio broadcasting, tape responding, or what have you. This choice will govern your actions. Whatever you choose you should make immediate plans to start at it right away. A lot of discussion will cause the members to get bored, while immediately starting out on a project will bolster interest. If you're going to broadcast, plan a show; if you decide to begin a memory album, pick out the next important event coming up and plan to record it.

Also plan on having the audio visual director, principal, dealer, or some one else well versed in recording, drop around at your next meeting and give a demonstration and short course on recording. Since your activities center around recording, this is very important.

There you have the basic idea. We've told you how to set up the organization, and get started. Once you're started you'll naturally proceed along your own special interests and can have as much fun as you care to provide for yourself.

Teen-Tapers is here for you and to help you with your interests. All through the year we will be giving to you suggestion aids and projects. We'll exchange ideas, and answer your questions. We have a number of things in the planning right now. In short order, we'll have the official Teen-Tapers Club charter, and membership cards ready, as well as a detailed outline on how to operate your club. Tape Recording is also going to offer us a special Tape Club group subscription rate. Once you have your club planned or organized, let us know about it so that we can include your group as an official Teen Taper Club.

All Teen-Taper Clubs will be requested to write to us telling of their activities so we can compare notes. Outside of the opportunity of exchanging ideas, the services of Teen-Tapers column, the reduced subscription rate, and the opportunity for meeting other tape clubs around the world, the clubs will be independent and unrestricted. How about it? Sound interesting? Get going now and start a tape club among your schoolmates and when you do, be sure and let us know so you can become a member of our group.

We want to take a minute here to thank those who dropped us a line. Alan Caruba, down at the University of Miami in sunny Florida, says the column looks interesting to him. Garry Ball, at the University of Nebraska Ag school, writes to tell us that when some of these clubs get going the radio station at the U will be glad to exchange tapes. We heard from John L. Ott out Pittsburgh, Pa., way, and John is also very enthusiastic. My very good friend via tape, Roy Trumbull, in Corte Madera, California,



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has also sent in a lot of ideas and he is anxious to see what we teens can do.

You'll be interested in the story which appears on pages 40 and 41 of this issue. Jimmy Sterrett, a high school student, found a way to make his tape recording hobby pay and had a lot of fun doing it. There's no reason why other teen agers in high school couldn't do exactly the same thing. All it takes is a recorder, a bit of imagination and some leg work.

Let us hear from you now, and tell us of your interests. If your school wants some suggestions let us know, and also write in for our Teen-Tapers kit with more detailed information. It is now in preparation and will be sent as soon as it is ready. We're anxious to hear from all teens, whether in clubs or not, and whether in high school or college. Keep 'em spinning gang and we'll be taping you soon.

### Ten Steps To A Tape Club

1. Get a faculty sponsor interested.
2. Round up a tape recorder.
3. Publicize the group.
4. Call a meeting and discuss the club.
5. 2nd meeting: organize and elect officers.
6. 3rd meeting: start rolling. Have demonstration on recording.
7. Plan into the future for projects.
8. Read Teen-Tapers for suggestions and ideas.
9. Write to Teen-Tapers, c/o TAPE RECORDING Magazine, Severna Park, Md., for details, charter, and membership cards, which will be ready shortly. Be among the first to have your name listed to receive these.
10. Have loads of fun with your club.


STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF Magnetic Film and Tape Recording published bi-monthly at Severna Park, Md.

1. The names and addresses of the publisher, editor, managing editor, and business managers are:
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# NEW PRODUCTS

## DYNAMU STEREO PLAYBACK

Dynamu Magnetronics Corporation, Maico Building, Minneapolis 1, Minn., has introduced the Dynamu Duosonic stereophonic tape playback. It is a 2-piece unit, encased in mahogany wood cabinets, and features a binaural tape transport with extended range Dynamu playback heads and a matched set of two preamps, two amplifiers and two speakers. The unit also plays monaural tapes, and it is priced at $249.50. For complete specifications and information, contact the manufacturer at the above address.

## EMERSON 900

Emerson Radio and Phonograph Corp., Fifth Avenue at 59th Street, New York 19, N. Y., recently introduced the Emerson Model 900 tape recorder. This machine features a single central control that selects the tape direction; auxiliary controls which select playing speed, set volume, record or play back, adjust bass-treble response, and, when desired, cut out the speaker during recording; and an automatic locking device to prevent accidental tape erasure. Model 900 is housed in a handsome, compact, scuff-resistant cabinet, smartly styled in shades of green. It is priced at $192, and comes complete with a crystal microphone, power supply cord, a reel of sound recording tape and one take-up reel. For additional information and specifications, write to Emerson.

## OMISSION

Acknowledgment of photographs used in the article entitled "Tape Your Way to Folk Dance Fun," in the last issue, was omitted. Credit is due Sandra Rosebrook, Jud Spencer, and Ross Wagar for most of the pictures.

## ORRADIO FOLDER

A new folder entitled "How Magnetic Tape is Made," which completely describes and illustrates in six photos every step in the manufacture of magnetic recording tape, from start to finish, is being offered free on request by ORRadio Industries, the manufacturers of Irish Ferro-Sheen tapes. It contains a great deal of information about the quality control, as well as the manufacture, of the tape. For your free copy, write to ORRadio Industries, Inc., Department 72, Opelika, Alabama.

## PERMOFLUX MAESTRO

Permoflux Corporation, 4900 West Grand Avenue, Chicago 39, Illinois, has announced the release of the "Maestro" speaker-headset control box which permits the use of headphones with any high-fidelity installation. The "Maestro" contains a volume control; has two jacks, and the case has a mahogany finish and gold finished perforated front panel. The control box is priced at $10.50 net and additional information is available from Permoflux.

## SCOTCH 150 TAPE

Minnesota Mining and Manufacturing Company, 900 Fauquier Ave., St. Paul 6, Minn., has introduced "Scotch" magnetic tape No. 150, which offers 50 per cent more recording time than conventional tapes. It features one-mil polyester "weather-balanced" backing made from DuPont Mylar film for resistance to changes in temperature and humidity and also for greater strength. This tape is maroon in color and is available in lengths of 900, 1800, 3600, and 7200 feet. It is priced at $7.95 for 1800 feet on a 7" reel. Further information may be obtained from the manufacturer.



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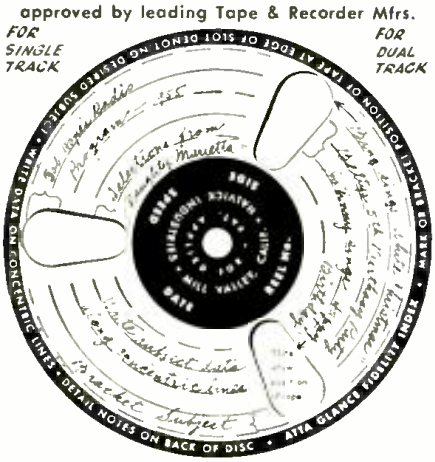


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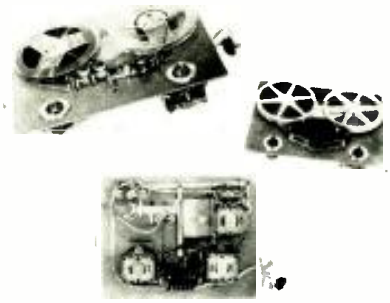
## FEN-TONE TAPE DECK



Fenton Co., 15 Moore St., New York 4, N. Y., has introduced a new 3-speed tape deck, the Fen-tone Brenell Hi-Fi. It has three independent motors — capstan, feed and take-up; is provided with instantaneous mechanical braking; permits either 3¾ and 7½ or 7½ and 15 ips operation; has frequency response 50-12,000 cps at 7½ and 30-15,000 cps at 15 ips; wow and flutter is well under 0.2%; and the Brenell Hi-Fi heads are completely mumetal-shielded to eliminate any 60 cycle hum and they meet all NARTB requirements.

This unit is priced at $79.50 audiophile net. Additional information is available from the manufacturer.

## TURNER "CHIEF"

The Turner Company, 948 17th Street, N.E., Cedar Rapids, Iowa, is marketing a new desk mike designated "The Chief," which is recommended by Turner engineers for amateur, P.A., tape recording and similar uses. Model 807 is "The Chief" with a ceramic interior which has a frequency response of 80-7,000 cps with a level of -55 db; Model 808 has a crystal interior which provides a response of 70-7,000 cps with a level of -46 db; Model 809 of "The Chief" series has a new magnetic interior, response of 100-8,000 cps and a level of -52 db. All models have a die-cast alloy case, baked-on grey enamel finish, 6 feet attached fabric covered cable and standard ⅝" 27-thread adapter for stand mounting. Prices range as follows: $10.85—Models 807 and 808; $14.95—Model 809. Further inquiries may be made to the Turner Company.

**Meet Hermon Hosmer Scott, Audio Pioneer!**

Mr. Scott is well known for his significant contributions in measuring and reducing noise. Scott noise level meters and analyzers are widely used in industrial laboratories and Scott's remarkable invention, the Dynamic Noise Suppressor, uncannily eliminates noise from all records and poor broadcast reception without any loss of music. As every audiophile knows, Scott manufactures a most distinguished line of audio equipment.

Typical of the quality components that bear the Scott name is the versatile 210-D, a combination preamp-equalizer, power amplifier, Dynamic Noise Suppressor, and featuring unusually complete tape recording facilities. "In designing equipment for perfectionists," says Scott, "associated components must be of equivalent caliber. We find the wide dynamic range and tonal response of the Berlant Concertone most useful in our laboratory test and design work. Of equal importance, we find we can depend on it in continuous daily operation."

Visit your Berlant-Concertone distributor this week for a demonstration of the unusual features that have made Berlant-Concertone the first choice of audiophiles, according to a recent independent survey The Concertone recorder is priced from $445. The Berlant Recorder with hysteresis synchronous motor, specifically designed for broadcast and recording use, from $595. Both recorders are available as complete sound systems with matching playback amplifiers and speakers. For detailed literature fully describing these recorders, write Dept. 15-J

H. H. Scott — Berlant-Concertone

210-D Amplifier

personal choice of leading audio manufacturers

Berlant Concertone

Audio Division of American Electronics, Inc.
655 West Washington Boulevard
Los Angeles 15, California
Consult Recordata Division
for industrial requirements



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## TAPER TREND TABLE

Taper Trend Products, 320 N. Webster, Naperville, Illinois, is marketing a new steel table which is adjustable to various sizes of TV sets, recnrders, phonographs, etc. This table has 3-sided triangular tapered legs which are rubber tipped and will not mar floors or carpets, and is available in black, gold bronze, or maroon finish. The table dimensions are 18" high, 21" deep, with an adjustable width. Complete information and price is obtainable by writing to Taper Trend, above address.

## AMPRO "CONSOLETTE"

Ampro Corporation, 2835 N. Western Ave., Chicago 18, Ill., has introduced two new model "Consolette" tape recorders, the 757M and 757B. Designed to fit into any home decor, these handsome instruments are available in either Honduras red mahogany or "Prima-Vera" blond wood finished cabinets. They feature an electronically-balanced two-speaker system, an amplifier bypass for high fidelity hook-ups, frequency response of 40-12,500 cycles per second, 3¾ and 7½ inches per second speeds, electro-magnetic piano-key controls, automatic selection locator, and an electron eye recording level indicator. The price of the "Consolette" mndels is $279.95 for either; matching stands are available at $17.50; and recorder-radio combinations are also available at $34.50 extra. Write to Ampro for complete details.

## MAGNECORD CITATION

A new streamlined tape recorder, the "Citation," F35-B model, has been introduced by Magnecord, Inc., 1101 S. Kilbourn Ave., Chicago 24, Illinois. This machine is two speed: at 3¾ ips frequency response is from 50 to over 5,000 cps, plus or minus 2 db; and at 7½ ips frequency response is from 50 to over 10,000 cps, plus nr minus 2 db. It also has a phone jack on front, high impedance microphone input, an illuminated V.U. meter, a built-in pre-amplifier, a 6" x 9" speaker, and a control knob with safety interlock to prevent accidental erasing. The "Citatinn" has a signal to noise ratio of 45 db—half track, .3% flutter, is styled in a brown leather case with a satin gold and ivory paneled face with ivory controls and inset detail in gold, and is priced at $349. Complete information is available from Magnecord, Inc., above address.

## E-V PATRICIAN IV

The Patrician IV high-fidelity 4-way loudspeaker system has been announced by Electro-Voice, Buchanan, Michigan. This unit is tailored to fit the corner of a room, and it has three special controls for proper balance to room acoustics. The manufacturer claims that it provides a tremendous sweep and brilliance of reproduction and minimizes intermodulation and transient distortion. The Patrician IV features the finest hardwoods with Blonde or Mahogany veneers in hand-rubbed finish and is priced at $772.50 net. For complete information, write to Electro-Voice, above address.

## "AMPEX PLAYBACK"

Ampex Corporation, 934 Charter Street, Redwood City, Calif., is now issuing a small pamphlet called the "Ampex Playback," which features information concerning Ampex advancements, activities, facilities and personnel. This monthly publication will be an up to date summation of Ampex products and policies. A copy may be had free of charge by writing to Ampex.



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**PUSH-BUTTON KNIGHT TOP QUALITY AUTOMATIC TAPE RECORDER**

Judged "Best Buy" among recording experts. Features Push-Button Keyboard for instant recording with remarkably faithful reproduction. Has 2-speed dual-track recording mechanism and efficient erase system. Records up to 2 hours on a single tape. For instant playback, just push a button; push-button control of forward, reverse and stop functions. Records from mike, radio or phonograph. Compact—only 23 lbs. With microphone, 600-ft. reel of tape and take-up reel.

96 RZ 675. *Only* ..... $89.95

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Buying guide to everything in electronics, including all equipment for the tape recordist: complete recorders, basic mechanisms, amplifiers, mixers, microphones, head demagnetizers, telephone pickups, recording tape, splicers, leader and timing tape, accessories. Write for Free copy today.

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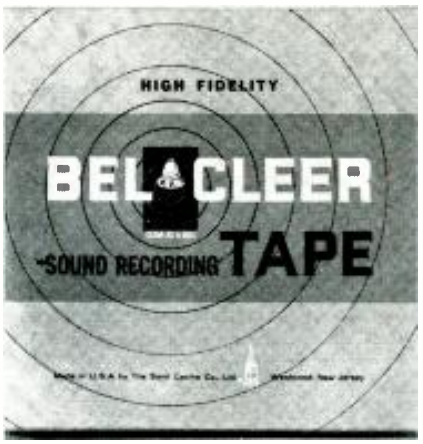
## NEW BEL CLEER TAPE




The Saint Cecilia Co., Ltd., P.O. Box 55, Westwood, N. J., a newcomer to the tape field, is now marketing "Bel Cleer" sound recording tape. It is available in either acetate or Mylar base, and in standard sizes or bulk. Mylar base features claimed by the manufacturer include extended frequency range, virtual elimination of drop-outs, head wear reduction, and unexcelled adhesion of oxide to the film, as well as protection against temperature changes. Each reel of tape is packaged in a dust proof polyethylene bag prior to being placed in its attractive hinged box. For additional information and price, write to The Saint Cecilia Co., Ltd., above address.

## UNIVERSITY MASTER

University Loudspeakers, Inc., 80 S. Kensico Ave., White Plains, N. Y., has just introduced the Master, a "Decor-Coustic" 3-way speaker system. The speaker and network components used in the Master are the University C15W dual impedance woofer for rich sonorous bass, the 4409 "reciprocating flares" horn speaker for full-bodied mid-range, and the HF-206 super-tweeter for smooth, brilliant highs to beyond the range of audibility. Crossing over at 700 and 5000 cycles through the N-3 Acoustic Baton, precise adjustment to room acoustics is maintained with the built-in "brilliance" and "presence" controls. Available finishes are Cherry and Blond Mahogany, and the system measures only 37" H. x 28" W. x 19¼" D. For additional information and price, write to University Loudspeakers, Inc.


# NEW! PENTRON *Emperor* 3 Speaker Hi-Fi Tape Recorder

**with SEPARATE "ROVING" SPEAKER**

$249.50 LIST

Most complete line . . . $139.95 UP

Other '56 models, $129.50 to $595.00

**. . . exclusive UniMagic Control**

Only the new Pentron Emperor recorder offers this newest concept in audio pleasure. The Emperor's "roving" tweeter in a separate baffle, perfectly balanced with 2 heavy duty woofers in the recorder, reweaves the whole complex beauty of the music even at low volume. Don't miss the experience. Hear and feel this difference in audio dimension — see the Emperor's bold incomparable styling at your Pentron dealer.

Push pull 10-watt amplifier. VU meter. Automatic index counter. Instantaneous braking. Frequency response 40-12,000 cps.

LARGEST EXCLUSIVE MAKER PENTRON OF TAPE RECORDERS

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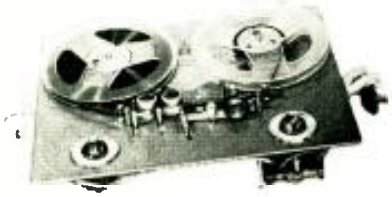

**Fen-tone - Brenell Hi-Fi**
**THREE-SPEED TAPE DECK**

At last, YOU can have tape in your High Fidelity system. Here is the tape deck that meets NARTB requirements and actually is in world-wide use in broadcast stations. Three speeds (3¾ ips, 7½ ips, 15 ips), three motors, heads in mu-metal shields which effectively eliminate any 50 or 60 cycles hum of motors and transformers. Record/Playback head has novel azimuth adjustment making it ideal for playback of all makes of pre-recorded tapes 7" reels.

**Audiophile Net ..... $79.50**

**Fen-tone PRO-2**
**TAPE PREAMPLIFIER**

Designed to provide Hi-Fi recording amplifications and playback pre-amplifications and bias/erase oscillator stage for both MOTEK and BRENELL decks. Three position NARTB equalization. Outstanding features: VU-Record level meter; —62 db Hi-Z mike input; 0.5 volt Hi-Level high input; 3-way switch selected inputs; all inputs on front panel and another Hi-Level on rear panel; Response 30 — 17,500 cps, ± 2 db.

**Audiophile Net ..... $79.50**

**FREE!** 1956 *Fen-tone* Catalog. The above are only samples of the many terrific values in the new 1956 Fen-Tone Hi-Fi catalog including mikes, tape decks, cartridges, record changers, silent listening devices, etc.

**FENTON COMPANY**
**15 Moore Street, New York 4, N.Y.**

*Sold through better Audio Distributors. See yours today!*

West of Rockies, prices slightly higher.

See us at the Los Angeles Hi Fi Music Show, Room 456

# QUESTIONS & ANSWERS

**Questions for this department may be sent on tape or by means of a postcard or letter. Please address your queries to, "Questions and Answers," Film and TAPE RECORDING, Severna Park, Maryland. The most interesting and widely applicable questions will be used in this department and all inquiries will receive a tape or letter reply.**

**Q**—I would appreciate your opinion of how permanent recordings on tape are. I have been offered a fair price for my record collection and was wondering if I could transfer the records to tape, sell the records and then depend upon the tape to store my collection. Would the sound on the tape evenually fade?—J. W. S., Amarillo, Texas.

**A**—*There are quite a number of people who have already done what you are contemplating, not only to dispose of the records but to save space.*

*Tape recordings made years ago are still good as new and with the recent advent of the new Mylar-based tapes the storage and aging problems are completely eliminated. The tapes should be kept at room temperature or lower and away from any magnetic fields which would affect the recordings. Otherwise no special precautions are necessary.*

**Q**—Recently a friend and I each purchased the same make of recorder. My friend's recorder is a double track and mine is a full track. I have tried to make duplicate tapes on both of these recorders in connection to another make of recorder. On the newly recorded tape on my recorder there is no quality whatsoever. Could it be a mis-match? What would you advise me to do to get a good quality duplicate tape?—L. F. B., Saginaw, Mich.

**A**—*Your trouble can be one of three different things which can happen between any two recorders regardless of make. 1—In making your connection be sure you connect the high impedance output of one recorder to the high impedance input on the other. 2—Be sure that both machines are connected to the same power supply. If the two are plugged into different light outlets noise and hum can develop which will interefere with the quality of the recordings. 3—The proper type of cord must be used for the interconnection. This should be a shield, single-conductor microphone cord with the proper type of plug at each end.*

**Q**—When I use my recorder and the microphone with the wire supplied I get excellent results. If I add one or more extensions I get a very annoying hum. The cables I am using are heavy duty, shielded and plastic covered. The line jacks and plugs are also shielded. Can you advise what the cause of the hum is and what I can do to correct it? This hum is also pesent when mixing several mikes thru an electronic mixer.—E. A. L., Shillington, Pa.

**A**—*Some of the ccrystal mikes are high impedance and are particularly susceptible to hum, as are some pre-amplifiers due to design characteristics. Try grounding the shield of the microphone cable to the frame of the microphone. If this is already placed and does not eliminate the hum your only recourse is a one-to-one isolation transformer having high impedance or low to high used with a low impedance microphone provided, of course, that your recorder pre-amplifier has sufficient gain. The isolation also applies to your mixer problem in which you are getting some of the ground return noise.*

**Q**—I have a rather odd bit of trouble about which I do not know what to do. There is a 21" TV set nearby which is not on the same power line yet it causes my radio to oscillate and ruins some recordings. What would cause this and how can it be corrected?—J. T. Z., Micco, Fla.

**A**—*Certain types of oscillators in TV sets do radiate a signal especially in the region of 15,750 cycles per second. We are unable to say how it is getting into your radio but we rather suspect it is traveling the power lines. We would suggest that you try a "brute-force" filter on the AC line to determine if this is the cause of the trouble. The sweep circuit of the TV set should be shielded also. A second possibility is that either the TV antenna or the power line is acting as a radiator, actually broadcasting a signal that your radio picks up. You can call your locacl FCC agent to find the name of your local TVI committee to whom you can tell your problem. These committees are usually made up of radio hams who keep TV set owners happy by fixing filters on the sets to trap interference caused by ham radio stations. In your case the shoe is on the other foot—you have a TV set that is causing interference in the broadcast band.*

**Console**
EASY LISTENING MUSIC
**TAPE**

**TAPE NO. 4**
**BILL ANDREWS**
**"EASY LISTENING MUSIC"**

SELECTIONS: Student Prince, Desert Song, New Moon, each with its selection of songs, 17 numbers in all; Side No. 1.

Beyond The Blue Horizon, Tip Toe Thru The Tulips, Penthouse Serenade, As Time Goes By, Paper Doll, Hot Canary—16 numbers in all; Side No. 2.

ALSO: Tape No. 1 and Tape No. 2, Organ Selections by Ralph Reeds. You'll like them.

7" Reel. 7½ i.p.s., Dual Track. $10.95 ea.

Dealer Inquiry Invited

**CONSOLE RECORDING STUDIOS**
**Wayne, Penna.**



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# TAPES TO THE EDITOR

**When sending tapes to the editor please use the 3" reel and indicate the speed at which it was recorded and whether it is dual or single track. We will listen to your tape, make notes from it for use in this column and then reply on your tape. Please keep tapes reasonably brief.**

**If you do not own a recorder a letter will be acceptable. Address tapes or letters to: The Editor, Film and TAPE RECORDING, Severna Park, Md.**

To the Editor:

The uses of a recorder are many and varied but here is a use that will be new to many of the readers of TAPE RECORDING magazine. This subject is one which a few years ago was laughed off as a joke. Today many thinking people including scientists, find much food for thought in this study. It is the study of flying saucers. Thousands and thousands of sightings have been made, many books have been written about it and flying saucer research groups have sprung up all over the world. This may seem like science fiction to many but they have not studied the vast amount of material that is rapidly accumulating.

In California there is a Mr. George Adamski who has written two books on flying saucers, the first entitled "The Flying Saucers Have Landed," and the second, a new book, "Inside the Space Ship," in which he relates the startling experiences of meeting the visitors from outer space and riding in their space ships. He brings a wonderful message from the space people to the earth people. Of course this has caused a great deal of controversy and criticism. Much of this criticism has been directed against these books and Mr. Adamski.

But now those who have tape recorders may hear Mr. Adamski speak for himself. He has prepared a series of tape-recorded lectures, the first of which is now ready. These lectures will help remove the veil of secrecy that now surrounds the flying saucers. The most unusual feature of this announcement is that these lectures may be obtained free of charge by any who desire to hear them. This is what you should do.

First, send your written request to either myself, Dr. A. G. Dittmar, Ausable Forks, New York, if you live in the east or in the south. If you live in the west or midwest send your request to Mr. Henry M. Henriksen, 1312 Grove Ave., Racine 4, Wisconsin. Those living in foreign countries may choose either source.

The second thing to do is to send a reel of plastic tape having a recording time of 45 minutes. Third, to include a sufficient amount for return postage and correspondence. Fourth: state the track and speed requirements of your recorder. It is suggested that 7.5 ips be used whenever possible for higher fidelity. Fifth: state the size of the listening audience. All requests from individuals and smaller groups will be honored but it is suggested that as large a group as possible be formed to hear the tape so that it will be performing the greatest service. Preference will be given to those who request recordings to be played for larger groups and will be answered in that order—however, all requests will be honored. Since these copies will be made upon your own tape they will become your property and you may play and copy them as desired.

We hope you will pass this information along to the readers of TAPE RECORDING magazine as we believe a great many of them will be interested in details on the flying saucers.—*Dr. A. G. Dittmar, Ausable Forks, New York.*

To the Editor:

Regarding a suggestion made in a recent letter to the editor, I have been reading for the blind for some time. If everyone would do it, it would be a fine thing. Then the blind would be able to enjoy current up-to-date magazines. There is plenty of material available for the blind on discs but these are all books. They appreciate being up-to-date as much as anyone and I make up a 3 hour 7" Mylar tape every week or so for a blind friend.

Your correspondent suggested getting someone to read material on to the tape for pay, perhaps a high school student. I would be glad to read for pay for anyone who wants it but I will not accept any pay from the blind. I would be glad to have readers write or tape me if they want someone to read to them on tape. I am quite sure I would be unable to take on many people to read to but perhaps I could act as a clearing house for both parties and get a lot of folks together that way.

Such a program might be very helpful to blind people and give others an opportunity to help the blind. Also, it could be a source of income for a "reader" in serving someone willing to pay the bill who is not blind.—*Phil Keltner, 10037 Samoa Avenue, Tujunga, California.*

*There's a double barreled opportunity for those who would rather listen than look—or for those who would like to help the blind by reading current literature on tape. If you're inclined in either direction drop a tape or letter to Mr. Keltner. Ed.*

To the Editor:

I have just read my first copy of your magazine. I think it is really "great!" I only wish I had back copies of it. Keep up your wonderful articles. They are helpful to me, a neophyte in the hobby.—*R. Floyd, Englewood, N. J.*

*The Back Issues department still has some left and will be glad to take care of reader requests at the regular newsstand price. Ed.*

To the Editor:

Perhaps some of your readers have taped Robert Weede singing Rigoletto. If so I would like very much to borrow one to make a copy. Will you ask any readers who might have such a tape to write to me.


How good will *your* new tape recorder be?

One of the answers lies in the quality of the magnetic recording head—a basic and important part of all recorders. The better the head, the better the performance you can expect. A Shure magnetic recording head insures a unit constructed to close tolerances . . . precision specifications . . . optimum performance of your recorder.

An outstanding example is the "Micro-Gap," a new, high quality magnetic recording head specifically designed for use in professional studio and fine quality home tape recorders. It provides excellent response over an extremely wide frequency range . . . long operating life at maximum efficiency. For home recordings of professional stature, or for precision data recording equipment, the "Micro-Gap" cannot be excelled.

The "Micro-Gap" is the latest of the Shure family of fine-quality magnetic recording heads. When a tape recorder manufacturer announces a model equipped with any of them, you can be assured of the high quality of the tape recorder . . . for the choice of a Shure head is proof that the manufacturer is giving you the very best.

*The Mark of Quality*

SHURE

**Pioneers in Magnetic Recording Since 1939**

SHURE BROTHERS, Inc.
225 West Huron Street, Chicago 10, Illinois




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Carrol Bratman holds the device used to produce the sound of an army on the march. It consists simply of a frame which holds wooden blocks strung on flexible cords. This device has been used since the earliest days of radio.

# Wanna Buy A Noise?

**by Mildred Stagg**

***New York Editor***

**. . . . Carroll Bratman sells noises and has the world's largest collection of sound effects.**

"WHAT do we use for a cat's meow?" This was one of the questions that Carroll Bratman answered on the telephone while he was demonstrating a versatile animal-call horn for your reporter. Bratman has the largest collection of sound effects, noise-makers and honest-to-goodness drums in the whole world. His warehouse bins contain more than eight hundred varieties of meows, barks, baaas, and moos: whistles, chimes, screeches and moans. The only sound that he can't make is "no!" Whatever a customer demands, be it possible or not, Bratman supplies it—usually within 24 hours.

A quick run through of his reference catalogue reveals 28 categories. It begins with ACCESSORIES and ends with WHISTLES

(1) Imitations

(2) Decoys, etc.

In between there are such exotic sound effects as Fretted Instruments, Gongs and Tam Tams, and Vibra-Cussion Instruments. Bratman offers 24-hour delivery service and many of his customers take advantage of this offer.

When a customer asked for a record with nothing on it but repeated wolf calls, all that Bratman asked was "What



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species of wolf?" When he was told that the desired sound was the mating call of the male, human species, he whistled his way through an entire record and delivered it the next day. The record, he learned later, was designed to teach a parakeet. Its owner hoped that by constantly repeating the record the bird would include the long, low whistle in his vocabulary. It worked too.

A large part of the Carroll Musical Instrument Service, (the correct if slightly misleading name of the company), has to do with music and musicians. In addition to owning the largest collection of drums that can be found anywhere, Bratman's warehouse is crammed with marimbas, banjoes, guitars, celestas and xylophones to say nothing of the more usual string and wind instruments.

While he was explaining the various instruments and their uses, Bratman was also gathering a half dozen mutes. They had been ordered for the brass section of the New York Philharmonic Orchestra. Kostelanetz was conducting Ferdie Grofe's Grand Canyon Suite and he is one of the many conductors who depend on Bratman for special instruments.

In addition to orchestras and conductors, the Victor-RCA, Decca, MGM, Columbia and other recording companies order equipment and musical instruments from Carroll Service. The musical part of the business comes naturally to its owner. Bratman was a professional drummer and he played with many important concert orchestras before he turned to music and noise. Every man who works for him must also be a musician so he can understand the customer's problems subjectively.

Bratman left the band business after he successfully answered his conductor's request for an authentic bee sound to accompany the "Flight of the Bumble Bee." Everyone was stumped but Bratman. He thought that the sound could be supplied without too much difficulty. So he bought a little non-musical instrument known as a "Bronx Cheer" or "Razzer." He breathed into it softly and out came a realistic bumble bee that buzzed right through the selection. He practically stopped the show with his buzzing.

On further consideration he thought there might be a future in supplying sound effects for orchestras and others. He went into the business about eight years ago. Today his inventory of noise and music is nationally famous. It's constantly replenished and amplified through agents all over the world and he still hasn't learned to say "no." To preserve him from this dread fate he employs a large staff of assistants. In addition to the musicians who double as salesmen, he has a complete carpentry and machine shop manned by expert carpenters and machinists. Tuners of all kinds are always on hand. These men can spot and rectify the tiniest aberration in pitch.

Not all sounds require large, elaborate or expensive instruments to simulate. "You have to learn how to use an instrument," Carroll Bratman explained, "or you won't be able to imitate the sound you want." He demonstrated the point with one of his best sellers. It's a small wooden instrument about the size and shape of a wooden doorstop. This is called a "Barnyard Whistle" and it comes equipped with a reed. An adjustable slide fits over the reed. Bratman can produce ten different barnyard noises with the whistle, any of which is guaranteed to bring nostalgic tears to the eye of a farm boy who lives in the city.

The sounds are produced by breathing into the mouthpiece and adjusting the slide over the reed. With the slide at the bottom of the reed the whistle produces several low

Top. Mr. Bratman demonstrates how the marching men sound effect is used. The frame is raised and lowered rhythmically to produce the necessary cadence of marching. Center: Two wooden blocks faced with ordinary sandpaper will make quite a realistic train sound when held close to the mike during recording. Lower: The clop-clop of a horse is simulated by plopping two cocoanut halves on a wooden board. The shells may also be worked in gravel or other material to suggest the horse traveling on a road, across a bridge, etc.



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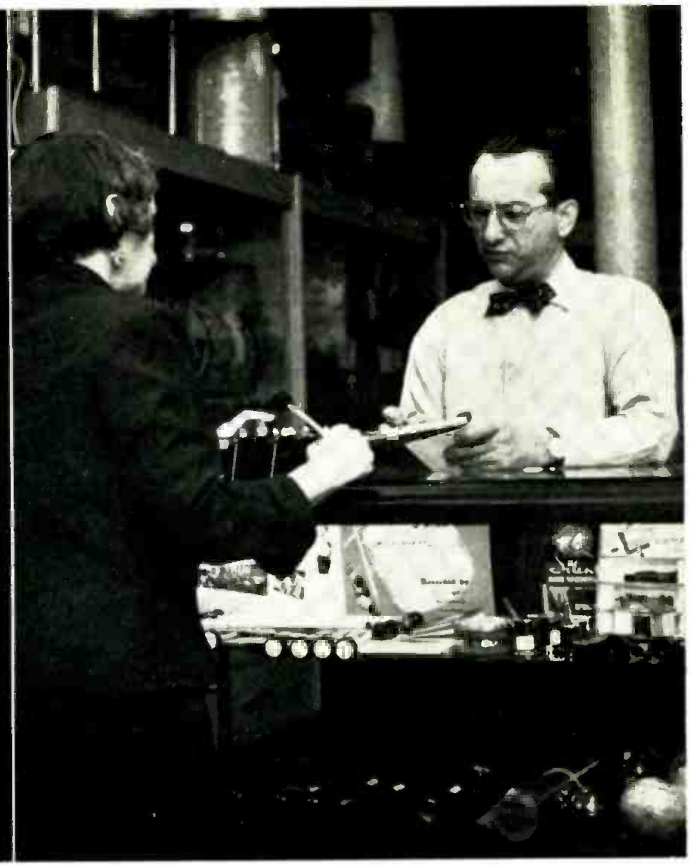
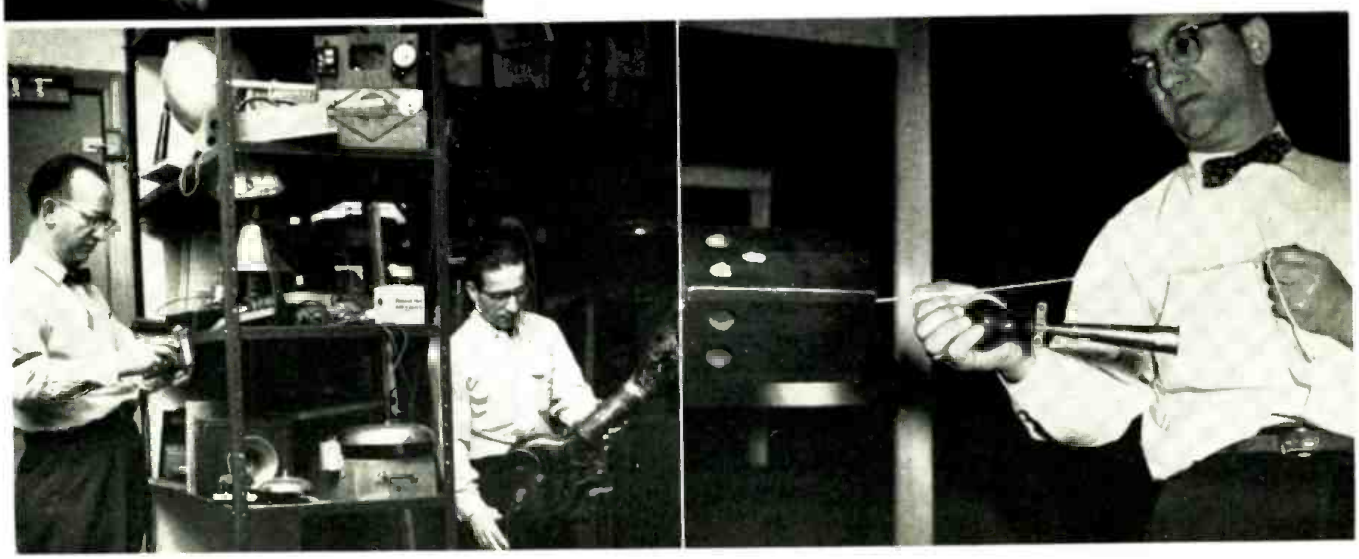


Upper left: the best sound effect for sleigh bells is just sleigh bells. The shop has bells and gongs of all shapes and sizes to produce any effect that might be wanted by a recording studio, radio station or orchestra. Upper right: practical sounds, such as the inaudible dog whistle that can call a dog without disturbing the neighbors are sold in the store. Another practical sound device with a purpose is the Audubon bird call which produces a squeaking noise to attract birds. Left: a realistic rattlesnake that's perfectly harmless. The fiberboard box contains the batteries and a vibrator. On the end of the vibrator is a twist of cellophane containing bird gravel. When the current is applied the vibrator shakes the gravel inside the cellophane producing the sound made by a very angry rattlesnake. Lower left: Mr. Bratman works an alarm clock bell on a wooden block while his assistant sets the wind to howling by turning the crank on the wind machine. Lower right: you are looking at two dog bark devices. The small horn can be made to sound like a dog and Mr. Bratman is making a short stroke with a canvas pad on a rosined string which is attached to a can that is in turn attached to a wooden box to amplify the sound.





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notes; an oink, or the growl of a bear, or a doleful moo. Near the top of the reed the whistle sounds like a soprano squeal and it simulates a chicken cackling, a baby crying or a horse whinnying. All these sound effects cost only $4.25. "But don't expect to press a button and have the right sound come out," Bratman warned. "You have to practice on any of these whistles before you can produce exactly the effect you want when you want it."

In experienced hands, however, these gadgets are far more reliable than the mechanical sound effects that are sold in trick stores. The cat's meow that he was asked about on the telephone can be supplied in any of several ways. "The best way is to have it live," Bratman said. "That means hiring someone like Donald Bain. He specializes in animal noises and the big radio and TV companies use him all the time. Or you can rent a record of a real cat meowing. The record is marked so you can cut it in accurately when you want the sound. The cheapest and least reliable is this." He ferreted out a square of oilcloth, gaily decorated with a colored lithograph of a cat and horse. It was a toy dating back many years. By moving the toy up or down or sideways a kind of meow or whinny came out but it was neither realistic nor did it perform every time it was moved.

Another popular, low-priced item is a smaller whistle that simulates only three barnyard noises, a duck quacking, a horse whinnying or a chicken cackling. A whistle so tiny that it's almost invisible produces a snipe's call. Any noise is for rent or sale, but there are some that Bratman would probably be reluctant to part with permanently because many can never be duplicated.

There are many modern horns available that reproduce a train or ship's whistle. But there's one antique horn that's so close to the real thing that you can close your eyes and feel the motion of a train or ship getting under way. To carry out the train effect he provides a box with tin sides that can be scraped to simulate the sound of a train rushing along. This gadget also has a whistle so that two people can operate it and produce the train racing along with its whistle blowing, an effect that is often used to set a mood or accompany the music on radio or TV.

One of the more interesting items in the huge Latin American collection of instruments is a "Pico." This is a black metal instrument about 18 inches long. It looks like a trowel and is popular among Cuban orchestras when played with the clavas. But under the label that reveals that it was imported from Cuba, there's a metal stamp, "Made in England." Actually the Pico is made from a plowshare in England and shipped to Cuba. From Cuba it's sent to the U.S.A. to be sold finally to a Cuban orchestra.

If you need a set of tuned automobile horns, some yacht bells or a quarry blast warning horn, you can find them and hundreds of other sounds or music at the Carroll Musical Instrument Service, 209 West 48th St., New York 36, N. Y. You can even buy a dog-whistle for calling dogs that's hardly audible to human ears.

Top: need the skirl of the bagpipes? This unusual shop has them—there isn't any sound effect except a real bagpipe that can imitate one. Center: Frank Muccio shows how to operate the gadget that can produce a lion's roar, an elephant's trumpet or a bear growl. It is a single headed drum with a heavy fiber shell. The skin is reinforced in the center where the rope comes through. The rope is rosined and the unit is played with a canvas pad. Lower: There are plenty of actual orchestra instruments such as this kettle drum which Mr. Bratman is tuning.



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Inside this giant United DC-7 Mainliner the passengers are enjoying music from tape while the craft speeds along at 365 miles an hour over the mid-west.

# There's Music in the Air

***. . . United Airlines equips its fleet of forty-two DC-7's with background music on tape.***

THIS year travelers are being carried away, literally, on wings of a song.

The ancient minstrels' dreams of wafting their listeners along with melody is a modern reality, dramatized by the recent announcement that United Air Lines is installing Travel Muzak in its fleet of forty-two spanking-new Douglas DC-7 Mainliners. United's action brings to six the number of airlines carrying music by Muzak to all parts of the United States and overseas to all parts of the world.

The heart of these flying music systems is a tape reproducer no larger than a shoe box and weighing only 27 pounds. It was designed by the Presto Recording Corporation especially for service on planes, trains and other moving vehicles.

United uses the music to set the mood for travelers as they come aboard, during dinner and cocktail hours and before landing. Muzak designed two distinct types of programs for United's flights. For long distance trips the programming experts planned and recorded tapes featuring popular numbers, semi-classics and a healthy sprinkling of tunes from the latest Broadway musicals such as the current hits "Damn Yankees" and Cole Porter's "Silk Stockings."

For the flights between the US and Hawaii the programs are built around typical Hawaiian selections played by outstanding Hawaiian groups. Soothing hulas, serenades and dances are carried to put travelers in the languorous mood of the exotic islands.

Originally United installed the Presto APB-12 tape reproducers on its "prestige" non-stop, coast-to-coast deluxe flights when it first inagurated the DC-7's last year. The huge Douglas planes were equipped with every device to make the cross-continent flights truly luxurious. According to the air line, passenger reaction to the music on these flights was so enthusiastic that it decided to equip its entire fleet of DC-7's with tape reproducers and Muzak travel music.

In addition to being a source of delight for the passengers, the installation of music in airliners is a tremendous achievement in both the technical and artistic senses. Though the concept is similar for ships and trains and planes, installation in aircraft is far more difficult than in the other two. Naturally, in an airplane, space is at a premium and weight is an extremely important factor.

Given the problem of designing a tape system small enough and light enough for aircraft uses, the Presto engineers worked out the APB-12. From the time the stewardess turns it on at the beginning of the flight until she shuts it off after landing, the unit requires no tending. It plays one half of the dual track tape at 3¾ ips and automatically reverses itself when that track is completed, then plays the other half track through to the end. Altogether a total of two hours of continuous background music are provided on both tracks, after which the reproducer can be set to recycle or to shut itself off.

The unit consists of a transport mechanism and a built-in preamplifier contained in a standard one-unit ATR enclosure which fits the standard aircraft rack. The frequency response is from 50 to 7500 cycles and the general audio

*Reprinted, with additions, from "The Presto Recorder"*



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quality is equal to any hi-fi radio or phonograph system. The output of the unit is connected to the airplane's public address system and remote control starting and stopping is possible. A new device is about to make its appearance which will give each passenger complete control over the volume level of the music at each seat in the plane.

The reproducer operates from the 27½ volt DC supply in the airplane. The tape speed is kept constant, despite variations in the DC supply by means of a governor on the capstan motor. The plate voltage for the preamplifier is taken from the plane's public address system amplifier.

The unit has two playback heads, one for each track. The upper track head is used when the tape is passing from the left hand reel. When the tape reaches the end of its run in this direction, a reversing contact strip previously affixed to the tape makes electrical contact with the left reversing post. This automatically changes the direction of the tape and starts playing back the lower track of the tape utilizing the lower track head. A second reversing strip makes contact with the right reversing post at the end of the tape and starts the cycle over again. The reversing strips are made of aluminum foil strip, such as a Brady Quick-Label, or silver paint applied to the tape. One long strip or two or three shorter strips provide the necessary contact.

The unit has three motors, one for the capstan and one for each of the reels. Microswitches on the tape tension arms will shut off the recorder should the tape break.

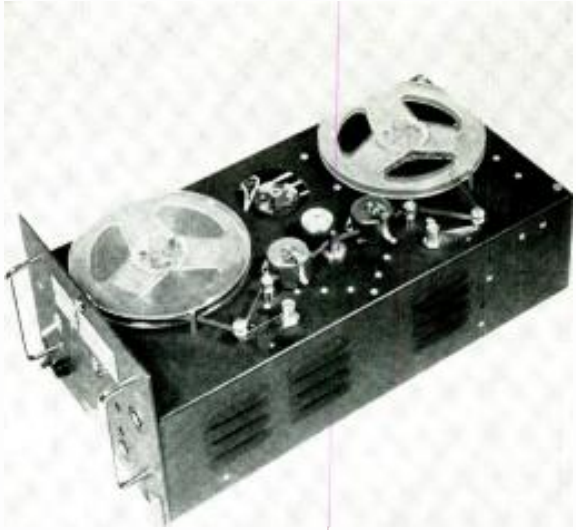
One sticky problem the engineers had to overcome were the variations in the supply voltage aboard planes. If not licked, the fluctuations would cause the tape machine to slow down and speed up, producing the horrible wailing effect so common on the wind-up phonographs of twenty years ago. To lick the problem, the engineers installed the specially designed governor which permits a very wide fluctuation in the current supply without affecting the speed of the recorder.

Plane cabins present unique, and tough acoustic problems. The noise level in aircraft, for example, is very strong in the bass-baritone register and the sound absorbing material in the cabin not only soaks up the noise but the music as well.

It was here that Muzaks' years of research and experimentation paid off. They have discovered that music must have a tonal range much greater than the noise it competes with so that the melody can "go around" the noise instead of competing with it, or trying to "push through" it. As a result, music for travel is orchestrated so that the rich harmonics in the tenor and soprano registers are emphasized by using string and woodwind ensembles to best advantage. This scientifically tested and proved technique is so successful in airliners that the music can be heard distinctly at low volume in any part of the cabin.

United is the latest airline to add music to its flights. The first was National Airlines that installed music on its east coast Florida runs in 1952. Pan American World Airways followed in 1953 and has used it ever since on its overseas flights. Western Air Lines, when they inaugurated an ultra-luxurious service known as "Champagne Flights," where passengers were pampered with succulent filet mignons and champagne to the accompaniment of "Champagne Music" by Muzak.

Other airlines which use music aloft include Seaboard and Western airlines, on its east coast system and Japan Air Lines which is now installing Muzak on its Pacific and Alaska flights.



Top: the Presto APB-12 tape reproducer which is no larger than a shoe box and has been designed to fit an aircraft instrument rack. It plays a 7 inch reel of Muzak music and will automatically reverse itself when one track has been played. Center: Stewardess Jeanette Meyers flips the switch that activates the unit and send the tunes through the plane's P.A. system. A new device will permit each passenger to control the volume at his own seat. Lower: The interior of the DC-7.

Today more than ever there is music in the air—even at 15,000 feet and 365 miles an hour. Through the use of tape it is now possible to have music that is not interrupted by the motion of the craft or by vibration. In addition, the continuous playing features of tape and its trouble-free operation have made it a natural for mobile installations.



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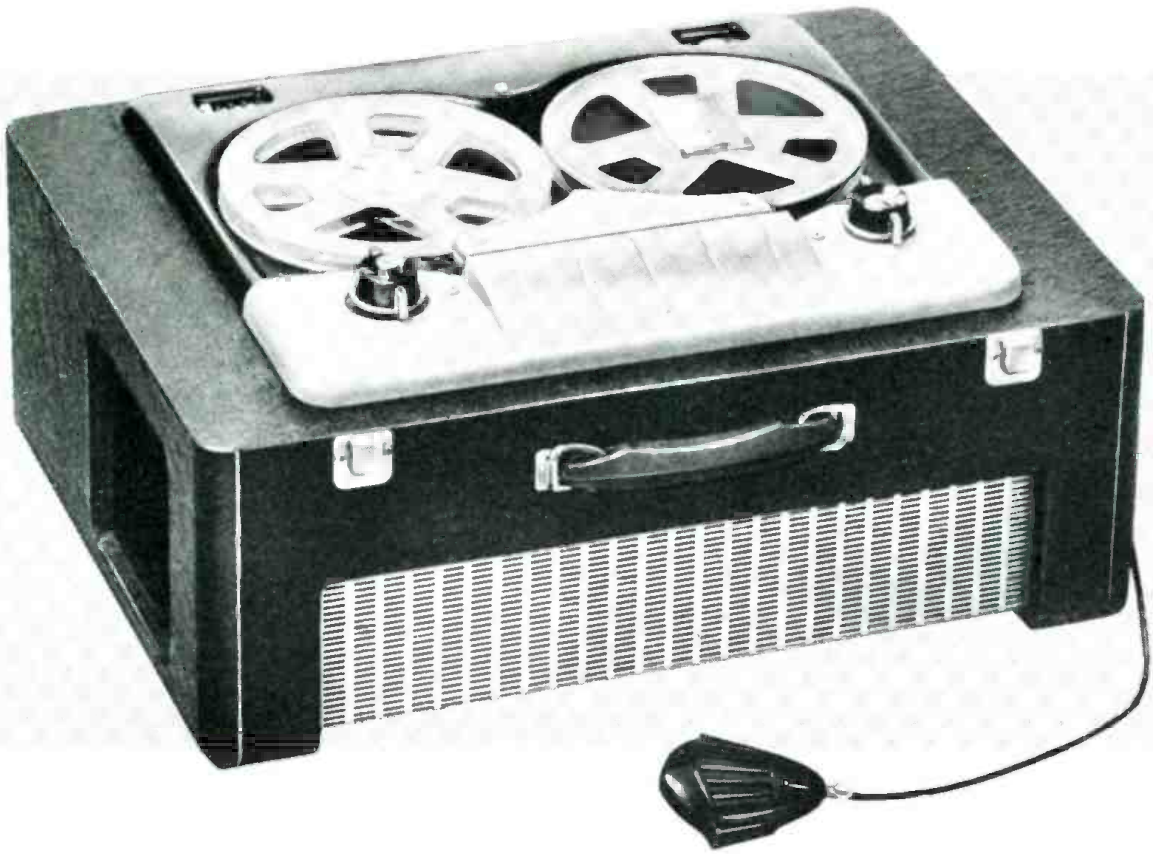
# WEBCOR

## VERIFIED HIGH FIDELITY!

### **ROYAL CORONET** *Portable Tape Recorder*



TWO MOTORS!
TWO RECORDING HEADS!

NEW TAPE COUNTER!
THREE SPEAKERS!
NO REEL TURNOVER!

For matchless, professional-type performance at moderate price, the Webcor ROYAL Coronet is the finest value on the market today! Actually, it offers you features no other tape recorder of comparable or even higher price has!

Balanced sound system with three speakers and omni-directional sound reproduce music with the thrilling effect of stereofonic dimensions.

Two motors maintain constant speeds at 7½ and 3¾ ips. Two recording heads eliminate the nuisance of reel turnover . . . permit instant change from one track to the other.

Easiest operation with one-knob controls. Input, output jacks. New Veedor Root Tape Counter. Switch permits monitoring with or without recording. Tone control. Fast forward and rewind. Super-sensitive system. Multiple negative feedback circuits assume minimum distortion.

See your Webcor dealer soon for a demonstration of the Webcor ROYAL Coronet. Ask him too, about the Webcor Library of pre-recorded tapes, with their fine musical selections.

***All music sounds better on a* WEBCOR**

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# tape recorders

## EASIEST OPERATION!

### ROYAL

*Portable Tape Recorder*

The ROYAL is the most popular tape recorder in the world today.

The ideal tape recorder for all-purpose recording. High fidelity reproduction. Two recording heads, two motors for constant speed. No reel turnover. Input, output jacks. Monitor switch. New Veedor Root Tape Counter. Dual speeds at 7½ and 3¾ ips. Automatic stops at end of tape. Easy one-knob controls. Safety button to prevent accidental erasure. Multiple negative feedback circuits for minimum distortion. Top quality construction for years of trouble-free service.

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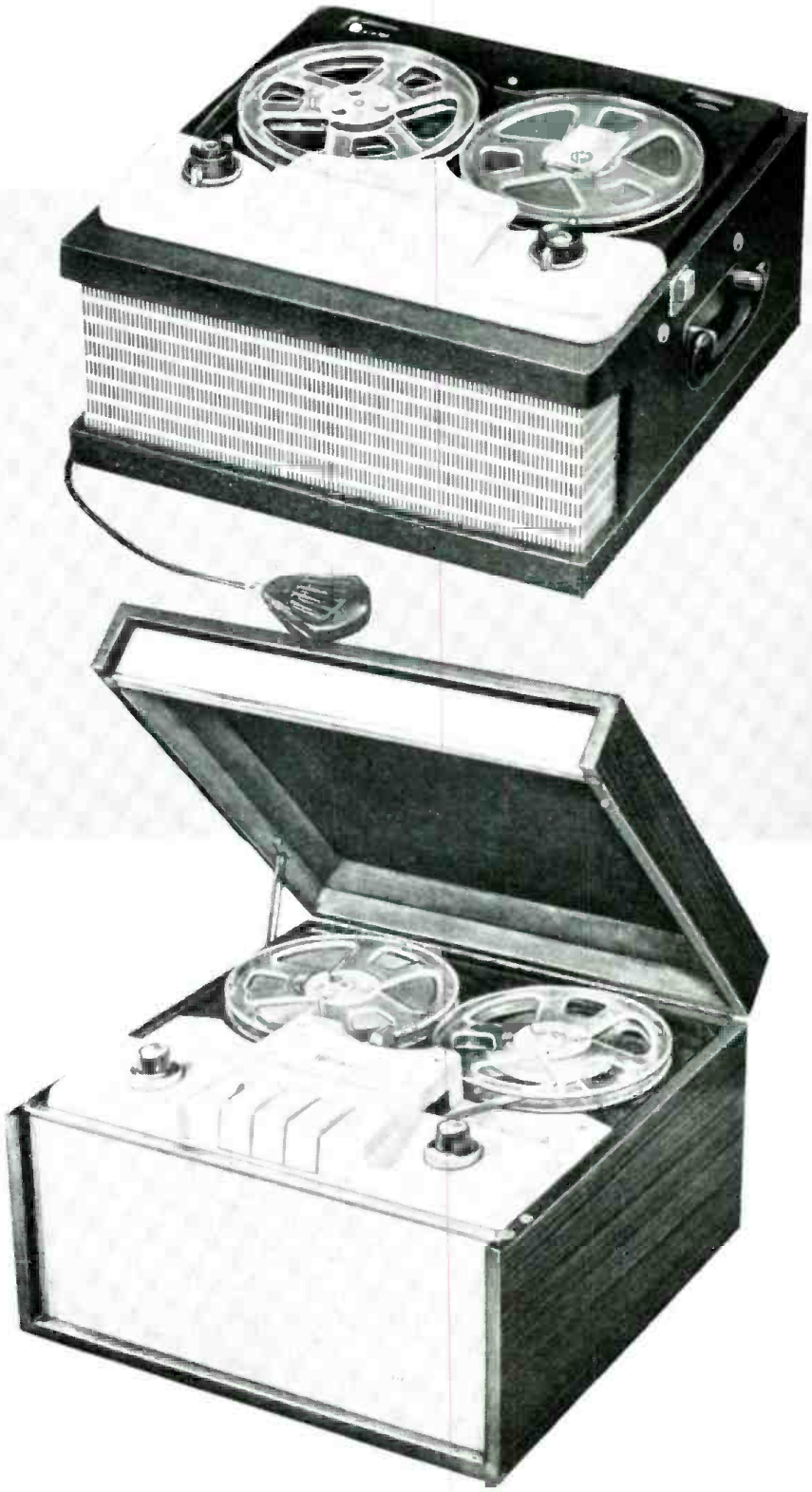
*Push-Button Tape Recorder*
*Table Model*

**(Also available in portable model)**

Without doubt, the world's best value push-button tape recorder. Easiest operation. Editing switch. Fast forward and rewind. Two speeds: 7½ and 3¾ ips. Monitor control. High fidelity sound system.



**See the Tony Martin TV Show • Every Monday Night—NBC Network**

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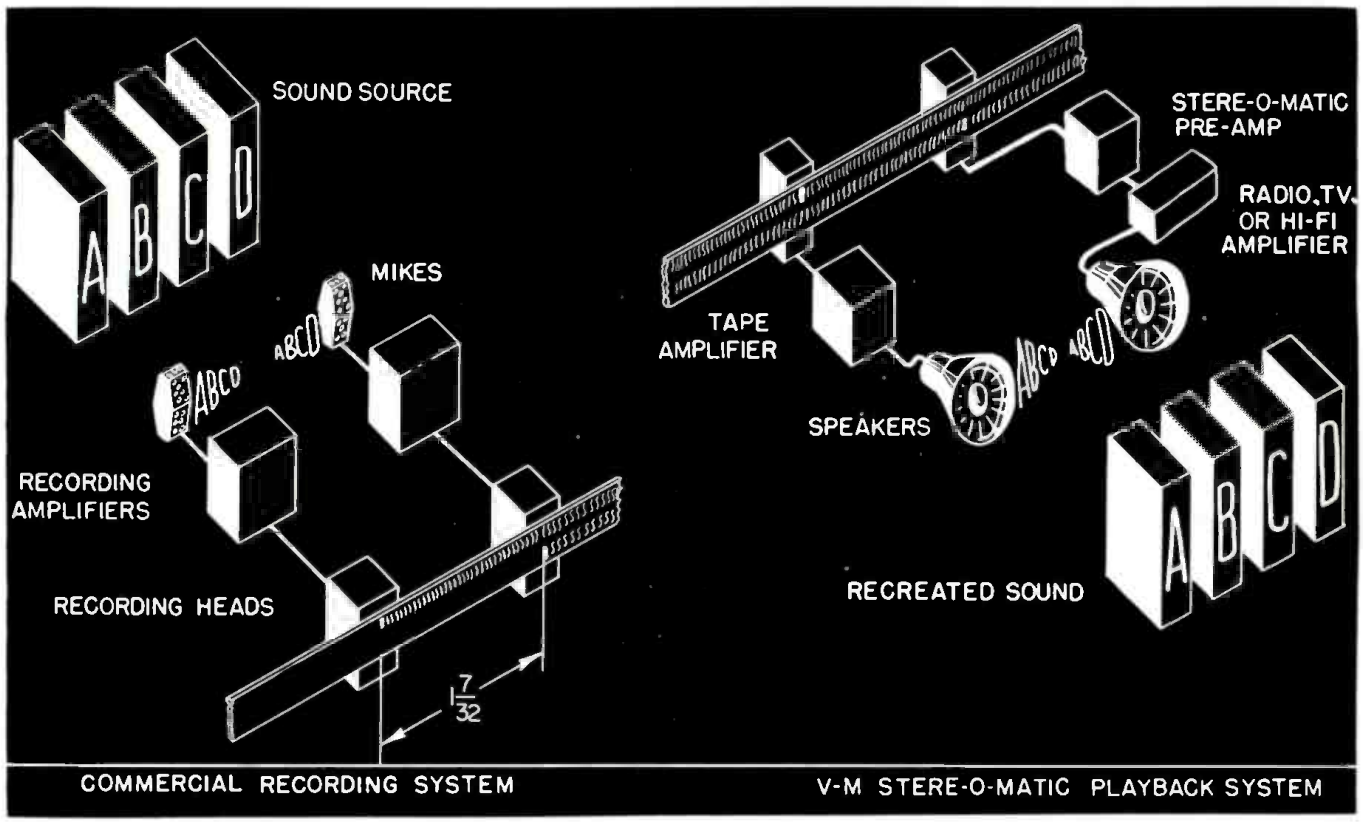



The stereo system used in conversions, including the V-M recorder for which it was originally designed. Pickup is made with two mikes and recordings made on separate tracks. On playback, one track is played through the recorder, the other is picked up by the new head and fed to a pre-amplifier and then to a radio, TV or Hi-Fi amplifier and speaker. This will play the "staggered-head" tapes.

# What About Binaural Conversions?

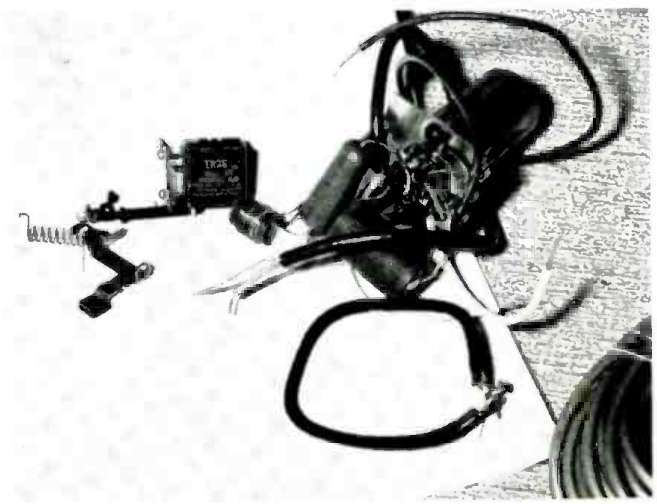
by Jack Bayha
*Development Engineer, V-M Corp.*

***. . . . If you have the head room or a V-M recorder you can convert to stereophonic playback.***

IF you are the average tape recording fan, you have most likely heard a binaural or stereophonic playback demonstration at one time or another. At the same time, you have looked at the price tags and have gone back to trying to enjoy monaural tapes. It is not the author's intent to make you believe you can duplicate a $700 machine for a song, but you may be able to convert your tape recorder to binaural, using the proven fact that binaural sound does not require the ultimate in hi-fi equipment to do a very adequate job in your home.

Our conversion system is based on the V-M method, developed to convert their Tape-O-Matic Recorders for binaural playback. This requires the installation of an additional head to the tape machine, the installation of a pre-amplifier, and the utilization of the power amplifier of a radio, TV set, or a phonograph, as well as the tape machine's own power amplifier. An examination of the binaural recording and play back process diagram will show how this is achieved.

The V-M machine was originally designed with binaural conversion in mind, and mounting provisions for the additional head and the amplifier were provided for right from the first introduction of this machine on the market. Its manufacturers only recently made the Stere-O-Matic conversion unit available. We have used the Tape-O-Matic as an example of a typical conversion. The basic ideas set forth can readily convert many other machines, but



The V-M adapter kit which, while designed specifically for the V-M recorder, may be applied to machines of other makes providing there is sufficient room to take the extra head.



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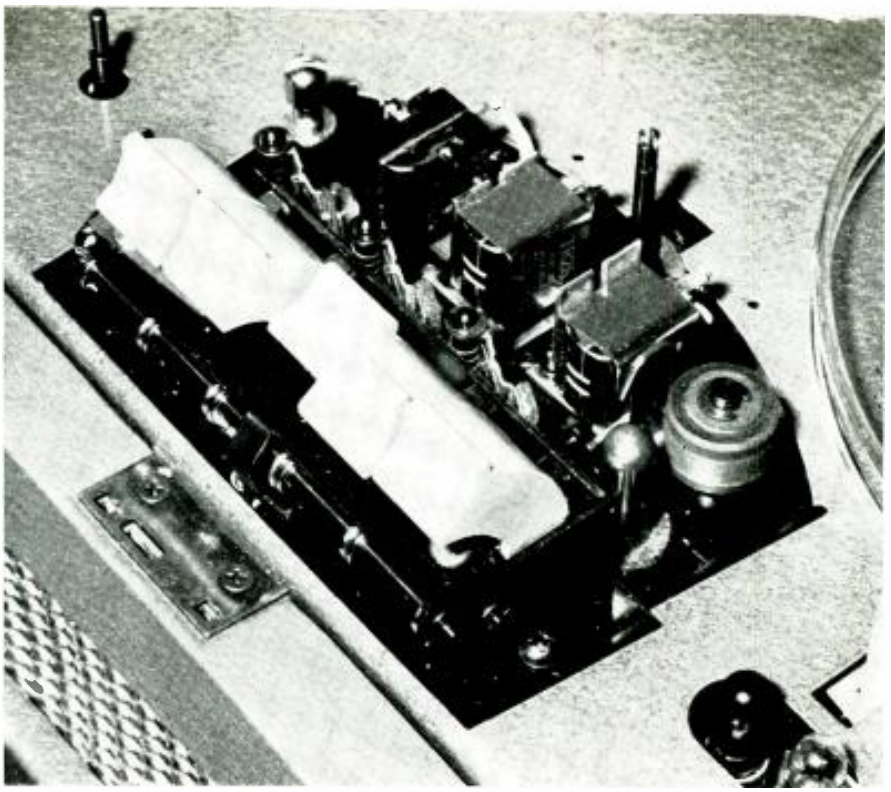


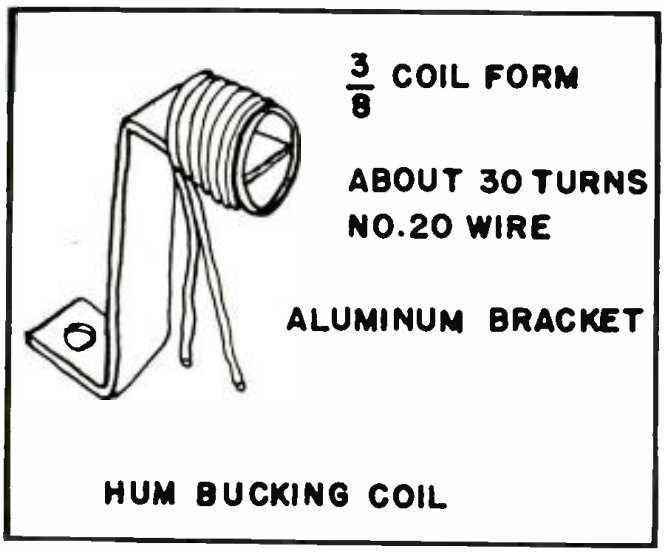
After the knobs and cover plates have been removed, the head is installed in line with the existing heads as shown. There must be sufficient space between the playback head and the new head to clear the capstan and roller. When installation is made, great care should be taken to align the heads properly so that maximum response will be had. The use of a test tape is advised.

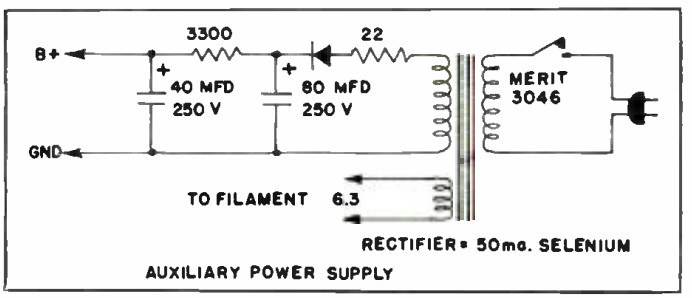
with varying degrees of difficulty. In several cases conversion will be obviously impossible, and whether this is the case with your machine or not, you will have to judge by reading the text given here.

Binaural starts with a second playback head. The space for this head must be available or you will have to add two new heads to the machine, new tape guides, and pressure pads, as the sketches show. Where space is at a premium you may be able to squeeze in a Maico Dynamu head, where no other will fit. Remember the head to be added must play the bottom track of the pre-recorded tape, and its gap *must* be 1-7/32 inches from the gap of the present head. Study the diagram shown. (We have deliberately not considered the use of a 'stacked' head, where both tracks are one over the other, since these heads are not readily available, and even when available are very prohibitive in cost and afford no advantage. To the contrary, they create complications causing cross-talk due to pole flux leakage and couplings and require special precautions). It will be necessary to find a place to mount the head and make some form of mount for it. A number of suggestions are shown; only your ingenuity limits the possibilities. Remember azimuth adjustment is necessary, also a pressure pad and a way of removing it for threading will be necessary on the new head. In this respect an examination of your tape machine will show whether or not conversion is possible. If head mounting can be made, we can proceed to the next consideration.

Under no circumstances attempt to install a conversion on an A/C - D/C tape recorder. Only units which use power transformers and have a 6.3 volt filament supply are capable of conversion by using the unit's own power supply, as indicated.

Most tape machines, while not designed with the conversion in mind, will have enough excess power in their power supply to handle conversion amplifier. This is even more apt to be the case, since we no longer need the power drained by the bias oscillator which is inoperative in play-




Left: the hum bucking coil that is supplied with the kit. If you want to convert to binaural and make your own parts the coil is wound on a 3/8" coil form and consists of 30 turns of No. 20 wire. Above: this is the schematic drawing of an auxiliary power supply that may be necessary if your recorder does not have enough reserve power to take care of the added drain imposed by the additional equipment. This supplies both the filament and plate voltage for the binaural adapter hookup shown on the next page.



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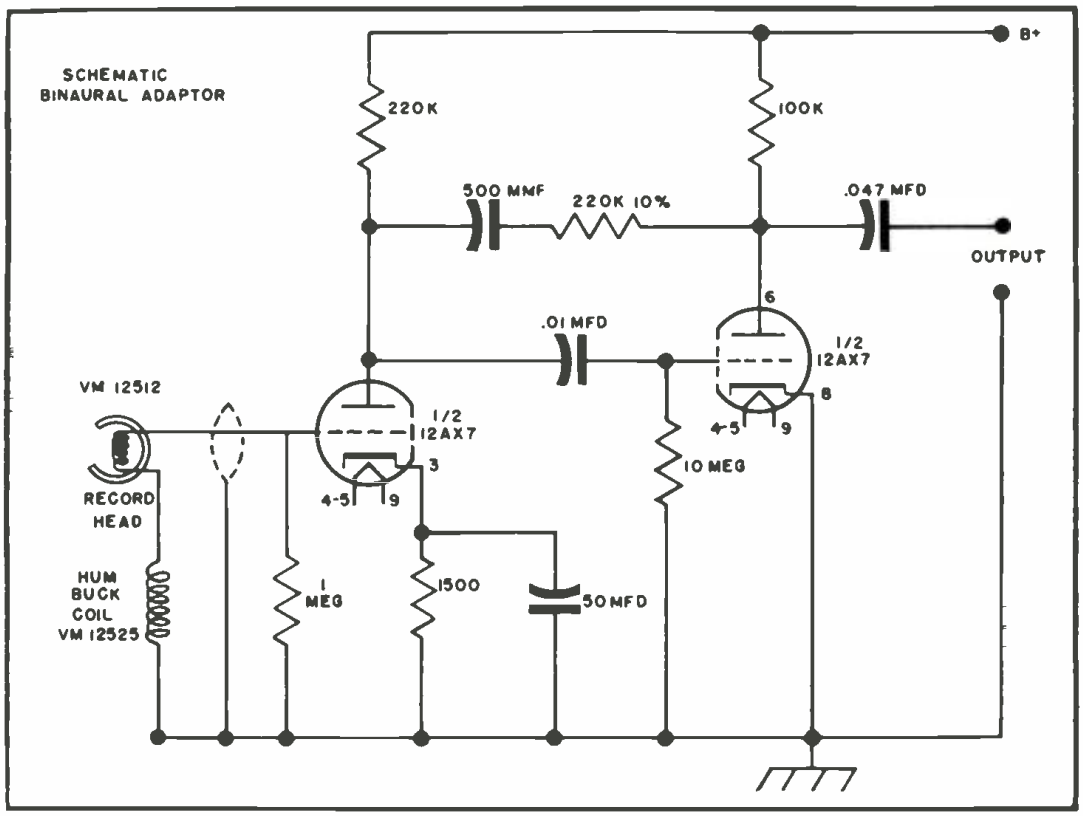
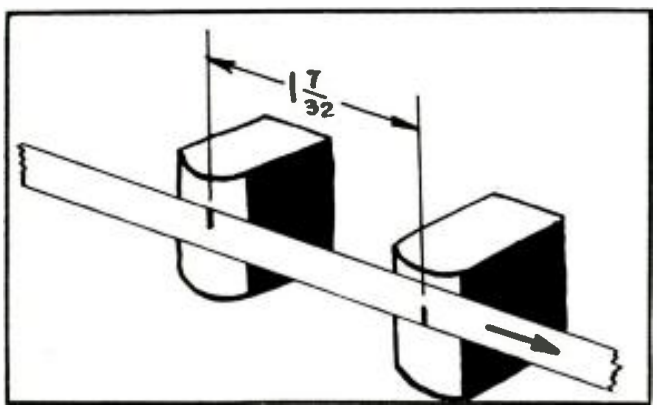



If you're in the mood to do it yourself, above is the hookup for the binaural adaptor. One 12AX7 tube is used and this must be shielded. The hum bucking coil is mounted in the recorder cabinet and turned to produce the least amount of hum. Both the auxiliary power supply and the binaural adaptor may be mounted outside the recorder in a box.

back. In some tape machines the bias oscillator and the final amplifier output tube are the same unit, being switched in and out of the circuit. Tape machines using this common bias and output may be sorely pressed to supply this additional drain, and a separate power supply is deemed advisable. A check of your machine's schematic will indicate whether or not this condition is present.




If you are the very handy type and want to build your own pre-amplifier, the detailed schematic is shown. If not, you might buy a V-M Stere-O-Matic kit, and use the ready wired pre-amplifier supplied. (This kit sells for $16.95, and contains a new head, pre-wired amplifier, brackets, connecting cable, hum buck coil, etc., as well as detailed instructions for installation in V-M machines). If your tape machine amplifier has room for the pre-amplifier you might punch a socket hole to fit, using a Greenlee punch, and install it in your present machine. If no space is available, a utility box obtainable from your local parts supplier may be used as a chassis. It is, of course, impossible to give details for all makes of tape recorders; you will have to check your individual situation. If you are going to put the amplifier into your tape machine, keep it away from the power transformer and the motor as far as possible.

An examination of the V-M Stere-O-Matic kit shown will indicate the amplifier is built around a 9 pin socket with the addition of two terminal strips; this method of construction works quite well when the unit is for installation on the tape recorder chassis. If a separate chassis is used, wire the unit as desired. There is nothing critical about the layout in any way. Naturally good solder con-

Upper: the V-M recorder for which this adaptor was originally designed. The face plates and knobs must be removed to install the heads or any competent technician can do it. Lower: the spacing used for commercial "staggered head" tapes. The distance is measured from gap to gap and must be exact for good results.



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nections and sound wiring practice is necessary in this unit as in any other piece of equipment. The input lead from the head should be grounded at the amplifier chassis only, at first. It should then be grounded at the head end to see if any reduction in hum is effected; if so, leave grounded at the head also. It is, of course, essential that the output cable be of shielded wire, and about 12 feet long. Single conductor inside a wrapped or braided shield is adequate. Terminate the end which is to plug into the power amplifier in a cinch male phono plug. When soldering, avoid possible shorts in the cable. Excess heat in installing this type plug will often cause the wire insulation to melt, and a short will result.

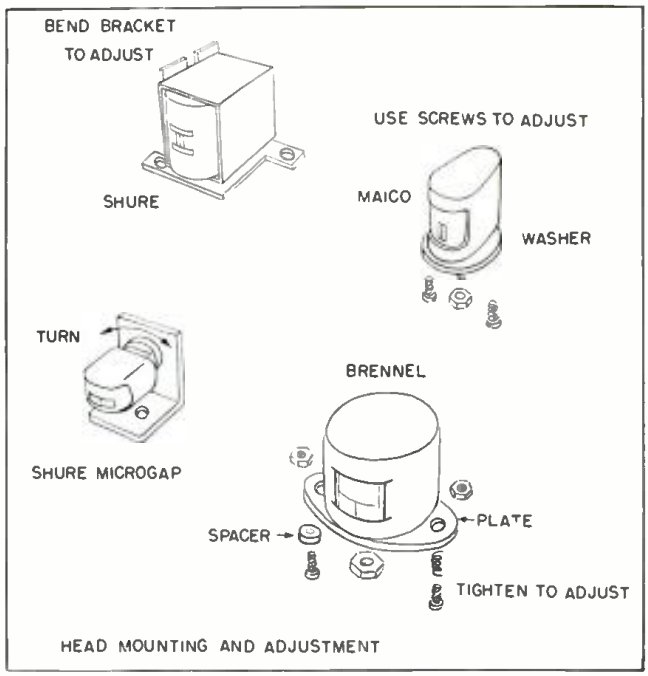
In wiring this type of equipment it is generally best practice to make all ground connections at one point only. This results in the lowest possible amount of circulating hum fields, and thus the least hum. It is, of course, necessary to use a shield over the 12AX7 tube.

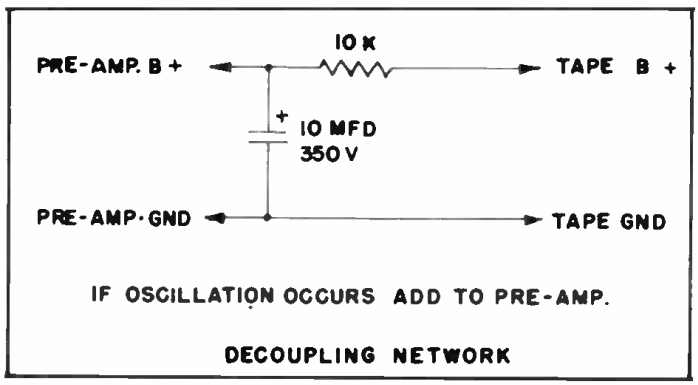
Hum will in most machines be picked up by the added playback head from the motor and power transformer, If you are using the V-M Stere-O-Matic kit, the hum buck coil supplied should be used; follow the instructions given in the kit to the letter—this will greatly reduce the hum problem. If the kit is not being used, a coil as shown should be made and connected as shown in the schematic—it may not help in all makes of machines—but an attempt at its use is well worth while. It should be moved around close to the motor by bending and twisting the bracket until a minimum amount of hum is heard.

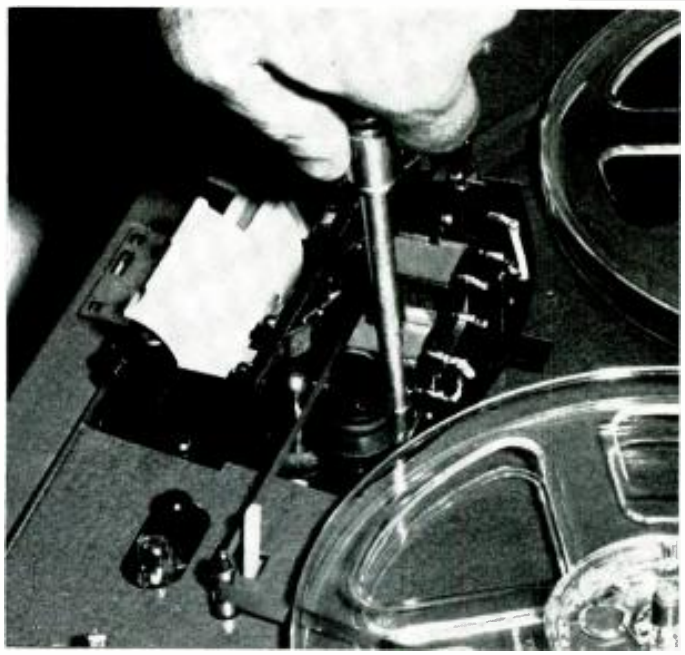
Once the pre-amplifier has been wired and installed, it should be checked very carefully to be sure that no shorts are present. Once you are satisfied that no shorts are present and that it is ready for use, you may plug the output cable into an amplifier, radio, or TV phono jack and check it for operation. In some machines it may be necessary to isolate the pre-amplifier to prevent its going into oscillation (refer to the schematic for details). In all cases take the B+ from the last section of filter capacitor, not from a tube point. If the amplifier screeches at you, isolate it as shown. If it seems to be normal, run a piece of tape past the head, hear anything? If you do, you are ready to go ahead; if not, check over the amplifier to the schematic. Once you have corrected the wiring error, we all make at least one every so often, make sure everything is performing well in both channels.

Now we must adjust azimuth. This is a high sounding way of saying 'line up the head.' To do this right we must have a binaural test tape or at least a regular binaural tape. We must get the slit in the head lined up with the recording on the tape. This is done by adjusting the tilt of the head so that it is absolutely parallel with the tape's recorded information. Adjust until you hear maximum highs, or if a test tape is being used, adjust for maximum signal from the constant tone portion. (V-M Tape No. 8476 provides a complete binaural demonstration and a section of head alignment recording). Once the head has been aligned you are ready for binaural or stereophonic sound.

While this is a rather involved job for many tape fans, it is well within the grip of many others. If you don't feel you are capable of doing the job, however, don't tackle it. You might, however, have a friend who is a little more capable in the realm of electronics who can do the job for you. In the case of V-M recorders, all service agencies are trained to perform this operation on V-M machines.



Top: heads which may be used as the second head to pick up the binaural sound. The Maico head is the smallest and may sometimes be squeezed in where others would not fit. Center: if the preamp squeals at you after it is hooked up, add the decoupling network consisting of the 10K resistor and a 10 mfd. 350 v. capacitor. Lower: final adjustment of the heads consists of aligning them so the gap is vertical. With the Shure head this may be accomplished by bending the frame as necessary.



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# Talk About

by

**Shep Shepherd**

Miss Gertrude Folger has taught voice for 14 years at M-G-M and has "graduated" over 300 students, among them producers, executives and directors, in addition to hundreds of name stars and feature performers.

HAVE you ever wondered how a foreign movie star can be brought to America and appear in a Hollywood production within a short time, speaking good English? Or how an American star can play a drawling cowpoke in one picture, a crisp-speaking business man in another and a bumbling hill-billy in a third? How do they overcome those accents and dialects? Where do they learn the tricks of speech and diction that enable them to adapt to any role? It isn't done with mirrors.

These results are accomplished by a small group of the most patient people in Hollywood, the voice coaches. Best known, and in the opinion of this writer, most efficient among them, is Miss Gertrude Fogler, voice coach at Metro-Goldwyn-Mayer studios for the past 14 years.

Miss Fogler, as she is fondly called on the lot, is held in high regard by everyone who knows her, from the producers on down. With those who are, or have been, her students, esteem is tempered with a bit of awe, somewhat like a schoolchild regards a stern but lovable teacher.

Voice teachers use no tools of trade other than books, and some method of recording the voice so that the student himself can hear and study his own mistakes—and mark his progress. In the beginning this was accomplished with disc records, a somewhat cumbersome and costly method. With the advent of tape recorders the path of the voice coach was considerably eased. Now it is possible to record any given lesson over and over on one tape, and finally, to preserve periodic recordings for later study. The storage problem is lessened, loss from breakage eliminated and the cost lowered appreciably.

Miss Fogler has been a prodigious user of magnetic tape since its inception. Her sessions are conducted in a closed room in a small building jammed in between film vaults and a huge sound stage. There are no outside noises or activities to distract attention.

In this remote domain Miss Fogler has taught correct speech to over 300 students, among them producers, executives and directors as well as performers. Katherine Hepburn, Marlon Brando, Esther Williams, Ava Gardner and Fernando Lamas are just a few of the name stars who have "taken" from the little white-haired lady with the crystal tones and the "know-how" they need.

Fernando Lamas, the polished Mexican star, is perhaps the best example of Miss Fogler's mastery of the spoken word and her ability to transmit it to others. Lamas arrived on the big Culver City lot without a single word of English at his command. In just 18 months he was before the cameras in his first English-speaking picture and handling his lines flawlessly. It is important to note that those 18 months were not all given to mastering the language. There were a number of other duties and other people consuming his time; drama coaches, photographers, publicity men, etc. Voice lessons had to be sandwiched in. The point is that Lamas learned the English language and learned it well; not just the lines of a movie script as is sometimes the case with foreign performers brought in for one or two pictures.

Miss Fogler considers the tape recorder the best thing that has happened to her profession in years. Because of it the student has a record of his progress which he can *hear* with his own ears. Oddly, few people ever hear their own voices as other people hear them, and few persons recognize their own voice the first time in a playback. This is due to the fact that we hear our own voice from within, through the inner ear, as it were.

When a new student appears in Miss Fogler's office her very first act is to record a few paragraphs in the student's own natural voice, diction and tones. That recording becomes a guide, revealing speech faults to be remedied and serving as a comparison chart with later recordings to indicate progress. Playbacks of periodic tapes enable both teacher and student to note improvement and thereby streamline sessions. More important, they are valuable to producers or studio executives in timing the start of a costly production in which the student is to appear.

While students may have speech faults different from one another there are certain rudimentary corrective measures (Miss Fogler dislikes the word exercises) applicable to all cases. She prescribes practice of lip and tongue control in relation to individual consonants and vowels. Once these are mastered the correct pronunciation of whole words comes easily. But the vocal cords and oral cavity are but a part of the whole. She sees the human body as a fine instru-



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# Talking!

***Gertrude Folger, voice coach of M-G-M Studios, says the tape recorder is the best thing to happen to her profession in years. Here is how she helps foreign stars to master the English language.***

Miss Folger tapes Miss Montevecchi during a coaching period. The tapes let the performer hear how she sounds, indicate progress, reveal faults, serve as textbooks and show improvements to producers and executives grooming foreign stars for the movies.

ment whose components are important to the production of speech and tone.

Good posture, she says, is an aid to good speech, in resonance and power at least. She advises standing or sitting with body correctly aligned, but not "at attention," and teaches a trick of lifting the voice from deep within the diaphragm rather than "squeezing" it out of the voice box. Posture aids greatly in this.

The body should be relaxed, says Miss Fogler, but sometimes students have an erroneous conception of what relaxation means. "They don't relax," she says, "they collapse."

"That's not the idea at all," she goes on, "Relaxing is something like running an automobile. When the brakes are released and the gears engaged the car rolls freely along,



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Fernando Lamas, polished Latin actor, was Miss Fogler's greatest challenge, since he arrived at M-G-M without a single word of English at his command. Speaking only Spanish with its fluid mingling of soft consonants and vowels, Lamas ran into trouble with our hard consonants. His now almost perfect speech and mastery of English is a monument to the patience and pertinacity of the little white-haired lady with the ready smile and crystal tones. Perhaps for that very reason she has become one of his devoted fans.

completely relaxed, yet under controlled power. Only when the brakes are applied does tension occur. It is this tension, or holding back, that I want my students to overcome. It is often called stagefright."

Power is another word students are apt to misunderstand. In striving for volume at the beginning they try to "throw" their voices at some distant point. Miss Fogler again uses an automobile motor example in clarifying the meaning of sound volume. "It's like feeding gasoline to the carburetor," she explains. "As you feed more gas you get more power, and naturally, more sound. With the voice it should be done by feeding more power from the diaphragm into the vocal cords. The result is similar to tossing a pebble into water, causing wavelets to spread outward. The more power there is behind the pebble the farther will the waves travel. It is the same with sound waves."

The tape recorder plays an important part in this phase of the work. Once the student grasps the trick of increasing volume from within he notes an immediate change for the better in speech form. From here on the playbacks show steady improvement. The original recording of the student's voice should, of course, be compared with these later recordings at frequent intervals.

The tapes are important too, in dealing with accents and dialects. A dialect is often as difficult to correct as is a foreign accent. Both spring from life-long customs and speech habits. Both respond to the same treatment; a series of instructions in good English.

Anyone who has both a dialect and a tape recorder should be able to correct the former with the help of the latter, says Miss Fogler.

The first step would be to record a bit of monologue about, say your old home, or maybe a pet you once had. Don't write it out first. Just talk about it as the thoughts occur to you. Now listen to the playback and note where the speech faults occur. Better yet, have some other fair-minded person point them out. Write down the words that are troublesome, then pronounce each individual letter in that word repeatedly until its sound is familiar. Next pronounce the word itself over and over, sounding each letter as you do so. In a short time the lips and tongue will become accustomed to forming the word properly. Persons from the south, who usually sound R as H, find this method especially beneficial, but it works well with any speech fault.

Miss Fogler uses three methods of recording a student's voice for study and practice; first, reading; second, monologue; third, conversation. There is no singing, though the musical scale is sometimes used in "toning," with no notes being spoken. Rather a humming of the musical scale with the mouth open.

Lessons are spaced as closely together as possible, once daily for five days per week at the start. Length of lesson is adjusted to the student's particular needs at the moment, averaging about 45 minutes. Many former students return for refresher courses, often coming back to Miss Fogler from other studios. She finds this advisable since there is a tendency to lapse into old habits of speech.

Tape plays still another important role in Miss Fogler's profession. As a schoolboy has his books, so must the voice student have his study matter. These are tape recordings of good English perfectly spoken (or as near perfectly as possible). Such recordings may be the voice of an accomplished newscaster, or anyone accustomed to speaking clearly to large audiences. Students are advised to listen closely to each word, rather than sentences as a whole. In other words, pay no attention to what he says, but how he says it. Listening to broadcasters as they perform on either radio or TV is also valuable.

With a tape recorder it is a simple matter to record the voice of any newscaster preferred, and since there is no commercial use involved there is no legal objection to such use of the voice. The student who has his own tape recorder invariably progresses more rapidly than others. Miss Fogler, who came to the United States 22 years ago from France, where she had taught foreign languages, finds one point of similarity among people everywhere. And a rather odd one, at that. They are willing, she says to change anything about themselves except their manner of speech. For some obscure reason they associate their way of talking with personality. Actually, she expains, they are confusing personality with individuality. Personality is something inborn, a spark that will shine through no matter what old or new habits you clothe it with.

This is the most difficult factor of all to explain to the person whose voice you are trying to improve. Often they point to such living examples as Gary Cooper, whose drawl has become a decided asset, never seeming to realize that while Cooper may drawl, he also speaks clearly, distinctly and correctly (unless, of course, the script reads otherwise). Once Miss Fogler gets the idea across that it is not the individuality or personality she wants to eliminate, but the speech faults that may be a hindrance to those very things, a hard part of the job is done. From there on the final goal is reached with the help of an astonishing quota of patience and a good tape recorder.



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*Photos by Axel Bahnsen*

Dave Jones making a recording of the Gin Bottle Seven at the Turf Room in the Hitching Post in Dayton, Ohio. Note the double microphone arrangement used for binaural recording.

# Meet "The Monster" at Empirical Recording

by C. E. Smiley

*. . . How Dave Jones of Empirical nicely solved the problem of taking his recording equipment on location*

UNUSUAL among tape recording enthusiasts is Dave Jones of Yellow Springs, Ohio. His hobby of recording and his great enthusiasm for good Dixieland Jazz have literally forced him into starting a full-fledged recording business, including production of recorded tape and long-play records on his own label, Empirical. The operation of Empirical Recording is unique in that its recordings are generally made "on location," requiring complete portability of the recording equipment. This has resulted in the construction of "The Monster," a portable rack assembly for the recorders. Perhaps it is the central character of this story.

The establishment of the recording business became a near necessity several years ago when two of the better young Dixieland Bands in the country, the Dixieland Rhythm Kings and the Gin Bottle Seven, both located in Ohio and well-known to Dave, reached levels of proficiency which seemed to demand the existence of records. Like many others of the bands' friends, Dave hoped that recordings would be made so he might have them for his collection. However, there seemed to be no indication of interest on the part of the established recording companies, and Dave undertook the production of records, explaining that he "needed an excuse for buying a good tape recorder."



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For recording the first record, of the Gin Bottle Seven, a full-track Ampex 350 replaced the low-cost machine which had been used for experimentation and practice. A variety of microphones controlled through a mixer were used. Although several of the mikes were of good quality, others were not, and the quality of recording varied as the various mixer control settings were changed.

Thus, for the second record, of the Dixieland Rhythm Kings, a single condenser mike was used, following the "roving mike" technique. During recording, the mike was moved to follow the action of the band, in order to record the point of best overall sound balance. Meanwhile, the recorded sound was being monitored continuously with headphones. The results were excellent, since the band was in fine form at the recording session, and the new system of recording worked very well. It was so successful, in fact, that it has been used for all of the recordings which have followed.

The second record had been made "on location," at the Hitching Post in Dayton, during a special recording session outside regular business hours. From some experimental results, it appeared worthwhile to try for recordings made with the bands playing on their regular night club jobs in order to have music with greater spontaniety. Because of the ordinary bandstand lineups under those conditions, the recording balance occasionally presented a nearly impossible situation, with one or more of the instruments being too far away from the microphone. The use of two mikes with a mixer appeared to be the answer, except for the problem of making the mix exactly right on the first try. To have time to work out the best mix from the two mikes, separate recordings to be mixed later were indicated. For this purpose a second Stephens microphone and a 2-channel Ampex 350 were added to the system.

Obviously, in addition to its intended function, this new system was all set for making stereophonic recordings. It took only a small amount of experimentation to show that stereo was much more fun than monaural recordings. Also, by this time, arrangements had been made for the production and distribution of Empirical recordings on prerecorded tape by Livingston Electronic Corporation. With this outlet for tape, and its accent on stereophonic releases, the new system was put to work making them. All new recordings are now made available as stereophonic tapes, as well as single track tapes and records. For stereo recording sessions, the mikes are handled together as a single unit, using the headphone monitoring system.

With the addition of the 2-channel recorder a permanent rack assembly became a necessity, just to cut down the time involved in plugging the various assemblies. In addition, the rack had to be able to be moved anywhere, because of the great variety of recording locations. To meet this need "The Monster" was created.

To mount the two complete Ampex machines, Dave built up a close-fitting, tailor made rack which is spring-mounted on a specially made hand truck. All of the recorder cabling and interconnections are permanently attached as part of the spring assembly, making it necessary to plug only the power, microphones and headset to be ready for action. The life expectancy of the various cables is greatly increased, since they are not subject to flexing, and the connectors do not suffer from the normal wear and tear. The rig supports the recorders for either vertical or horizontal operation. For editing and easiest operation the flat position is preferred. The vertical setup is required by the cramped space of many of the recording locations.

In addition to the traveling required by recording the various groups on their home grounds, more travel is involved in providing for the commercial release of records and tapes. For the production of records, the music is transferred from tape to the master disc by playing it from The Monster into the superb disc recorder of Mr. E. D. Nunn, the producer of Audiophile records, at his Wisconsin studio. For the production of recorded tapes by Livingston Electronic Corporation, copying masters are transferred from The Monster to the Livingston recorders at their New Jersey laboratory.

For transit, the recorder assembly slides easily into a station wagon. The spring mounting cushions the equipment from the vibration of highway travel and helps reduce the rate of deterioration of the 12SJ7 tubes used in the Ampex electronic assemblies. To date, after travel of well over 15,000 miles, only one of these tubes has been lost, probably from normal usage. Before The Monster was completed, tube replacement was a big item in the budget,

The roving mike technique usually employed by Dave Jones works very well. The mike is moved to follow the action of the band and the recording is monitored continuously with headphones. This roving mike technique, invented on the spur of the moment, has worked so well that it is now employed in making many recordings.



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"The Monster" can be used either horizontally or vertically. On location it is used in an upright position as this is most convenient for reading the VU meters and controlling the tapes. For editing, etc. the unit is placed horizontally as shown in the picture at left.

and sometimes the carnage was truly frightening.

Once the Empirical label was established, Dave continued making new records as quickly as time would allow. So far, there have been two Empirical records by each of the two Ohio bands, and one by Robin Wetterau, pianist with the Dixieland Rhythm Kings. Now, because of Dave's continuing interest in the music, the schedule covers bands from other locations as well, including the Red Onion Jazz Band of New York City, Bob Mielke's Bearcats of San Francisco, and the George Lewis Ragtime Band of New Orleans. With the catalog grown so large, full national distribution of the records has been achieved to go along with Livingston's thorough distribution of the tapes.

In addition to his musical recording activities, Dave is a spelunker (cave explorer) in his spare time from his job as Secretary-Treasurer of the Yellow Springs Instrument Company, a designer and manufacturer of precision electronic equipment. As a spelunker he is working with a group exploring deep inside Floyd Collins' Crystal Cave in Kentucky. There, phone lines have been carried for several miles into the cave from its entrance, and the exploration goes far beyond. As communications man and explorer, he rigged a sound powered phone adaption which requires the explorers to carry only a single small phone unit for signalling, talking and receiving. The Monster goes along for the ride on many of the caving trips for recording the various phone conversations between the explorers underground and the surface operators.

Other activities for The Monster include some operation doing custom recording for Dayton and Yellow Springs clients. Also, some work is done for the benefit of students and the drama and music departments at Antioch College in Yellow Springs. And, as might be expected of any recorder, this one turns up at some of the better parties, both for recording and occasionally to provide the entertainment.

At first glance it would seem that the rig would not fit in the station wagon and the quizical look on Dave Jones' face might have been there the first time he tried loading it. But now, after months of use, he slips it in and out with ease. Right: the unit in position in the car. Web straps passed across "The Monster" at the front hold it in place. The rig is spring mounted and no trouble has been encountered from shock or vibration in thousands of miles of travel.



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For jobs away from power lines Jimmy Sterrett uses power from an ATR inverter in his father's car. The recorder is a standard home-type RCA machine with dual speed and dual track. As the radio station has single track equipment, Jimmy records on only one track of his tapes.

# MAKE MONEY WITH YOUR OWN RADIO SHOW

**by John Murphy**

***. . . Teenager Jimmy Sterrett using a home type recorder is successfully producing his own shows***

SHORTLY after Jimmy Sterrett purchased his RCA tape recorder, he decided to try his hand at earning money with it, not a great fortune, but enough to keep the hobby alive and pay its own way. His first thought was a radio program, something suitable to his locality. As a start, he chose to build a program around high school football.

Jimmy went to his local radio station, WHJB, in Greensburg, Pa., and explained his idea to the station manager. He inquired whether or not the station would be interested in buying the show, and the manager explained that they did not *buy* programs.

"Where do you obtain your programs?" asked Jim. The manager proceeded to explain the cost of station time, how a sponsor pays for air time, and the cost of producing the show, plus whatever profit you expected to make. "Once you locate a sponsor, bring the program back and we'll be glad to put it on the air," promised the manager.

It took all of two weeks for Jimmy to locate a sponsor. He made a sample program to demonstrate his idea, and visited store after store, trying to stir interest. Finally, an insurance company in a neighboring town was sold. They bought the program for the complete football season.

Complete with sponsor, Jim returned to the station manager, and a 15 minute program was scheduled on Fridays, beginning at 6:15. The first half of the show was to be devoted to one school's football team, and the second half to its rival.

Outlining his ideas for the program, Jim proceeded with his plans by visiting his home school first. There he recorded the school victory song, which he later had put on a disc. Using this as introductory background, he planned to simply play the record, at the same time his recorder



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was spinning, and lower the volume of the phonograph while he made the opening announcement on the show. Although far from professional, this method proved satisfactory.

Jim's budget did not have allowance for a mike mixer at that time, but with his tape recorder earnings, he plans to steadily increase his accumulation of sound equipment.

Jim then took his recorder to the school's locker room to interview the coaches and players. He timed this visit a few minutes before practice period when they were all together, and he did not prepare written questions. All interviews were informal and friendly. Jim prompted information such as what the coach thought of his team's chances to win, if he considered the players in good condition, how their weights compared, etc. The men were most agreeable and were enthused at the idea of being on the radio.

After talking to the coaches and team captain, Jim got five team members to give their names and state that they were confident of a win. They enjoyed listening to the immediate playback of their voices.

Comments by the school's principal, regarding the number of games his school's team had won in the past season, how it compared with other schools, etc. were next on the agenda. Jim explained that he wished to present these as a part of the program, and the principal, being impressed by the whole idea, was glad to cooperate. After recording these, Jim hurried to the school's auditorium. Here he picked up school cheers, which he thought would add color to his program.

For recording the school band inside, during practice, Jim put his mike in the balcony, or as far back as he could get it. He found that recording close picked up too much of one instrument.

When the band was practicing outside, however, Jim found recording rather difficult due to interferences, such as wind blast. Then too, when the men were marching, he could not get close enough and there was much distortion.

This same recording procedure was followed at the rival school and from his recordings, Jim edited his show.

During the commercials at the beginning, middle and end of the show, Jim used march music for background, fading it down under his voice, and, at the end of the commercial, increasing the volume of the music to normal.

Since Jim's recorder was dual track, and the Magnecords at the radio station were single, he could record on one track only.

In most cases, he was close enough to an AC outlet, and he did not have to use the inverter in his dad's car. He found that his recorder took a large amount of current, which discharged the car battery unless the motor ran, but he could not do without it for many of his on-the-spot pickups.

For the first few shows, Jim used the mike that came with his machine, but eventually he purchased another better mike with a longer cable. With a 100 foot extension cord he obtained for $7 in a hardware store, he found he could maneuver quite freely. He believes that most recorders today come equipped with competent mikes.

Besides earning money from this type show, Jim got into games free and rode in the bus with the players. He gained a great deal of know-how on recording from his football program experience.

Recently, he prepared a Christmas tape of an operetta. Recording it at dress rehearsal, he played it on the air at the same time the live show was going on, and people at home thought the broadcast was coming direct from the school.

He is now planning an interview program, talking to people as they enter the city at bus and railway terminals. In the spring, he plans a man-on-the-street show.

Jim says that recording radio programs is much easier than most recording fans think, and suggests that you visit your local station to see what they charge for air time. In his opinion, there is no greater satisfaction than to sit at home and listen to yourself on the radio.

Top: editing of the material collected in the field is necessary before the show goes on the air. Here Jimmy listens to the tape and makes notes on which cuts to use. Programs must be accurately timed for broadcast use. The 7½ inch per second speed is used for all recording. Lower: the record playing outfit in the rear supplies background music behind the voice. The school victory song is used to open and close the show. Jimmy invested in a better mike and a longer mike cord to make his operations more flexible.



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# How to Match Room and Orchestra for Recording

by L. L. Farkas

*. . . the room acoustics can make a big difference in your recordings*

VERY often an orchestra is set up for recording without any serious consideration of its suroundings. In some cases this will cause no difficulties and the quality of the recording will be relatively good. But when optimum results are desired, then the room must definitely be fitted to the orchestra, or vice-versa.

Now it might seem ridiculous to place a three-piece band in a huge hall, and equally absurd to attempt picking up a large band squeezed into a small space; yet these may be the conditions under which an acceptable recording must be made.

Let us first see what happens when a small orchestra is placed in a very large room whose acoustics are poor. By this I mean in a room with large smooth walls, a high ceiling, and possibly a tile floor.

Recording a small orchestra in such a place, particularly if a duo-directional type of microphone were used, would result in a very badly distorted pick-up. Low tones would boom, highs would sound tinny, while notes of the middle register would frequently come through so loud they would spill over—that is, they would appear suddenly choked. Now this may seem like an extreme condition, still you may be confronted by such room characteristics of varying degrees. So you should be ready to cope with them.

The first remedy is to place the instruments in one end of the room, bunching them as closely as practicable. In this way the combined tones of the orchestra are kept sounding solid. Then make a very close set-up. With the microphone set very near the front row of instruments, the sound has only a short distance to travel before being picked up. This will cut down a great deal of echo. Then, by hanging drapes or any other kind of sound absorbing material on the wall directly behind the orchestra, you can prevent a good portion of the sound from being re-

Ray Bloch's orchestra set up in the dead side of a CBS studio. Here reverberation is cut down by the louvered-type panels which can be seen at the side and the rear. Note the curtain which can be stretched across the panels for further deadening of the studio.

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A close set-up, with the saxophones up close, but the brass and bass instruments pushed back. Note the curtains all around the orchestra and the rugs on the floor to reduce reverberation and give the effect of a small room.

flected into the open part of the room, thus eliminating further echo.

If these actions still do not improve the recorded tones of the instruments, then you must ask the musicians to play softly. Keeping down the overall volume of the orchestra reduces the intensity at which various sound waves will strike the surrounding walls and ceiling, and naturally cut down the resultant reverberation.

Under these conditions the unidirectional microphone can prove quite an asset. Its property of picking up sound from only one direction helps to eliminate tones reflected from the open end of the room.

Of course there are other ways of reducing reverberation. Rugs can be laid on the floor, screens placed at various distances across the hall, canvas hung from the ceiling, or the place can be tightly packed with people. Any one or several of these means will reduce echoes in a large live room and will therefore improve the recording.

Difficulties are also encountered at the other extreme: when a large orchestra is squeezed into a small room. There so many instruments are playing close to the microphone that their combined tones will blast. And even when this effect does not occur, the tones of the brass section, bouncing off the walls, will almost invariably distort. This is caused by the cancellation and doubling of overtones, resulting in a peculiar orchestral quality often referred to as "canned music."

The remedy depends on the type of orchestra you happen to be recording. With a "Pop" outfit, the intimate split set-up will prove most effective. The instruments are grouped on both sides of a duo-directional microphone, or around an omnidirectional unit, like a crystal microphone with its face set horizontally. They are bunched as close together as possible to concentrate their combined tones and, except for the brass section and the bass, placed so near to the microphone that they are barely beyond the critical blasting distance. The brass instruments and the bass are also tightly grouped, but they should be separated by all the space available from the rest of the orchestra. This will cut down the tendency of these instruments to blast, and if, in addition, you ask the brass musicians to keep their tones below normal level, you may also be able to reduce the reverberation of the brass tones to a point where they will not distort.

If you want to decrease reverberation still further, you can of course use the same means that were utilized to make the small orchestra fit the large live room, although in most cases you will need to hang sound absorbing material behind the brass section only. The resultant balance will undoubtedly be far from perfect, but it may still produce an acceptable recording.

With an orchestra that plays classical or semi-classical music, the split set-up at close quarters will seldom produce a good balance. There it is again preferable to concentrate the pick-up in only one direction. A straight set-up is used, with the strings, then the woodwinds and brass sections arranged in successive rows facing the microphone. There is one modification. Normally, to obtain the singing sweep of the strings, the microphone must be set either at a fairly good distance from the instruments or raised to such a height in front and above the violins that the distant pick-up is maintained. But in a small room it is often impossible not only to obtain the necessary distance between microphone and strings, but the microphone may be so close that its beam does not even encompass all of the strings.

The solution lies in the use of two microphones. Set about a foot apart and raised as high as practicable, the microphones are tilted toward the violins so that each beam covers one half of the string section. By checking this dual pick-up on a trial recording, slight adjustments can then be made in the height, position and angle of each microphone until the two levels are balanced and the desired string quality is obtained.

The woodwinds are then crowded directly behind the strings, while the brass and percussion instruments are again pushed as far back as the limited space permits.

Of course this arrangement will not give you a symphony hall type of pick-up; at best it is a compromise between a close and distant perspective. Nevertheless, it will per-



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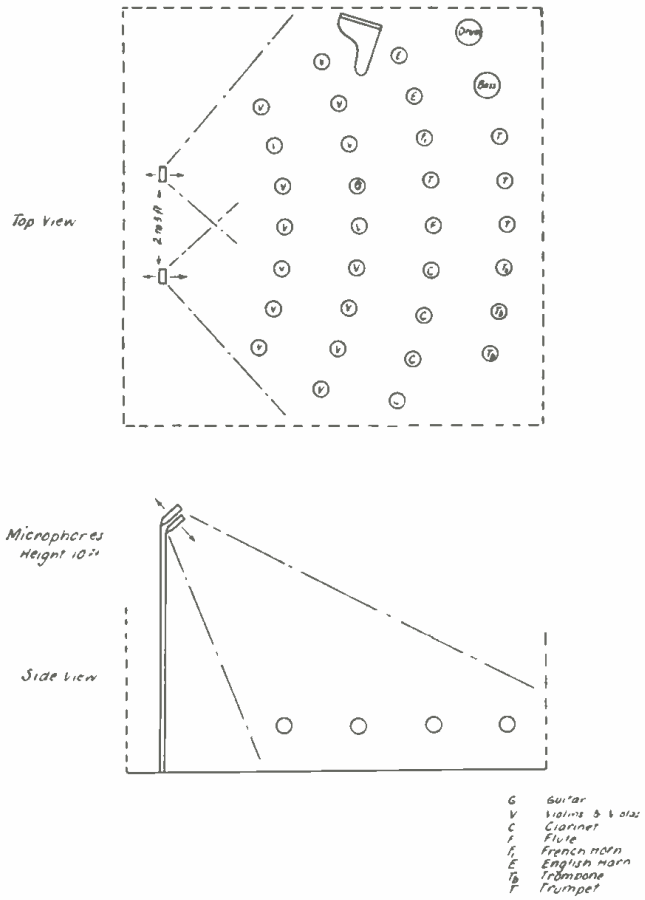


Symphonic Orchestra Pick up in Small Studio

mit you to obtain a reasonably good balance in which a great deal of the original string brilliance will be retained. The orchestra may even acquire a slight roomy quality which will not only eliminate any "canned music" aspect in its tones, but should also create the illusion that the orchestra is playing in a hall larger than the one it occupies. In this way some of the detrimental effects produced by the mismatch of the orchestra to its surroundings can be partially if not completely remedied.

This leads us directly to the subject of room simulation. There are times when you may not want to correct defects caused by the wrong type of room, but rather to simulate completely different surroundings in order to make the orchestra fit an imagined room. For instance, you may want to create the effect of an orchestra in a small live room.

One way to do this is to set the instruments very close together and then to hem them in from all sides by large smooth wooden panels. Such hard surfaces will readily act as reflectors for the various tones of the instruments and will thus duplicate the "canned music" aspect of a small live room.

If a small dead room is required, then you can hang thick drapes over the panels, place rugs under the instruments, and even hang sheets of linen, awning-fashion, over the whole orchestra. By using these or other sound absorbing materials, you should be able to reduce echo to a minimum so that the orchestra will seem to be playing in a small, completely dead room.

Now just as you may have wanted to shrink a large room to make it sound like a small one, you may also want to blow up a small room into an auditorium. One

Above: the drawing shows the placement of the mikes for a symphonic orchestra pickup in a small studio. The mikes are placed two or three feet apart and at a height of 10 feet with the faces tilted toward the musicians. Below: note the drapes hung from the balcony and sound screens to absorb reverberations which might mar the recording.

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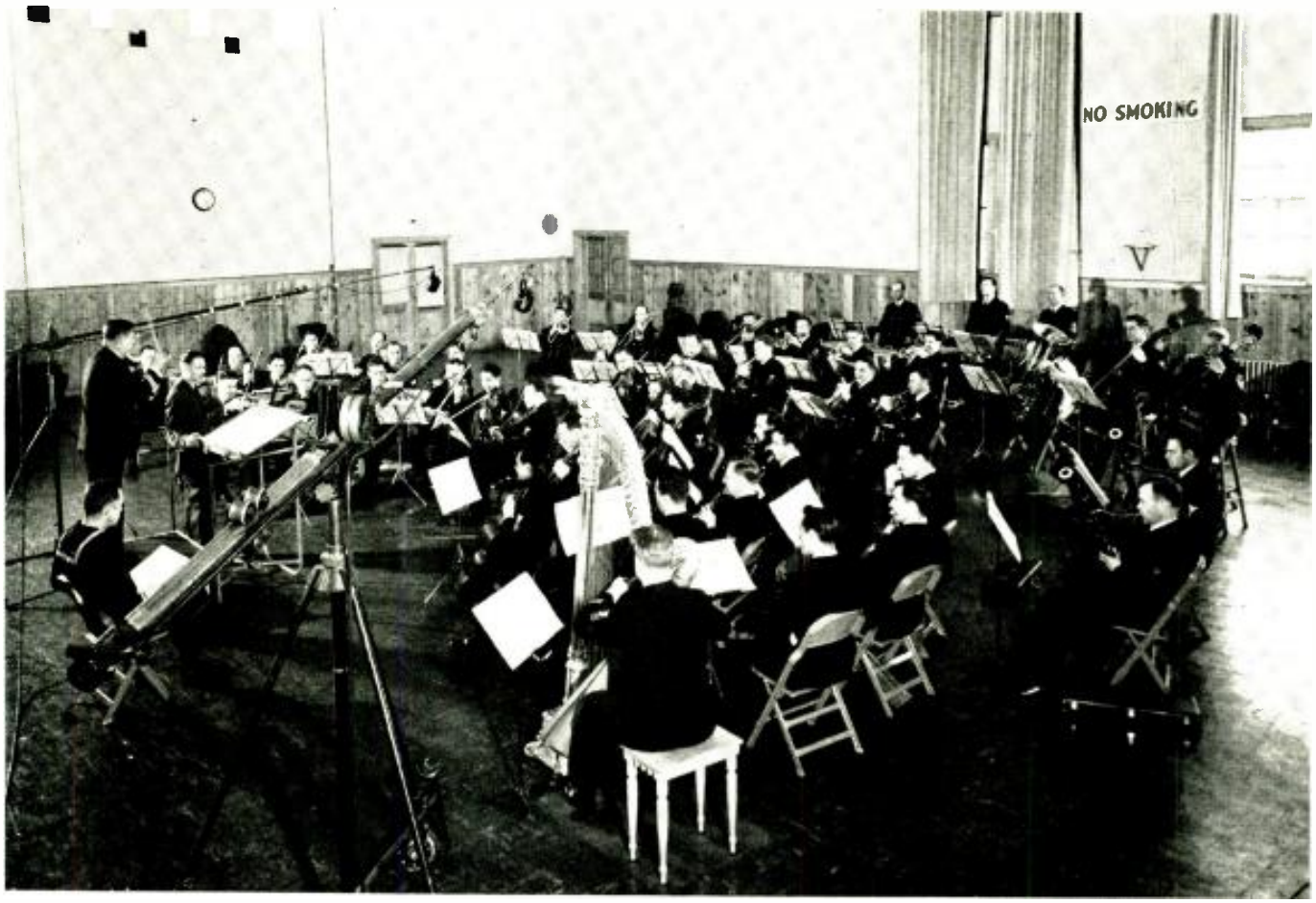


Making a room seem smaller than it is by using two microphones close in to pick up the strings. The same set-up can be used in a small room but with the microphones farther back, to simulate the singing sweep of the strings as would be heard in an auditorium.

way to create this illusion is to introduce a pronounced echo artificially into the orchestra pick-up. This is done by means of a second microphone which can be located anywhere in the set-up, although preferably as far as possible and facing away from the orchestra microphone. Now all you have to do to produce the desired echo is to open this second microphone while the orchestra is being picked up directly on the first unit. As the tones of the various instruments will strike both microphones at different times, there will also be a time lag between the dual pick-ups of each tone. This, plus the slight feedback which will normally occur with the two microphones open at the same time, will produce reverberation on the recording which will closely imitate sound bouncing around a hall or auditorium, particularly one not very well soundproofed. And since the larger the hall the more echo it will have, you can control the simulated size of your recording room by increasing or decreasing the amount of sound picked up by the second microphone. You can create an even more truthful reproduction of room size by changing the distance between the two microphones so that the time lag of the echo introduced more closely duplicates that of the room being imitated.

A second means to create the illusion of room size on a recording is the echo chamber. Briefly, this device consists of a series of connected corridors like a labyrinth with a loudspeaker at one end and a microphone at the other extreme. Sound picked up on the regular recording microphone is fed from the external speaker output of the recorder into the loudspeaker in the echo chamber. The sound waves travel along the corridors of the chamber and are picked up at the other end by the microphone. The sound from this last microphone is mixed with the sound picked up by the original pick-up unit and the combined tones recorded. Here again the delay incurred by the sound travelling through the echo chamber corresponds to the time lag of an echo in a large hall.

You can make an acceptable echo chamber by placing the loudspeaker and microphone at opposite ends of any long hall or corridor, particularly one that has smooth walls and uncarpeted floor. In a pinch you may also use a bath room with its hard reflecting surfaces.

By changing the relative positions of the loudspeaker and microphone in the echo chamber you can readily vary the reverberation time and thus reproduce the effect of rooms of different sizes. You can obtain even finer control by varying either the volume of the loudspeaker or that of the microphone input. As a live room will produce a louder echo than a dead or sound-treated room, changing the volume of the echo, will also change the simulated properties of the room. Thus by introducing the correct amounts of time lag and volume, you can make your recorded orchestra sound as though it were playing in a room of any desired type and size.

All these are tricks of the trade which you can use not only to distort orchestra pick-ups for mere amusement, but to create legitimate effects for dramatic scenes and, most important, to match the room to the orchestra so that the best recording can be obtained under the particular circumstances.



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# Build Your Own Mike Stand

by C. P. Hofmann

*Photos by L. H. Becker*

The small, round microphone that came with my "Crescent Compact" recorder was inconvenient to use because it could not be adapted to a standard mike stand. Consequently, I made a wood stand which serves the purpose very well. The construction of the stand is very simple, consisting of three parts: the holder, the stem and the base. If you care to make one like it, follow this procedure:

## THE STEM

Saw a piece of ½" diameter dowel stock to 5½" length.

## THE HOLDER

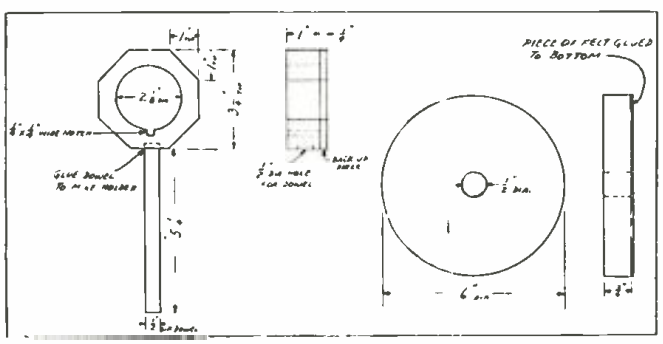
Take a piece of wood 1" thick and saw out a square with 3¼" sides. Cut a 2 1/8" diameter hole in the center. (I cut the hole by drilling a series of ¼" diameter holes all around the circumference just inside of the 2 1/8" diameter layout line. Then, I chiseled and filed the hole clean.) Next, chisel a ¼" x ¼" wire notch. After the hole and notch have been cut all the way through, nail a solid ¼" back-up piece in place. Then saw 1" x 1" diagonal cuts on all four corners.

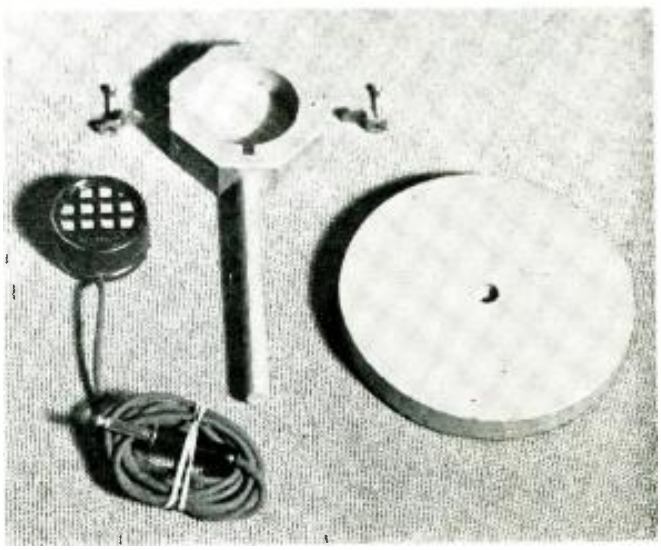
## THE BASE

Saw a piece of ¾" or 1" wood to 6" diameter and bore a ½" diameter hole in the center. Glue a piece of felt or rubber on the bottom. (I used felt from an old hat.)

## ASSEMBLY

When assembling the stem, glue it to the holder, but do *not* glue it to the base. Make the stem fit neatly into the base, so that it can be removed easily for use as a hand mike. Use any type of retainers which will keep the mike in the holder. (I used two mirror hangers which were purchased in the 10-cent store.) Finally, paint the entire mike stand with aluminum, gray or black. Sandpaper smooth before painting. A two-tone effect may be had by painting the base a different color than the stand and holder.



The mike stand takes very little material and is easily made. The drawing above shows the suggested dimensions for the parts, and the photo at right shows the stand before assembly. The small ceramic mike, furnished with some brands of recorders, is held in place by the metal lugs. It may easily be removed, if necessary, from the holder. This same design may be adapted to hold other types of small microphones.



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# TAPE CLUB NEWS

Jim Greene, new secretary of Tape Respondents, International.

Tape Respondents, International has a new executive secretary in the person of Jim Greene, who hails from Little Rock, Arkansas. Jim succeeds Fred Goetz in this capacity. Fred regretfully resigned due to failing health, and has been re-admitted to a San Francisco hospital, never having fully recovered from a serious operation in 1954. His illness has prevented him from answering a considerable amount of mail, and we are sure all members will understand the unfortunate delay in receiving a reply.

The new secretary expects to get T-R-I back in full swing within a short time, and plans to catch up on back correspondence as soon as possible. There will, however, be a short further delay, necessitated by the transference of all club records from San Francisco to Little Rock. Meanwhile, anyone wishing to contact Jim may write to P.O. Box 21, Dept. T, Little Rock, Arkansas.

Jim requests that any T-R-I members whose addresses have been changed since the last membership roster was issued notify him immediately in order to incorporate the changes in the forthcoming 1956 roster.

World Tape Pal Ed Bush and daughter, Gloria, behind counter of Club exhibit at the recent Indianapolis Hobby Show.

An exhibit for World Tape Pals, prepared by member Ed Bush, was presented at the Indianapolis Annual Hobby Show, which ran for nine days beginning November 12. He was assisted by his wife, "Jerry," his daughter, Gloria, and fellow club members, Hal Fisher and Paul Bonham.

According to Ed, an estimated 9,000 visitors listened, through headphones, to folk music and specially arranged tapes from 20 countries, containing songs and messages from local residents in each land.

Twenty hours of visitors' comments were recorded by Ed, via a lapel mike worn necklace fashion. When edited, these will be about three hours long.

Ed was interviewed by radio station WIBC announcer Sid Collins, regarding a program concerning tape exchange. He was also invited to record a Ladies' Day program of the Rotary Club of Indianapolis, which they wished to send to Rosebud Australia Rotary in an exchange of tapes. Ed successfully carried through this invitation on December 6, 1955.

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Voicespondent Charlie Swink, Radio Station WGAR, Cleveland, Ohio, as chairman of The Voicespondence Club's Blind Activities Committee, would appreciate your letting him list your name as a reader for the blind, should you wish to help in this work. If you read well and will contact Charlie, giving him a list of what kinds of periodical literature or books you have available, he'll see to it that you are assigned to a blind member who would like to have such things read to him.

A copy of the recorded edition of "The Voicespondent" may be obtained by all blind members, if they will send a 60-minute tape to the club at Noel, Virginia, on the first of October, January, April and July.

---

Free membership is being offered by International Tape Worms to anyone who is blind or physically disabled and cannot afford the membership fee. They will also receive one 3" reel of Irish LP tape, free of charge, to get started in this interesting hobby with as little expense as possible. Naturally, all such persons will be considered and treated as any paying member of the Club.

---

### JOIN A CLUB

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THE VOICESPONDENCE CLUB
Charles Owen, Secretary
Noel, Virginia
WORLD TAPE PALS
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P. O. Box 9211, Dallas, Texas
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Art Rubin, National Chairman
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# NEW PRODUCT REPORT

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Product: Ampex 612 Stereo Tape Phonograph

Price: $699 in custom designed cabinets; $694 in Samsonite cases. Phonograph only $395 in either.

Manufacturer: Ampex Corporation, 934 Charter Street, Redwood City, Cal.

## AMPEX 612 STEREO SOUND SYSTEM

### . . . superb sound from the 612 tape phonograph and two matched amplifier-speakers. "In-line" heads, 7½ ips speed. Will also play monaural tapes.

FOR attractive appearance and ease of operation this unit would be hard to beat. The same may be said of its performance.

The 612 is available in two forms, one, the portable type which is shown above and which is contained in three matching Samsonite cases and two, in the matching wood cabinets shown on the facing page.

There are no words to describe stereo sound, you simply have to hear it—it is an experience. There is no question in our minds that the serious music lover who has gone as far as he can with his hi-fi system and records is going to switch to tape and stereo sound in droves.

This Ampex outfit is not inexpensive but to make the unit available to those who might not have $700 to put out all at one time the company has instituted a time payment plan through its dealers.

Actually, stereo sound itself is not new but only now has it become practical since the advent and growth of the tape industry in recent years. For stereo, tape is the only logical medium.

The 612 and its accompanying amplifier-speakers are of the best craftsmanship and show evidence of quality control in the factory. All are well and carefully made.

The controls and threading are such that even a child could operate the unit. The feed reel is at the left and the tape simply passes from it, across the heads, between the capstan and roller onto the take-up reel.

Two levers control the play modes, one for play and the other for fast forward and rewind. At the other end of the tape deck are the selector switch for either single track or stereo and the volume control.

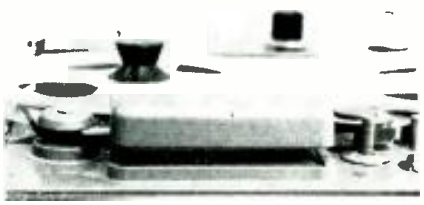
Two heads are mounted under the shield, the one at the left being used to pick up dual and full track signals and the one at the right to play the in-line stereo tapes.

In a recess on the side of the 612 case are the plug for the 110 volt line and the two outlets for the left and right speakers. These are marked left and right so that the user will be sure to have the right sounds coming from proper speakers. If the leads are reversed, the orchestra is likewise reversed left to right.

One thing we like very much about this outfit is that the master volume control on the tape phonograph controls equally the volume of both speakers. We also appreciated the fact that the two speakers were matched. Once the controls have been set on the right and left individual speakers all volume adjustments are made with the single volume control on the tape phonograph. Anyone who has ever tried stereo sound using two different speaker systems, each with its individual controls will appreciate this feature as we did.

The connecting cables are of generous length and will take care of most set-ups. Shielded wire is used and should longer cables be needed they can easily be made up. A standard plug is on one end and a cinch phono plug on the other.

The model 612 machine has a re-



The tape path is uncluttered and threading is rapid and foolproof. No pressure pads are used, the tape being held against the heads by regulated tape tension.



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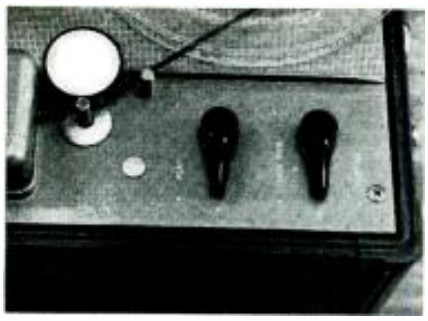
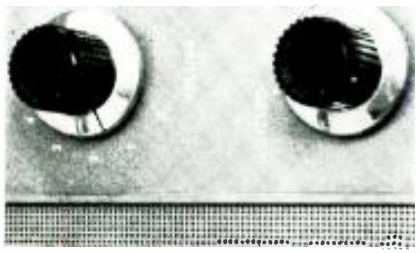


The play controls are to the right of the heads. One lever controls the play and the other the fast forward and rewind. They are interlocked to assure correct operation.



The volume control and selector switch. The volume control acts as a master control for both speakers, a great convenience. The selector switch has two positions, one for stereo and one for monaural tapes, either dual or full track.

sponse of 40 to 15,000 cycles relative to the Ampex 5563 standard tape. As the unit is a reproducer only some such standard is necessary. The output is rated at 1.25 volts into a load of 100,000 ohms or more at program level. This is enough to drive any standard power amplifier.

If the home already has a high fidelity music system, the 612 can be added to play the stereo tapes provided another power amplifier and speaker system matching the existing one, is added to take care of the second channel.

The placement of the speakers in the room is of importance. The basic principle is to have the sound seem to come from between the speakers. The speakers should be placed straight out in the room, not facing toward each other and the use of corner horns is not advised.

The maximum size reel the machine will accommodate is the standard 7-inch reel which will give a playing time of 32 minutes with regular thickness tape.

Particular attention has been paid to the timing accuracy which is such that any tone will be reproduced within 2 cycles per thousand.

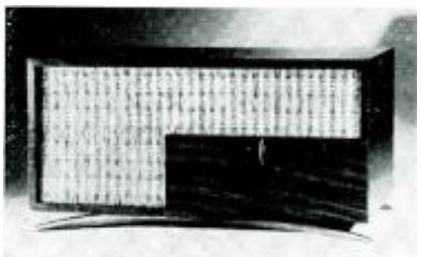
The reproducer will play either full or dual track tapes, in addition to the stereo tapes. With the selector switch placed on "single" the dual track tapes may be played in the usual fashion, as may single (or full track) tapes.

With the knob in this position the signal from the tape is fed to one pre-amplifier but the pre-amplifier output is fed to both output receptacles. This permits playing these tapes through both amplifier-speakers which improve the results obtained over a single speaker but still do not even begin to approach the effect of the stereo tapes.

With the selector switch in "stereo" position, both pre-amplifiers are in use and the individual outputs are channeled to the right and left speaker jacks. As the heads are of the stacked variety with the gaps in alignment, full track tapes will play with the selector switch in the "stereo" position.

No difficulties were encountered in operating the unit over a period of months. The reproducer is quiet and there is no hum generated between components, as sometimes happens when unmatched units are used.

We have no hesitation whatever in recommending this unit.



The home unit is attractively designed and may be had in either mahogany or blond finish, the latter at a slightly higher price. Only one speaker is shown above.

## The Only Recorder Service Manual

Complete servicing and trouble-shooting information on all models from 1950 through 1954 of Bell & Howell, TDC, Columbia, Brush, Eicor, Crescent, Crestwood, Pentron, RCA, Revere, V-M, Webcor, Webster Electric, Wilcox-Gray.

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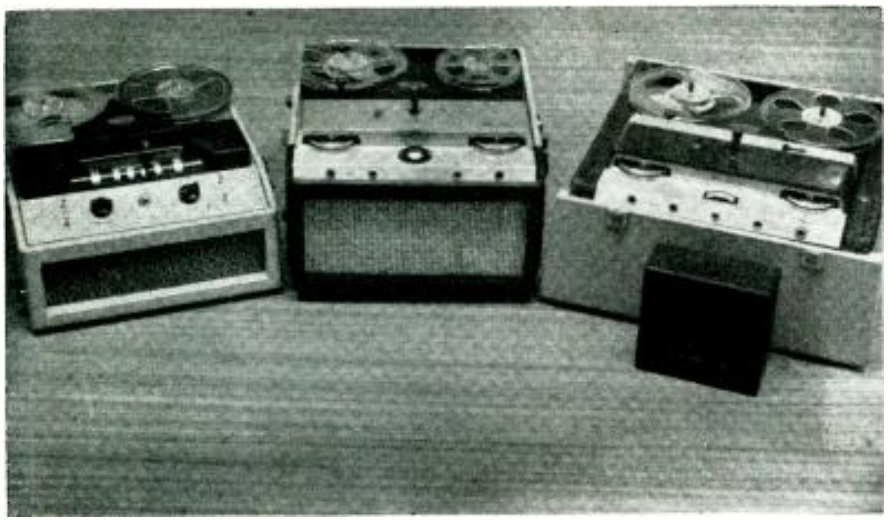
# NEW PRODUCT REPORT



STAFF OKSTED

Product: Pentron "Clipper," "Pacemaker," and "Emperor"

Price: Clipper $139.95, Pacemaker $199.95, Emperor $249.50.

Manufacturer: Pentron Corp., 777 S. Tripp Ave., Chicago, Ill.

## THREE NEW PENTRON RECORDERS

### . . . completely redesigned line features single control operation, dual track, dual speed, attractive appearance.

GETTING away from the dual controls found in previous models, such as the 9TC3, the new Pentron line features a single control knob for all functions of tape travel.

First to make its bow to the public was the Model RWN, the Clipper, which is the lowest priced recorder in the line.

This unit has a lever which is used in much the same fashion as the shift on a car. When the lever is placed in the slot at the far left the machine goes into fast forward. The next slot is the 3¾ ips position and next to this is the 7½ ips. These slots are dual as the lever can be thrown forward to play at those speeds or backward to record. The safety interlock to prevent accidental recording is the red button on top of the lever which must be depressed in order to throw the lever in record position. At the right is the rewind position.

Cinch type jacks on the front panel accommodate the microphone connection and an input is also provided for radio. Outputs include external speaker and external amplifier.

The tape threading on the recorder is unusual in that the feed is taken from the left side of the reel which brings the oxide side of the tape toward the front of the machine. Both reels revolve in a counter clockwise direction. A neon light furnishes the recording indication.

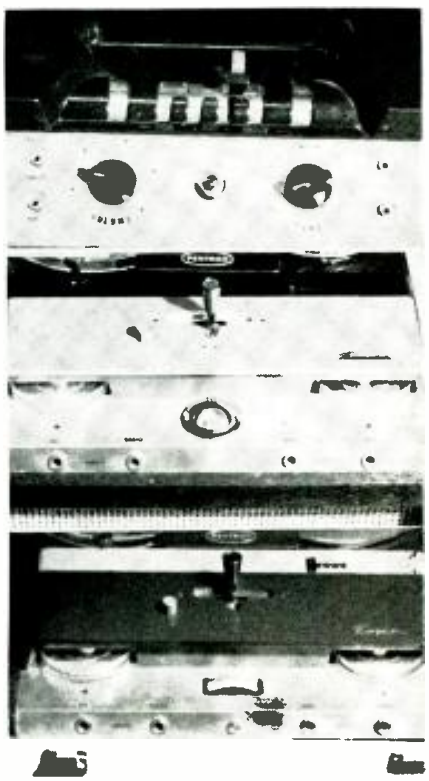
The maximum frequency response is from 50 to 9000 cps. The recorder we tested met the manufacturer's claims. Considering the price, the recorder is a satisfactory buy.

The Model T-90, the "Pacemaker" has a single lever "Unimagic" control which is a refinement over the one found on the Clipper. As can be seen in the photo, the single lever needs only to be tilted to right, left or forward to move the tape in the desired direction. The safety recording interlock is controlled by the red button to the left of the lever.

This recorder has two speakers and the response measured on the unit we tested exceeded the manufacturer's specifications of 10,500 maximum at the 7½ ips speed. The general tone quality using recorded tapes was good.

Threading on this recorder is from right to left, as on other Pentron recorders, with both reels turning in a clockwise direction. Threading is straight line.

On this recorder the volume indicator is a "magic eye" which furnishes a good indication of recording level. Inputs include microphone and radio and outputs are for external speaker and amplifier. Standard phone jacks are used and all are mounted along the front panel where they are easily accessible. Tone and volume controls are



The controls of the three new recorders are shown in this picture. Top: the "Clipper," center: the "Pacemaker," lower: the "Emperor."



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operated by wheel type knobs to the right and left of the recorder face.

The case is attractively finished in two tones of grey. With this machine was furnished a reel of Pentron's "Moods in Music" which was especially recorded for use on tape recorders.

An odometer-type counter is built in which makes the finding of selections on reels very easy. It has a zero reset on the counter.

All three of the recorders in this review have good braking systems which prevent the spillage of tape. All three also have heads with removable pole pieces which may be replaced when worn without buying a whole new head.

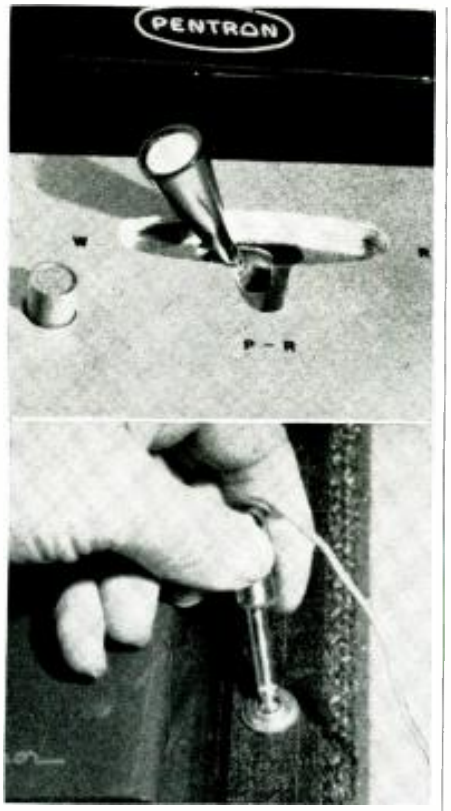
The Model HF-400, the "Emperor" is the largest and heaviest of the group and also carries the largest price tag. It uses the same type of tape transport and control that the Pacemaker has but is equipped with a good VU meter for recording level control in place of the magic-eye.

The input and output jacks are the same type and in the same locations as on the Pacemaker, but there is one additional jack on the top edge of the case which takes the plug for the small tweeter contained in a separate case. This speaker has an extension cord of good length on it which enables the user to place it at a distance from the recorder to improve the sound. The tweeter is a four inch speaker and is fed from a crossover network which allows it to take the highs.

Two six inch speakers are contained in the case and unlike the Clipper and Pacemaker, they face the sides rather than the front. The unit has a ten watt push-pull amplifier which provides plenty of volume.

The response is from 40 to 12,000 cycles per second at the 7½ ips speed.

The "gear shift" control on the Clipper was the first of the single control units to appear. The knob in the top of the lever is the safety interlock to prevent accidental erasure.




Top: the "Unimagic" control lever which is featured on the "Pacemaker" and the "Emperor" models. To the left is fast forward, to the right, rewind and toward the operator play and record. Lower: a separate jack is provided for plugging in the external tweeter furnished with the "Emperor."

On the Pacemaker and Emperor the change in speed is effected by raising or lowering the speed change lever. The lever is turned clockwise and lifted for slow speed and depressed for fast speed. When the recorder is not in use the speed control should be set half-way between the two speed positions. This will prevent flats from forming on the drive rollers.

The amplifier output is a high impedance output which is designed to connect to an external amplifier, radio or TV receiver or a PA system. If the sound coming from the recorder speakers is not desired, insert a dummy plug in the external speaker jack.

The recorder may also be used as a PA system by plugging the mike into the radio input jack. By plugging an external speaker into the external speaker jack at the same time, greater volume may be obtained and better placement in relation to the mike, to avoid feedback.

If you are considering a recorder in the low or medium price class we feel that these machines are worthy of your consideration.

*New "Magi-Clip" for*
**RECORDING TAPES**

Just out! New sturdy non-magnetic metal clip to hold your recording tape securely in place. Prevents unwinding of loose end and consequent damage to tape. Permits you to handle tape, mail it anywhere, or store it without fear of unwinding and wrinkling. Banishes cumbersome methods such as masking tape, rubber bands. Clips over the flange of any size reel and will last indefinitely with repeated use. You'll need one for each reel. Better order a supply today. Not yet sold in stores.

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(Continued from page 19)

## FEDERAL 47-A

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## HARRISON CATALOG

The Harrison Catalog of Recorded Tapes is published by M. & N. Harrison Inc., 274 Madisnn Ave., New York 16, N. Y. This handy publication lists every currently available recorded tape in three groupings: First, according to "Composer and Artist"; second, according to "Type of Music", and third, under the manufacturer's name. Information about the contents of each recorded tape such as composer, titles of all compositions, performing artist and label number is given. Also, information about prices appears directly underneath the name of each company. This catalog may be available wherever recorded tape is sold or it may be obtained by writing directly to the publisher. It measures 5¼" x 8⅛," is paper bound and is priced at 15¢ a copy.



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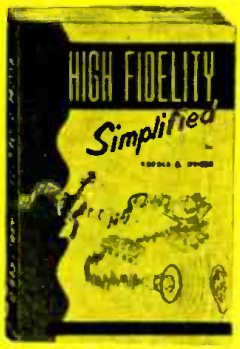


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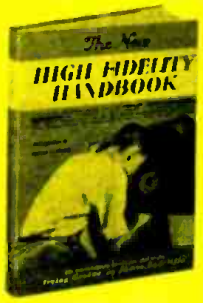


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RATES: Commercial ads, $.30 per word. Individual ads, non-commercial, $.05 a word.

Remittances in full should accompany copy. Ads will be inserted in next available issue. Please print or type your copy to avoid error. Address ad to: Shop or Swap, Tape Recording Magazine, Severna Park, Md.

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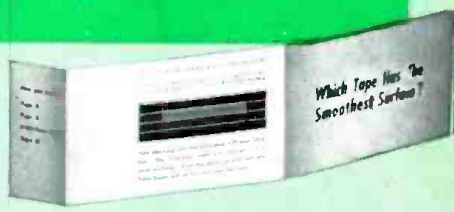


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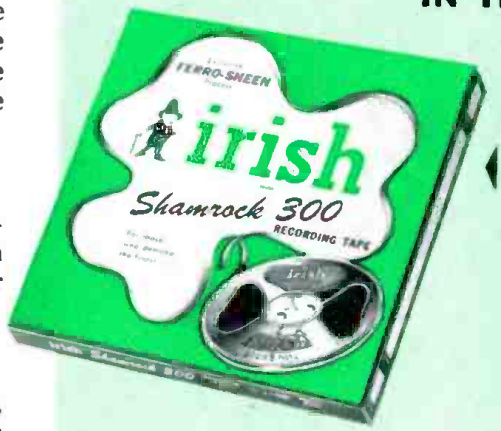


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