



TAPE RECORDING



April, 1958

Mr. Sydney G. Brooks
Brooks Jewelry
Cadiz, Ohio

TCR

35c



**AT Livingston
Studios...**

**recorded tapes get a
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Say "recorded tape" and chances are someone will say "Livingston." Livingston Audio Products in Caldwell, N. J., was one of the pioneers in the recorded tape field. Today, the Livingston library includes over 160 monaural tape titles and more than 90 stereos. And the list is expanding every month.

Art Cooper, executive vice-president at Livingston, says, "In this high fidelity age, the key to success in the recording business is quality. Our engineers have chosen equipment which they feel is the finest available. We make inspections and maintenance checks on this equipment every hour. And we approach magnetic tape in the same way—constantly testing and checking the quality. Our studies have shown that Audiotape consistently delivers outstanding performance. That's why we've been an Audiotape customer for years."

Livingston is just one of the hundreds of professional recording studios which rely on Audiotape for the finest sound reproduction.

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IT'S audiotape
TRADE MARK

it speaks for itself

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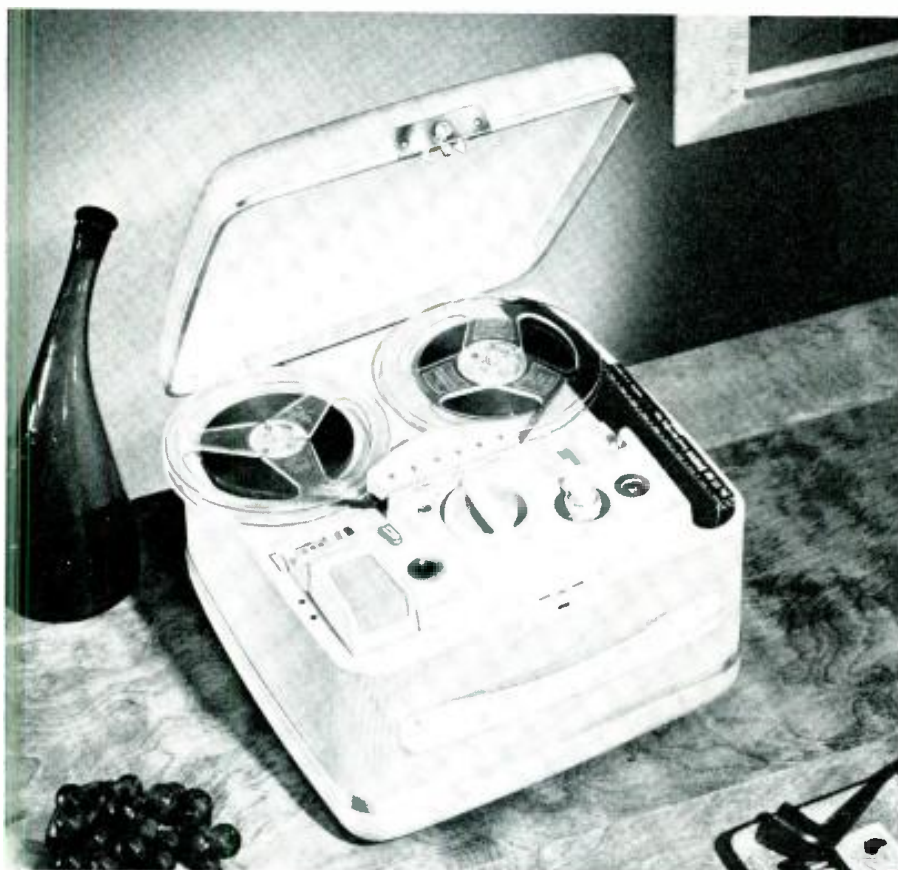
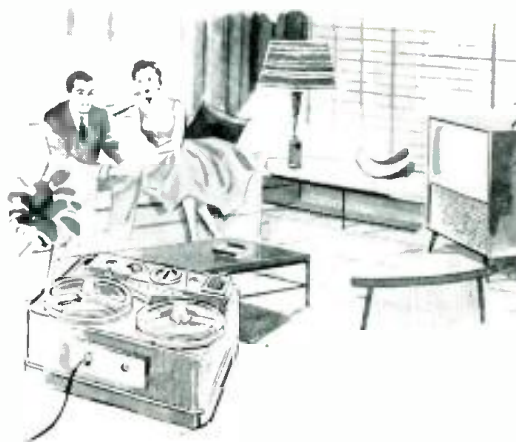
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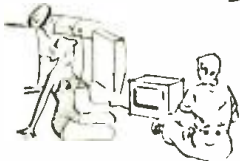
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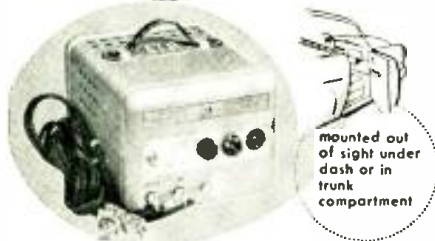


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HI-FI

TAPE RECORDING

VOL. 5 NO. 4

APRIL 1958

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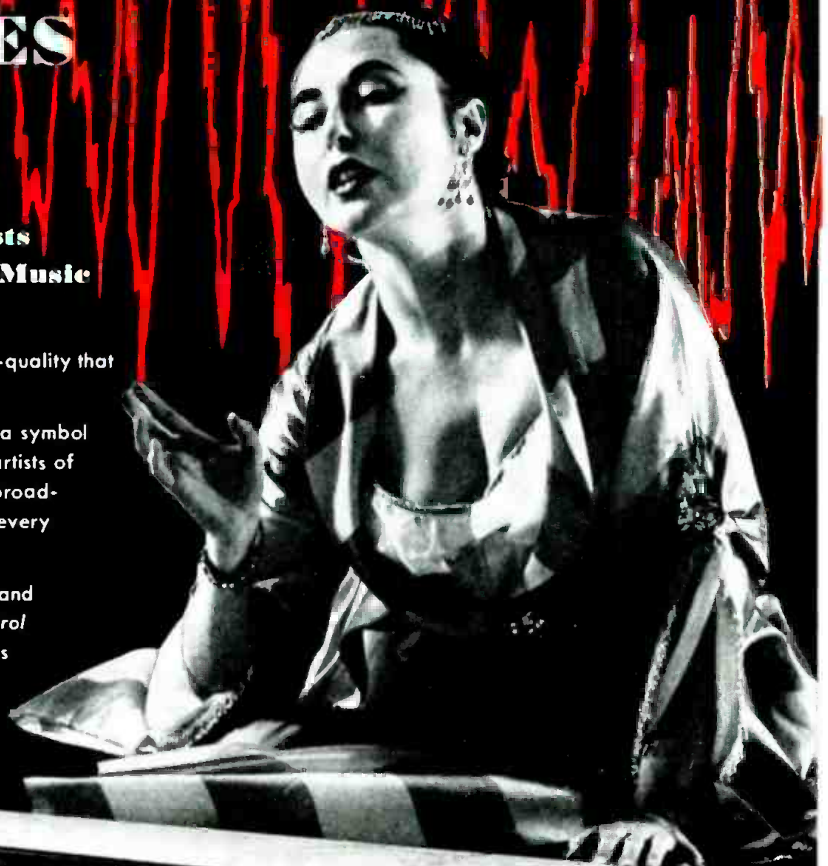
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Phyllis Curtin—
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Photo by
Eugene Cook

SOUND OF THE FUTURE

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NEW PRODUCTS

MAGNECORD PT 6-6



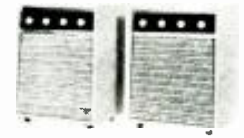
Magnecord's PT 6-6 tape recorder series is now back into full factory production. The PT 6-6 is housed in two separate cases for convenience and handling. This recorder

and amplifier combination has had only two changes. It got a new front panel of stainless steel, and the panels were made 19 inches long instead of the original 17 inches, which allows for standard relay track mounting in the studio. PT 6-6A (top) dual speed recorder in portable carrying case, has speeds of 3 3/4, 7 1/2 and 15 ips by capstan changer. Full track erase and record/playback head; half track heads optional; hysteresis synchronous drive motor. PT 6-6J (bottom) record/playback amplifier. Has 50 ohm microphone input, unbalanced bridging input, 10 watt power amplifier, internal monitor speaker with volume control, and VU meter. For complete information and prices, write to Magnecord, Inc., 1101 S. Kilbourn Ave., Chicago, Illinois.

BELL STEREO SYSTEM

A complete stereo system, consisting of two matched amplifier-speaker systems and a tape transport unit for record and playback, has been announced by Bell Sound System, 555 Marion Road, Columbus 7, Ohio. A stereo selector switch is provided for recording stereo in the inline or offset

Bell Stereo System Model T-207S



head arrangements. Frequency response rating for both record and playback are conservatively claimed by the manufacturer to be 20 to 10,000 cps, plus or minus 2 db with useful response to 20,000 CPS. The tape mechanism utilizes 3 heavy duty 4-pole motor. Wow and flutter are reported to be less than 1% of 1%. Other features of the tape transport unit include piano-key touch controls, cathode ray record level indicators, clear VU index counter and superpicon synchronized bias-oscillators and equalizer circuits for distortion-free recordings. The cost of the complete system, Model T-207S, is \$695.50. Write for details.

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 3. Offenbach: Gaité Parisienne. Minn. Sym/Dorati. Mercury MGS 15. Reg. Net 11.95. Our Price 9.79

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 5. Vic Dickenson Septet, A-V 707. Mon. dual trk. 7 1/2 lbs. Reg. Net 7.95. Our Price 4.50
 6. Vic Dickenson Septet, A-V 707. Mon. dual trk. 3 1/2 lbs. Reg. Price 4.95. Our Price 2.95
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 13. Sibelius: Origin of Fire, Song of My Heart, Finlandia, Pohjola's Daughter, Cinn. Sym/Johnson, Helsinki Univ. Choir, Sarritts, bar., A-V 1508. Inline or Stag. 7 1/2 lbs. Reg. Net 9.95. Our Price 5.95
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 22. Dante: Inferno. Own Trans. Read by poet John Gardner. Phonotapes PHT-10005. 7 1/2 lbs. Reg. Net 8.95. Our Price 5.99
 23. Tape Recorder Music, Composed and Recorded by Luciano and Leschenetzky. Phonotapes PHS-10020. 7 1/2 lbs. Reg. Net 8.95. Our Price 5.99
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 25. Schumann: Piano Concerto & Scenes from Childhood. Culmar, Novacek, piano. Pro Music, Czech/Slovak. Phonotapes-Sonoro PM-110. 7 1/2 lbs. Reg. Net 8.95. Our Price 5.99
 26. Prokofiev: Classical Sym; Block; Ballet Concerto. Soudra, piano. Phil. Jurgen Walthier, A-V 1514. 7 1/2 lbs. Reg. Net 7.95. Our Price 4.50
 27. Schumann: Carnival; Liszt: La Campanella; Mozart: Pastoralie Variet; Clementi: Sonata G Maj. Soudra, piano. A-V 1513. 7 1/2 lbs. Reg. Net 7.95. Our Price 4.50
 28. Schumann; Liszt; Mozart; Clementi, A-V 1513. 3 1/2 lbs. Reg. Net 4.95. Our Price 2.95
 29. Rimsky-Korsakov: Cop D'Or Suite; Debussy: Afternoon of a Faun, Austrian St. Sym. Jean. Moreau, Geo. Sinker, A-V 1504. 7 1/2 lbs. Reg. Net 7.95. Our Price 4.50
 30. Rimsky-Korsakov; Debussy, A-V 1504. 3 1/2 lbs. Reg. Net 4.95. Our Price 2.95
 31. Saint-Saens: Carnival of Animals; Toch: Pinocchio; Merry Overture; Sandra Bianca & Gerhardt Arnoldi (soprano); Hamburg Phil./Jurgen Walthier, A-V 1513. 7 1/2 lbs. Reg. Net 7.95. Our Price 4.50
 32. Saint-Saens: Carnival; Toch; Pinocchio, A-V 1513. 3 1/2 lbs. Reg. Net 4.95. Our Price 2.95
 33. Schumann: Scenes from Childhood; Bizet: Children's Games, Soudra Bianca, piano, A-V 1516. 7 1/2 lbs. Reg. Net 7.95. Our Price 4.50
 34. Schumann: Bizet, A-V 1516. 3 1/2 lbs. (See #33) Reg. Net 4.95. Our Price 2.95

35. Spoken Spanish Course — Conceived and spoken by Rupert Amaya. Elementary course for students, school and travelers. One 1200 7 7/8" reel for dual track playback. 3 1/2 lbs., & study manual. Reg. Net 14.95. Our Price 8.95
 36. Music of Johann Strauss, Austrian St. Sym/Kurt Woss, A-V 1503. 7 1/2 lbs. Reg. Net 7.95. Our Price 4.50
 37. Music of Johann Strauss, Austrian St. Sym/Kurt Woss, A-V 1503. 3 1/2 lbs. Reg. Net 4.95. Our Price 2.95
 38. Brahms: Hungarian Dance #6; Dvorak Slav Dances I, 3, 10; Moussorsky: Gopak; Smetana: Bartered Bride—Pulka, Furiant, Dance of Comedians, Hamburg Phil. Orch./Jurgen Walthier, A-V 1514. 3 1/2 lbs. Reg. Net 4.95. Our Price 2.50

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39. Bach: Suite #3 in D; Haydn: Piano Concerto in C; Haydn: Emperor's Hymn; Corelli: Suite for Strings, Hamburg Phil. Orch./Jurgen Walthier, A-V 1513. 3 1/2 lbs. Reg. Net 8.95. Our Price 9.95
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 41. Elgar: Wand of Youth Suites; Siegmeyer: Ozark Set, A-V 1514. 3 1/2 lbs. Reg. Net 4.95. Our Price 2.95
 42. Ippolitov-Ivanov: Caucasian Sketches (Austrian St. Sym. Orch.); Moussorsky: Pictures at an Exhibition (Sarr. Bino, piano); Sarasate: Romanza Andaluza (Ivry G. Lis, Violin), A-V 1029. 7 1/2 lbs. Reg. Net 10.95. Our Price 6.95
 43. Ippolitov-Ivanov: Moussorsky: Sarasate, A-V 1029. 3 1/2 lbs. (See #42) Reg. Net 8.95. Our Price 4.95
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 46. Mendelssohn: Midsummer Night's Dream; Tchaikovsky: Nutcracker Suite and Sleeping Beauty Waltz, Hamburg Phil. Jurgen Walthier, A-V 1022. 7 1/2 lbs. Reg. Net 10.95. Our Price 6.95

47. Mendelssohn: Tchaikovsky, A-V 1032. 3 1/2 lbs. (See #46) Reg. Net 8.95. Our Price 4.95
 48. Weber: Oberon Overture; Beethoven: Sym #2; Respighi: Pines of Rome; Phil. Orch. of Hamburg/Jurgen Walthier, A-V 1028. 7 1/2 lbs. Reg. Net 10.95. Our Price 6.95
 49. Weber: Beethoven: Respighi, A-V 1028 (See #48). Reg. Net 8.95. Our Price 4.95
 50. Austrian St. Sym/Kurt Woss, A-V 1503. 3 1/2 lbs. Reg. Net 4.95. Our Price 2.95
 51. Joe. Loco Trio: Mambo Rhythms, A-V 33. lbs. Reg. Net 4.95. Our Price 2.95
 52. Smith - Giamann Quintet: Vol. I, Smooth arr. sweet swing, A-V 33. lbs. Reg. Net 4.95. Our Price 2.95
 53. Smith - Giamann Quintet: Vol. II, Smooth arr. sweet swing, A-V 33. lbs. Reg. Net 4.95. Our Price 2.95
 54. Musical Varieties, Vol. I, Pop concert orch. playing top and semi-class. adaptations of your fav. melodies, A-V 33. lbs. Reg. Net 4.95. Our Price 1.95
 55. Musical Varieties, Vol. II, Pop concert orch. playing top and semi-class. adaptations of your fav. melodies, A-V 33. lbs. Reg. Net 4.95. Our Price 1.95
 56. Musical Varieties, Vol. III, A-V 73. lbs. (same as 55) Reg. Net 7.95. Our Price 3.95
 57. "Let's All Sing", Part. Melodies, Eddy Cole at the Organ, Includes: Hail, Hail; Down by Old Mill Stream; For Me & My Gal & Others, A-V 73. lbs. Reg. Net 7.95. Our Price 4.50
 58. "Let's All Sing", A-V 33. lbs. (same as #57) Reg. Net 1.95. Our Price 1.95

59. SCOTCH, Sound-Recording Tape, #190 A-36H-1001, 3600 ft. On NARTB Hub. Factory fresh guaranteed. List Price 10, Our Price 5.95
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TAPE IN EDUCATION

BY JOHN J. GRADY, JR.



LIBRARIES definitely function as educational institutions. Both juveniles and adults seek knowledge from the books available at libraries in the great cities and the smallest villages. In addition, many schools maintain limited libraries chiefly for reference purposes. Larger colleges and prominent universities provide extensive library facilities. But in every library installation, small or big, silent printed words have helped to broaden the knowledge of ambitious people down through numerous generations. Some authorities maintain that 90% of all knowledge is derived from reading printed words. Up until recent years, that's a fine acceptable belief. Let's accept it, rather than the humorous statement of other authorities, who insist that libraries in our United States are the storage vaults for the four great vocabularies of each individual user of the English language: 1. Unused unknown words. 2. Unused casually known words. 3. Used mispronounced or incorrect words. 4. Used known words — the working vocabulary of each one of us, be it limited or extensive.

In recent years, our old friends, the inventive educators, probably recognizing the inspirational inadequacy of the silent words of a stirring oration, began experimenting with magnetic tape. The desire for the sound of a voice in actual utterance, instead of mute words in a book, became an intriguing aspiration. The results of these audio experiments have accumulated to such an extensive satisfactory degree that it's certain, ultimately, there will be an interesting new function for up-to-date libraries in the near future—the listening room and the tape library. Solid precedents assure librarians and library officials of the advantages and the popularity of audio libraries. For numerous colleges and universities already have well-established tape libraries. And ambitious administrators of secondary schools are subscribing to pre-recorded tape services. Elementary schools and even kindergartens, through the efficacy of teachers with tape recorders, are proving that young pupils can be taught to read better and to develop a vocabulary of correctly pronounced words. And the ability to read well is the foundation of learning.

Tape in Education is happy to be able to supply a definite illustration of the value of a Tape Library, operating under the close observance of a nationally known educator, Dr. C. C. Trillingham, Superintendent of Los Angeles County Schools, in California. Los Angeles County is one of the largest and most populous counties in the nation. For 3½ years a rapidly expanding tape library has been in operation. Phillip Essman, Consultant in Audio-Visual Education, is in direct charge of the development of the tape library. There are over 1100 carefully prepared tapes available through the library. And Mr. Essman voices confidence that taped

instructive material is destined to hold a very important place in the teaching routine of every grade in any school system. He is in the market for good educational scripts, which are given careful reading and competent editing.

Because of the tremendous usage of tape recording equipment in the Los Angeles area, especially in radio, television and motion pictures, the Los Angeles County schools have access to the finest audio technicians. So the experience and equipment of these technicians is utilized. The material for educational tapes originates within the schools, but the production of the tapes is an outside function, usually at the audio laboratory of the University of California, on the Westwood campus. The narrators are experienced. Sound accompaniment is professional in quality. Magnetic Tape Duplicators, of Hollywood, on equipment too costly for school purposes, supply all orders of any title in the school library. They supply tape, box and mailing service at a price that can be termed attractive. The L. A. County School Department has been helpful to many schools interested in the development of a tape library, and it is evident that there is recognition of the fact that the future expansion of usage of pre-recorded tapes is a certainty.

In support of this expansion of magnetic tape usage, the inevitable just up and happened recently. An alert member of the press, in Southern California, dug up material about school textbooks that created a considerable stir. One of the results of his disturbing articles was an editorial having a wide circulation. The editor took a slam at the process of textbook selection and rated the procedure as being unnecessarily cumbersome, unwieldy and slow. In fact, the editor charged it is urgent that the method of preparing textbooks must be updated, streamlined and adjusted to the demands of the Space Age itself. The particular wordy needle used by the staff writer consisted of a potent barbed paragraph about schools being supplied with **OUTDATED TEXTS**. He drew attention to the fact that in September, 1959, science textbooks will be delivered, which were written prior to 1956, and reminded readers that school laws require the use of these outdated texts for basic instruction for at least four years. The reporter wondered if students in those coming years can be kept awake with old stuff—so old there's no discussion of actual facts about Sputniks, Explorers and the later space progeny destined to visit the moon. Instructors, experienced with the more elastic Audio-Visual mediums of education, will take care of the situation. *Tape in Education* ventures the prediction that contemporary taped texts will supplant the outdated published materials and win additional honors for instruction via modern **AUDIO**.

TEEN TAPERS

BY JERRY HEISLER, National President



TEEEN-TAPERS is now relocated at the University of Minnesota and apparently someone is following us since we received several letters from up here this past month.

An indication that even college students have a strong interest in recording was made evident in the letter we received from Bob Sigel and Barry Graceman, both students at the University of Minnesota. Bob and Barry reported that they recently made use of their recorder at a fraternity party. Operating on a jungle theme, the party was designed to take place in a jungle atmosphere. Securing a tape with jungle noises, Bob and Barry set up a loudspeaker in front of the entrance to the house and all of the approaching guests were surrounded with the sounds of howling animals.

Either the volume was too high or someone thought that some animals had escaped from the zoo because not long into the party, the boys report, the police came to see what all the noise was about. Bob and Barry also report that they use the recorder for party stunts now and then. So if you're college bound, don't leave the recorder at home.

With spring approaching we are reminded of having the car in for a spring tune-up and now is also a good time for a spring tune up of the tape recorder. If you read any of the books I mentioned recently you should know just what has to be done. Allow me to give some practical hints now in case some of you don't know what to do. Before starting, I might add that if you have a school tape club a good project would be to tune up all of the schools equipment. Now here is the method to use in tuning up a recorder.

1) **HEADS:** Remove the cover from the head and carefully swab the faces with alcohol, carbon tet, or one of the standard cleaning agents. Be sure you do not have the swab too wet and touch the head lightly so as not to get it out of line. Inspect the head for any apparent wear. If your tapes have been sounding bad you might have to replace it. **THERE IS NO SUCH THING AS A PERMANENT HEAD.** If you use your recorder often replace your head every other year or more often.

2) **ROLLERS:** Clean off excess oxide on all of the rubber rollers which drive the tape. If any of these rollers are worn or have bumps on them, replace them.

3) **CONTROLS:** Check the controls for noise. If you hear noise in the speaker when you turn the volume or tone control obtain a little switch lubricant and clean the switches and controls.

4) **CORDS:** One of the most frequent sources of recorder failure, especially among teens who give recorders a lot of action, are bad cords. Check all patch cords, microphone

cords, and A. C. cords for frays or broken connections. Solder them carefully to avoid hum and trouble.

CASTERS: Check the rubber shoes or metal rollers on the bottom of your recorder and replace them. These serve two important purposes. They keep your mother off your back for ruining the furniture, and they allow air to get into the fan and cool off the motor and tubes.

HANDLE: Be sure your recorder has a good handle. We have had the sad experience of having a handle break while carrying a recorder. This can cause you to break your recorder and certainly a big bump will knock the heads out of alignment.

DEOXIDE YOUR RECORDER: All of you are no doubt familiar with the fact that most tape sheds oxide and after a while you have a rust colored dust on your machine. Remove the covers from the head mechanism and brush away all of this dust. It gets inside of the machine and can cause trouble.

OIL: These instructions are the easiest. **DON'T DO IT.** Many teens are apt to want to explore the innards of a recorder with an oil can and make it run nice and smooth.

Most recorders are permanently lubricated. If your machine does require oiling follow the instructions carefully and when 1 drop of oil is called for use just 1 drop. Oil will only cause your recorder to slip. Be careful with it.

APPEARANCE: Just as a good garage dusts off a repaired car, clean up your recorder. A leather covered recorder will respond nicely to leather wax and a little paint will cover the scratches. Wax also protects the recorder. Finally, shine it up.

CAUTION: You will notice that all of these instructions involved the outside of the machine. **DO NOT OPEN UP THE INNARDS OF THE RECORDER UNLESS YOU KNOW WHAT YOU'RE DOING.** I have been the victim of the sad condition of having a recorder in front of me half taken apart and I didn't know how to put it together again. Be careful. You should be all tuned up now.

For those of you who like to make a little money with your hobby you might try to get some machines to tune up. A tune up as suggested should take about half an hour and you should be able to get upwards of \$2.00 for it. If you have some friends with recorders or if your club needs some money for new equipment, try a tune up clinic. It is even conceivable to set up a production line and service a number of machines at once. And if you can get hold of a tube tester, you stand to make even more money replacing tubes that are worn out. Whatever you do, be sure you know what you're doing so that you "tune and not ruin" a recorder.

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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," Hi-Fi 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.

—Recent literature pertaining to high-fidelity states that nothing in the foreseeable future can make any of one's present hi-fi set-up obsolete. I can see where this applies to equipment since one need only add another amplifier and speaker to his present equipment along with a stereo source to have stereophonic hi-fi. But what of the present L. P. recordings? Since the number of stereo tapes is limited, one must either wait until there are more at something closer to L. P. prices in the future as you buy L. P. now. I am mainly interested in opera (complete) and hate to think that in a few years these could be of no value in a stereo set-up. Since these now cost from between \$10-\$20 per opera, one can invest a considerable sum in building up a complete library. I am definitely interested in obtaining a good tape recorder and stereo head. My question concerns the feasibility of recording my present hi-fi L. P. operas and other classics on stereo tape at home. Would one be able to record a monaural recording played through 2 speakers with a mike placed in the appropriate position before each speaker and record from each mike on stereo tape. From my understanding this would not be true stereo but would it give more "presence" and 3-D effect to the recording than just playing the monaural L. P. with the amplifier over 2 speakers?

Would it be possible to by-pass the speakers and feed the electrical impulses from the pick-up via audio amplifier directly to the magnetic tape so that there could be two magnetic impressions on the stereo tape and then playback through 2 amps. and 2 speakers. I know this is not true stereo but if it could be done, would the result be better than just a monaural tape recording? Also, will it be possible to record stereo tape off AM-FM broadcast over the new type FM tuner which is built to receive the stereo broadcast all over the FM tuner? Some of these questions may sound unreasonable but I am not an electronic expert and only interested in good music. I ask them in all innocence. An answer, either via your magazine or by letter will be greatly appreciated and could help direct my future set-up of hi-fi equipment.—*D.W.C., San Angelo, Texas*

A—The key point to remember about stereo is the word "two." True stereo is picked up with two microphones and the channels are, and must be kept separate from start to finish. There would be little point in recording monaural records in stereo other than the obvious advantage of being able to play the music from tape instead of the discs to save wear and tear. In

fact, even with a completely monaural rig it is an excellent idea to record the records on tape and then play the tapes. In this way it is possible, using the long playing tapes, to provide uninterrupted music without the breaks associated with changing records.

There is a form of fake stereo where through the use of audio filters the high notes are played through one speaker and the lows bypassed to another. This gives an effect that is different but it is not true stereo. You could, if you wished, record in stereo from such a setup and have something unlike a monaural recording.

The present count on stereo tapes is 970 as listed in our Complete Catalog of Stereo Music obtainable through this magazine for \$2.00 a year.

You could record directly from the amplifier to the tape and, in fact, this is much to be preferred to setting up a mike before the speaker or speakers. Using the latter method, all the room noise is picked up and also the range of the recording is shortened to that produced by the speakers.

If stereo material is being broadcast and you have a stereo tuner then you should be able to record the music in stereo by using a stereo recorder. However, just because a tuner is capable of picking up the two channels, usually one on AM radio and one on FM, the result will not be stereo unless a stereo tape is being played at the studio or a live stereo pickup is being made by the station using two microphones, one for the FM side and one for the AM.

There is no question but that stereo is the ultimate answer for home music reproduction and its use is growing by rapid strides.

In addition to the points you mention, when and if the stereo discs become available you will be able to record them on tape in stereo and play back the tapes instead of the discs to save wear and tear on their sensitive grooves.

Q—Perhaps you can explain my dilemma! My tape recorder will soon enable me to work all states. Yes, it receives short wave signals. Sunday it received a message from a station in zone 7. On several occasions my musical enjoyment has been interrupted by a transmitted signal. However, it occurs in either setting, play or erase. It is usually from my tuner. The recording level must be set full to record the signal on tape. My recorder doesn't have a built-in radio. Is this a rare or common occurrence? What causes my tape recorder to act this way. I'm an uninformed, but inquisitive tape and radio hobbyist. In closing may I congratulate

Late you for such a fine magazine. One criticism, its pages should be five fold. It is a source of tape recording information to be studied, not just read!—H.B., Paterson, N. J.

A—Something in your recorder is acting as an AM detector and reducing the radio frequency signals to the audible range.

This sometimes comes about through loose detection in the preamplifier which can sometimes be remedied by wiring a 10,000 ohm resistor in series with the grid of the preamplifier input tube and the rest of the input circuitry. Look also for any loose or bad solder joints which sometimes can act as a detector in much the same fashion as the old "cat whisker" of crystal radio days. The difficulty will most likely be in the preamp.

Q—I was talking to the clerk at the record shop yesterday and he informs me that the companies putting out pre-recorded stereophonic tapes are leaning towards only producing stacked head tapes. I have a V-M model 711 tape recorder that I just purchased about a month ago and this machine plays staggered head tapes. Naturally, what the clerk told me gave me quite a start. Does this mean that I won't be able to play these stacked head tapes or is there some other remedy. Perhaps my concern is not warranted but a letter from you folks will set my mind at ease. Thank you.—C. C. B., St. Paul, Minn.

A—The clerk was correct, however staggered tapes are still available from: Audio Fidelity, A-V Tape Libraries, Bel Canto, Concertapes, Concert-Hall, Contemporary, Esoteric, Experiences Anonymes, High Fidelity, Livingston, Manhattan Omegatape, Phonotapes, Recorded Tape of the Month, Replica, Sonotape, Stere-O-craft, Sterentape, Urania, Vanguard and Zodiac. All the others put out stacked or in-line tapes only. As shown in our last issue, you can convert your recorder to play both stacked and staggered tapes with the conversion kit put out by the V-M company.

Q—Stereo machines intended to play stereophonic music seem to be similar enough to those special machines manufactured especially for language teaching that I am wondering just how they could be used for that purpose and where one could buy the type of earphones needed. I refer to those language machines where a permanent recording of the teacher's voice is on one track, listened to by one ear, while the upper track is used to repeat what he has heard. On playback, one then hears both the teachers voice and the students own efforts at repeating what the teacher said. If not good enough, the student tries again. Where can one buy such language teaching tapes? Those who can record on both tracks can of course make their own by copying phonograph teaching records but since most stereo machines record on one track only, their owners cannot do this. It seems to me some one is missing a good opportunity here to provide such tapes for owners of stereo machines who bought them to enjoy music but might now be easily persuaded to take some foreign language

since this is such an excellent way to learn it.—R. W. S., Miami, Fla.

A—We would suggest that you contact Educational Laboratories, 1048 Potomac Street, N. W., Washington 7, D. C. and Electronic Teaching Laboratories, 1818 M Street, N.W., Washington 6, D. C. Both of these firms have the dual channel recorders but whether or not they have language tapes to go with them for individuals, we do not know. The Tapespondence School, Middlebury, Vt. has a taped course in French with textbooks. Regarding phones, contact General Phones Corp., 5711 Howe Street, Pittsburgh 32, Pa.

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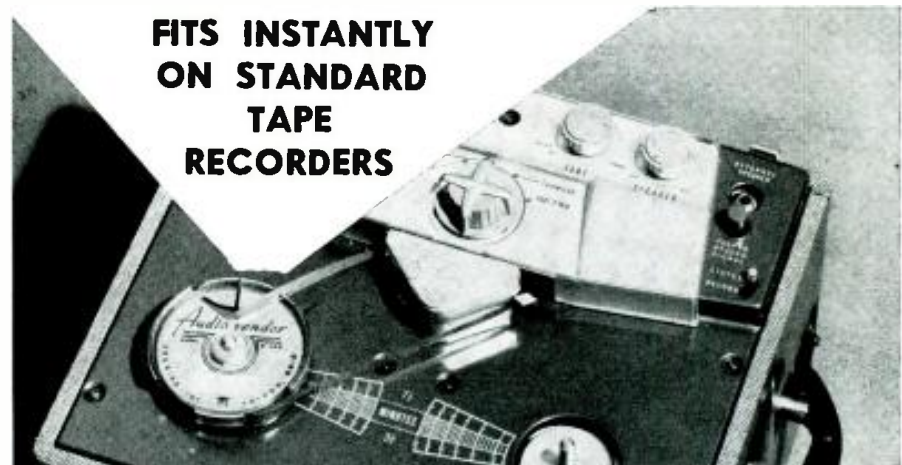
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CROSTALK

from the Editors

FUTURE of stereo disc not being enhanced by premature public demonstrations using improper equipment. Discs have received big play in some publications but are not ready for consumer. Production of discs not difficult. Playback another story. Too heavy pressure on tone arm, even with stereo phono cartridge grinding off high frequencies after few playings. Ordinary needle murders grooves because of lack of vertical compliance.

* * * * *

TOUR DE FORCE by some manufacturers has put Westrex method in saddle. Meanwhile, in addition to London method, a third stereo disc method has been announced Westrex to get nod from Recording Associations. According to Irving Rossman, Magnetic Recording Industry Association prexy, advent of stereo disc will be good thing for tape.

* * * * *

TAPE RECORDING field far from static. Victor Machin, Shure Brothers, V.P. announced that Shure had developed four channel tape head using regular tape. Head will be compatible and will enable user to play and record four tracks on tape, play present stereo tapes or dual track stereo, if developed. Use of four tracks will require very close tolerances in tape mechanisms, offer maximum economy. Mr. Machin forecasts that in three or four years tape recorders will be equipped with four channel heads as standard equipment.

* * * * *

GROWTH OF STEREO in last year is reflected in new edition of Complete Catalogue of Stereo Music put out by Mooney-Rowan Publications. New edition just off press lists 970 tapes from 47 companies and runs more than 100 pages thick. Complete listings for every tape are finding favor with tape dealers and buyers alike as is evidenced by orders for catalogue.

* * * * *

AUDIOPHILE has an idea of what words "Hi-Fi" mean. Average person has identified the word with a record player of any price. What kind of a "Hi-Fi" should I buy is a common question. Perhaps the term "record player" is on the way out . . . to be replaced by "HI-FI". Public which has been exposed to it recognizes stereo superior to "hi-fi" and different.

* * * * *

BIGGEST salesman for tape recorders is owner of tape recorder. By introducing and demonstrating recorders to friends he is responsible for selling many recorders. Survey taken by this magazine reveals 43% of people buying recorder did so after seeing it demonstrated in home of friend. "Asking the man who owns one" is popular too—38% of the folks who bought recorders bought the same brand their friends owned. Which leads us to wonder why more dealers do not put an attractive gold sticker on the recorders that they sell, something unobtrusive, that would recall to the owner the shop where he bought the machine.

* * * * *

TAPE CLUB NEWS

Headquarters of Tape-Respondents, International has moved to St. Louis, Missouri, Secretary Jim Greene announces. T-R-I headquarters was in Little Rock, Arkansas, from November, 1955, until January, 1958, at which time Jim moved to St. Louis to accept a position with a prominent commercial photography firm in that city. Prior to November, 1955, T-R-I was managed in San Francisco by the late Fred Goetz, who founded the club in 1950. T-R-I's new mailing address will be found in the list of tape clubs on this page.

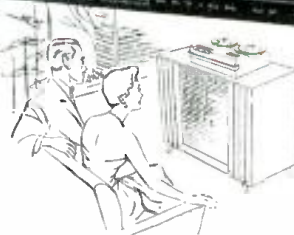
A new tape recording club known as the Catholic Tape Recorders has been organized. The primary purpose of this group is to assist pastors, sisters, teachers, writers, educators, artists, musicians and lay apostles in their work or study of spreading the faith acquiring interesting tape recorded material for classroom work, sermons, choirs, etc. The club is on an international communication basis. The Catholic Tape Recorders is not, however, a strictly religious club and it welcomes members of other faiths who desire to correspond simply for friendship, entertainment or whatever purpose they may have in mind. Anyone interested in joining can do so by writing to the following address: Catholic Tape Recorders, Jerome W. Ciarrocchi, Secretary, 26 South Mount Vernon Avenue, Uniontown, Pennsylvania.

A new recording club, dubbed The Tape-worm Club, of Los Angeles, is growing, but is still seeking additional members. At present, they have about twenty. The Tape-worms meet once a month at various member's houses. Dues are a dollar a year, plus additional needed assessments. Officers have been elected and the club is beginning to establish more of a format. Anyone interested in joining may receive more information by contacting the club secretary, Frances Blair, 4114 1/2 Halldale St., Los Angeles 62, Calif. Good luck Tapeworms.

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Jim Greene, Secretary
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- THE VOICESPONDENCE CLUB**
Charles Owen, Secretary
Noel, Virginia
- WORLD TAPE PALS, Inc.**
Marjorie Matthews, Secretary
P. O. Box 9211, Dallas 15, Texas
- AUSTRALIAN TAPE RECORDISTS ASSOC.**
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- UNITED RECORDING CLUB**
Richard L. Marshall, President
2516 S. Austin Boulevard
Chicago 50, Ill.
- THE NATIONAL TAPESPINNERS**
Carl Lotz, Secretary
Box 148, Paoli, Pa.
- THE BRITISH AMATEUR TAPE RECORDING SOCIETY**
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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, Hi-Fi TAPE RECORDING, Severna Park, Md.

To the Editor:

While most of the contents of your magazine are "over my head" I still enjoy it. Please don't neglect printing articles for people who don't have so much technical knowledge.—Doris C. Archibald, St. Paul, Minn.

Thanks for your comment and we certainly will print articles for those who don't have a fund of technical knowledge. You'll find, however, that you will pick up all the terms very rapidly and be able to hold your own with the best of them.

To the Editor:

In the September issue of the American Tape Exchange Newsletter you will find "we have found" from a reliable source that carbon tet is murder to recording heads. It leaves a "film." In the October issue of "The Voicispondent" you will find ". . . The cleaner solution (Long Life Recorder Head Cleaner) cannot be applied to plastic . . . will be ruined if cleaned with this solution." It sounds to me that using either of these cleaners will cause more harm than the good might do. Do you have any comments on the use of these cleaners.—George A. Barton, 3rd, San Francisco, Calif.

Long-Life is an excellent cleaner provided it is not permitted to contact the plastic escutcheons with which some tape recorders are equipped. It leaves a faint pink stain but does no other harm that we know of. Carbon tet will injure some heads and we suggest that the manufacturer's directions be followed regarding head cleaning as the head construction varies between brands of recorders. Isopropyl alcohol has also been recommended as a head cleaner. Care must also be exercised with some cleaners that they do not contact the rubber capstan pressure roller. Again, consult the manufacturer's directions.

To the Editor:

But, why, in replying to a "Tape to the Editor" on page 16 of the November issue, do you give out with such misleading information? In answering Mr. Landau's complaint (and mine) about the high cost of tapes you state that the price is coming down and illustrate it by mentioning stereo tapes can now be had for \$6.95. Since these tapes give only about 15 minutes play, and the usual \$11.95 tapes last around 30 minutes, I would conclude that these new "cheaper" tapes actually cost the buyer one dollar extra for each 15 minutes. For some time now, I've been collecting a list of stereo

tapes I'd like to have. But so far I've only bought two, and if the prices don't become more realistic before long, they'll probably be the only two that I'll own. Maybe the new stereo records will speed things up a bit.—Eduin H. Hess, Richmond Hill, New York.

If you're interested in getting the most for your musical dollar we would suggest that you build a collection of the stereo samplers put out by most companies. For instance, Omegatape lists a 25 minute reel for \$5.95. Tape of the Month has one for \$4.95. Sonotape has two items at \$6.95 each. Vanguard has a 30 minute Beethoven Symphony demonstration tape for \$6.95. Bel Canto has a 15 minute reel for \$3.95. Capitol has a reel for \$9.95. Concert Hall a reel for \$4.00. Livingston is offering a 300 foot reel of stereo for 50 cents—less than the cost of raw tape—with a coupon clipped from the new issue of the Catalog of Stereo Music, etc. Regular reel prices will come down as volume of sales increase, meanwhile you'll find the samplers mighty good stereo even if many of them are excerpts—they are the best.

To the Editor:

Your excellent report on the development of magnetic recording I am sure was appreciated by many friends of magnetic recording. Many details of the progress described were new to me especially of the later years, but one period I am able to report, as I was quite interested in the medium. I was at the Berliner Funkausstellung in August 1934 that the Allgemeine Elektrizitäts-Gesellschaft publicly presented the Magnetophon and not 1935. The reproduction achieved was quite astonishing (at least for those days) and at approximately the same time the German Broadcast employed the Magnetophon for their program recordings. Thought you might care to know.—George G. Kappes, Montreal, P. Q., Canada.

Thank you for adding the correct date on the Magnetophon to add to the history of tape recording. Such information is of importance and the more of it that is secured, the easier and more complete will be the history of magnetic recording when it is finally and completely written.

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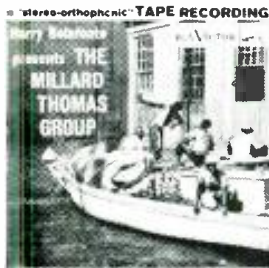
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Woodcock on Tape

by Douglas E. Wade

... "in the spring a woodcock's fancy lightly turns to thoughts of—well, anyway, it makes for interesting recording."



Photos by Gordon H. Brown

Where's the birdie? Telephoto lens brings the woodcock into close view on a peenting, or courtship, ground, although he is quite difficult to see, since he blends so well with the surroundings. The courtship consists of a "song and dance" routine designed to attract the female lurking nearby watching the proceedings.

In the spring of the year many wild creatures renew their population. Often a "dance" or courtship performance is a vivid part.

No exception is the American Woodcock, a member of the Snipe Family and a noted game bird. The male woodcock go through a neat song and dance. One of the courtship sounds made by males has imitatively been called a *peent*. It sounds like a "bronx-cheer." The "dance" ground is called a *peenting ground*.

From early January in the southern states to as late as early June in the northeastern, northcentral states and bordering Canada, male woodcock can be heard and seen performing on peenting grounds. Presumably there is a female lurking nearby, trying to decide if she likes the guy. During the early season and migration northward, the brown chunky little "timberdoodle" may perform before empty galleries. Unless some one is on hand with a tape recorder.

It started on January 12, 1957, when Harry Hampton, South Carolina outdoorsman and columnist heard and reported on three woodcock. After several trips to Harry's plantation on the edge of Columbia, I resolved to tape entire per-

formance and study the results. Between January 17 and March 5, nine usable tapes out of eleven attempts were made.

Here it should be pointed out that many fine studies have been made on woodcock without the aid of tape recorders. Even with the assistance of co-observers these studies done in the *traditional manner* of listing in a field notebook what you hear and see are not the simplest exercises—especially when you are working in the dark. You can miscount or fail to manipulate or read a stopwatch correctly. You have no check on your accuracy and you don't trust your recall.

Some Natural History

The woodcock's performance is bizarre and more complex than I shall describe in a few generalized statements.

A few minutes after sunset or an hour before sunrise, the male flies in quietly to a peenting ground. After a few visits to a peenting ground, it is surprising how accurately you can predict arrival.

Almost immediately on arrival the male starts on a first series of peents, which is likely to run longer than any given

subsequently that evening or morning. From the nine taped performances I tallied 2,114 peents involving a delivery time of 6,888 seconds. The average is 3.2 second per a peent, although this interval of time was not always followed. Peents given in any one series ranged from one to 223.

Then the male takes off on a spiral *up-flight* (guesstimated at 200 to 350 feet) and returns on a zig-zag *down-flight*.

Audially the up and down flights are distinguishable. The up-flight is characterized by a series of *twittering* sounds, probably coming from the wings. Coming down the bird utters a series of sharp throaty *chirps* and some twittering.

Toward the end of a flight the male levels off quietly for a landing. On the tapes you can pick up the rustle of the wings as the "brakes" are applied and the sound of the bird hitting the ground. After about three seconds of silence another series of peents is started.

This pattern of peenting and flying is repeated until the

The author is shown adjusting the microphone to pick up both ground and aerial sounds of the woodcock. The "peenting" and chirping continue as the bird swoops up and down in a flight pattern. Woodcocks usually "dance" at dusk and dawn, but sometimes continue throughout a moonlight night.



male leaves or stops his song and dance. Total performance times on these birds ranged from 15 to 34 minutes.

Flights, clocked by a stop watch in the field and rechecked from the tapes, ran fairly consistently and averaged: up-flight, 47 seconds; down-flight, 13 plus seconds; scaling in to land, 7 seconds; or, a total of 67.

A soft, low-register "tookoo" note immediately precedes the peents. Occasionally the tookoo is given without the peent. Some observers, working with me, did not immediately distinguish the tookoo notes, but after monitoring with earphones learned to hear them unaided.

Other sounds made by male woodcock are described in the literature. One, a "*cackling*," seems to be reserved for those times when another male attempts to horn in on the peenting ground. This cackling was briefly recorded when a male coming in on a landing made a flying pass at the microphone.

Analysis of one very fascinating and rare occurrence was made possible by study of the tape. A male had started up on an aerial flight but intercepted a Great Horned Owl which chanced to be winging straight over the peenting ground. My wife and I whispered quite loudly and excitedly while watching this. Actually, we could have talked our loud. The woodcock turned and flew below the owl for 15 seconds, making several upward thrusts at the owl. He then left the owl and completed a true-to-pattern up-flight. On tape were our whispers. We were able to time from the tape the entire flight and deduct the 15 seconds used in quietly following the owl. From the perceived angles of interception and departure, we were also able to figure roughly the speed of the woodcock and the owl, which was about 23 m.p.h.

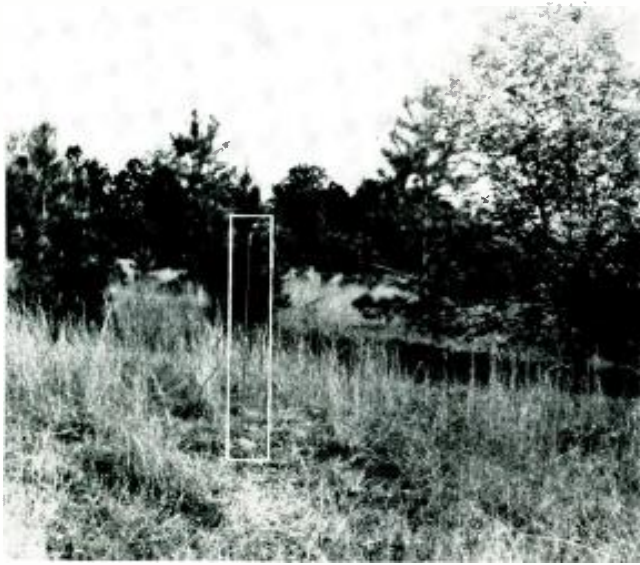
Equipment Used

The equipment had to be portable; not all peenting grounds would be accessible by car, although the two studied at Columbia were.

An Ampex 600 (7½ ips., single track, 61 watts input) was available and portable. Power was supplied by a six-volt storage battery and through a Model 6R10 Cornell-Dublier



With the tape recorder faithfully capturing the sounds, the observer is free to watch and write down visual observations. Data simultaneously obtained are valuable in certain natural history studies. Repeat playbacks of the tapes enable one to check on the accuracy of counts and time.



Thick brush camouflage the mike, which is shown inside the box in photo. On this site the woodcock ranged within ten feet of the mike during its peenting. The omni-directional mike proved adequate in picking up all sounds while bird was on the ground or in the air.

converter. (Vibrator noise was satisfactorily muffled in the closed trunk of the car.) At one ground we hid the car behind some pines 100 feet away. The car was out in the open at the edge of the other ground.

Three different high-impedance microphones were used. An omni-directional Electro-Voice 647 seemed efficient and was least sensitive to wind blast. Since the two grounds were not larger than 40 by 40 feet, it was possible even with short cables, to locate the mike near the center of each and aim toward the spots most frequented by the woodcock while peenting. To catch aerial flight songs, the mike was also given a 60 degree upward tilt. Once set the mike was not touched during the performance.

The VU meter on the Ampex and a Telex, Model 3775, headphones served effectively in monitoring. Mike recording levels were set 6 to 8 for peenting, and 8-10 for aerial songs. In spite of unwanted background noises (trains, squealing switch engines, planes of all sorts, cars and trucks on a highway about a mile away, dogs, roosters that you wanted to toss in the pot, children shouting, and an infernal power-saw and trees crashing), it was possible to get tapes that proved satisfactory for study purposes. Scotch tape, Extra Play, No. 190A-18-110G, was used.

Power failure because of a depleted battery hit twice. (Once, when I did not expect it and had a beautiful setup with the woodcock peenting three feet in front of the mike, in perfect view, no wind and with a minimum of unwanted background noise.) Batteries in parallels and up to full charge before each field session are obvious cures for power failure.

The power failures did reveal the importance of maintaining a constant 60 cycle, A. C. drive rate. To check tape drive speeds, I devised a crude system of whistles timed by a stop watch at pre-established intervals. Playback timing on a 60-cycle alternating (household) current showed insignificant gains in tape-drive speeds. Since I am a tyro in electronics, I have asked the aid of some local engineers in this problem of maintaining a constant tape speed. We are also planning to test several types of parabolic speakers in place of microphone.

These nine tape studies have furnished usable and interesting information on the American Woodcock. The data are probably more accurate than those obtained from past studies using traditional methods. Repeat playbacks enable one to check on accuracy of counts and time.

When using a tape recorder in the field, the observer is freed to extend the scope of simultaneous observations. With tape getting the basic audio data, one can record in a notebook such visual data as flight patterns, light intensities at various times, action on and over peenting ground, influence of vegetation, wind, and placement of observers and cars. A variety of types of data quickly accumulated is most helpful in making certain studies—especially those of "ecological import," where you are studying inter-relations and looking for practicable applications.

Woodcock throughout their southern wintering range and northern nesting grounds have been captured alive and marked by metal leg bands of the U. S. Fish and Wildlife Service. Additional markings can be made by use of colored plastic leg bands or dyes or paint sprayed on the bird. You can give an individual bird a name (band serial number) for future recognition when re-trapped alive or shot, provided the band number is reported to Washington, D. C.

Past live-trapping methods used are ingenious, but we're working on an *audio-visual* trap, involving use of tape recordings of peenting males, mirrors and powered throwers. Such a "Rube Goldberg" device is a challenge. We hope to have something to test next season.

Tapes can be exchanged with other students and teachers of natural history or wildlife management; at least 60 colleges or universities offer courses in wildlife management and others give training in conservation education.

Tapes can be used to check accuracy of records obtained in the traditional manner, train observers and aid and test their re-call abilities.

In The Interest Of Education

By using portions of the tapes made on the woodcock, I have developed some programs given before school and adult groups.

Elementary students, 4th through 6th grades, have been most receptive. The tapes, a stuffed woodcock, field-study paraphernalia, photographs, films, maps, and graphic summaries of data make an appealing lay out.

Initial group participation is gained by playing back a minute or two of a tape surreptitiously made of classroom noises and introduction of the speaker. By this "mean trick" I demonstrate vividly and precisely how one sets up in the field to record the sounds of a woodcock on a peenting ground. Short portions of the field recordings are played. You can easily switch back and forth from tape to blackboard or other visual aids to chart out flight patterns, explain song patterns, migratory routes, trapping methods and summarize data. All of this informality encourages an unusual amount of student participation.

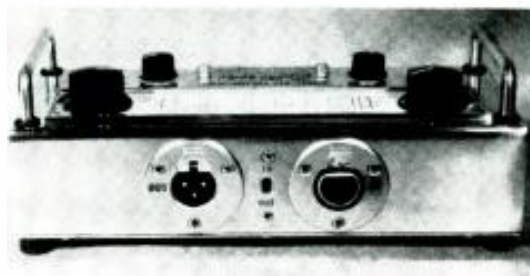
Parts of the woodcock tapes were made to be used in a 26-week's series of quarter-hour tapes on South Carolina Wildlife, to be broadcast over the University of South Carolina FM station and picked up by schools in and near Columbia.

Now, did I hear some one say, "A bird on tape is worth twenty in the bush!"

Versatility-Plus

by Jack Bayha

. . . new E-V 667 mike with transistor preamplifier mate.



A NEW microphone aimed at answering every recording need with widely variable frequency response, has been introduced by Electro-Voice, Inc., Buchanan, Michigan. This is the 667, a cardioid dynamic mike, with a transistor preamplifier.

The E-V 667 is the result, we suspect, of repeated listening on the part of the E-V Sales Department, to requests for a higher level output, a lower level output, more highs, more lows, less lows, and other assorted recording studio requests. Based on the widely used and popular 666, the 667 represents their answer to the need for a widely flexible high fidelity recording microphone of the finest quality. It has variable frequency response and a noise level of -123dbm referred to input.

We heard about the E-V 667 well before it was public knowledge, and wondered just how it was possible to do all the things we had heard it would do. Of course, the answer was obvious, use a transistor amplifier, have it equipped with variable output levels, and tone controls. As far as we can ascertain the E-V 667 is merely a 666, with a transistor amplifier, BUT, what this little chrome plated box can do is fabulous.

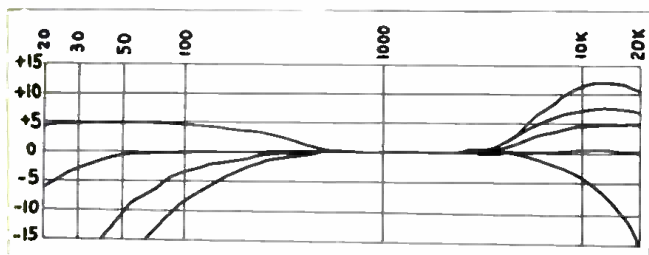
We had an E-V 667 in our possession for a month, and ran it through our usual tests. This was not easy however. Where in the past we could rate a microphone for its high frequency response, and its low end, we found we could

make these most anything we wanted merely by turning a couple of switches. Where in the past we could measure a microphone's output, with the 667, we could turn a switch and get levels which would overload any microphone input we wanted to. Needless to say, we took it out in the field, and find ourselves a strong advocate of this type of versatility. We could get anything response-wise we wanted, from flat to the exaggerated high end common to a certain capacitor mike, now in high favor. From its very plush carrying case to its rich gold plated screening we found it to be a very terrific microphone, and certainly a wonderful device for the recordist who can afford its price tag, although it does cost less than any other unit we can think of with its performance, and truly amazing versatility. The price is \$600 list, user net less than \$375.

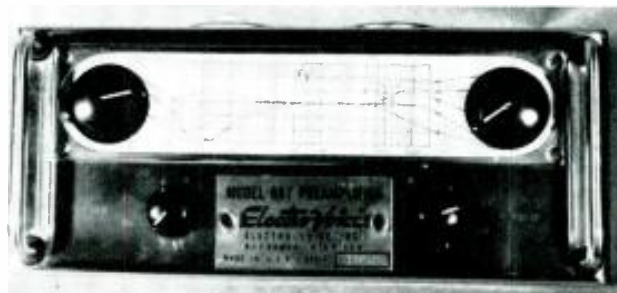
It has one performance limitation not common to other mikes, in that it cannot be operated at temperatures in excess of 90 degrees without impairing its wide dynamic range, although the microphone will not be damaged. But shucks, that's too hot to record in any way! We have shown curves of the microphone, on the chart which are from our own sources, but closely match the manufacturer's claim.

In conclusion, we feel this is the answer to all those recordists who want versatility, quality performance, and can afford what looks like the best yet, for complete versatility.

For detailed mike specifications, write to Electro-Voice.

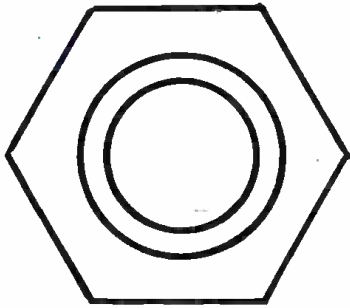


Frequency response of the EV-667 measured as shown in the four possible bass range settings, and the five treble positions. Note the extreme versatility of response.



Top view of the transistor preamplifier. There are 40 possible range selections in the new model.

EXTERNAL



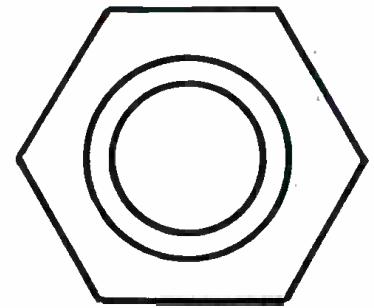
SPKR.

USE THESE JACKS

by Bart Pierson

... you can extend the capabilities of your recorder through the use of auxiliary equipment.

EXTERNAL



AMP.

THERE are two jacks on the average tape recorder which are seldom used—and that's a pity. One is the external speaker jack, the other is the external amplifier jack.

These are to be found in various places, depending upon the make of recorder. Most of them are mounted on the side or back of the machines.

Because most recorders are of the portable type the manufacturer cannot put into the case a large speaker which would do full justice to the capabilities of the recorder amplifier. There is no space for baffling or for acoustic treatment that would provide the best possible response.

The recorder manufacturer does the best he can within the space and price limitations but the machine itself is, in most cases, capable of far greater achievement in sound reproduction.

In almost every instance, the addition of an external speaker can work wonders. This is because the average tape recorder has in it good heads and good amplifiers. The only shortcoming is in the speaker system for the reasons given above.

In adding an external speaker there are three factors to consider: the impedance of the speaker, the amount of room you have available and the state of your pocketbook.

Speakers range from a few dollars for an ordinary single cone PM (Permanent Magnet) speaker to more than a thousand dollars for a big cabinet job with a superb furni-

ture finish and a multiplicity of speakers inside.

In regards to the space, that will be determined by your own home surroundings. There are a number of "low boy" speakers which are large enough to provide adequate space to put the recorder on top of the cabinet and bring it to convenient working height.

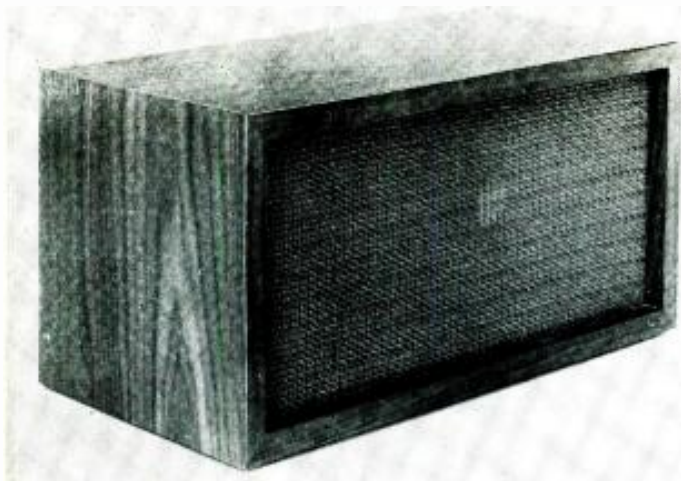
Some of these units are already put together and wired at the factory, are available in a number of furniture finishes and they will vary in cost, depending upon the number and type of speakers used in the cabinets.

Other units may be bought in pre-cut kit form and assembled and finished at home. If you like woodworking and finishing such a kit can give you a few pleasant evenings of do-it-yourself fun. A number of firms put out such kits and they are sold by dealers or direct from the manufacturer by mail.

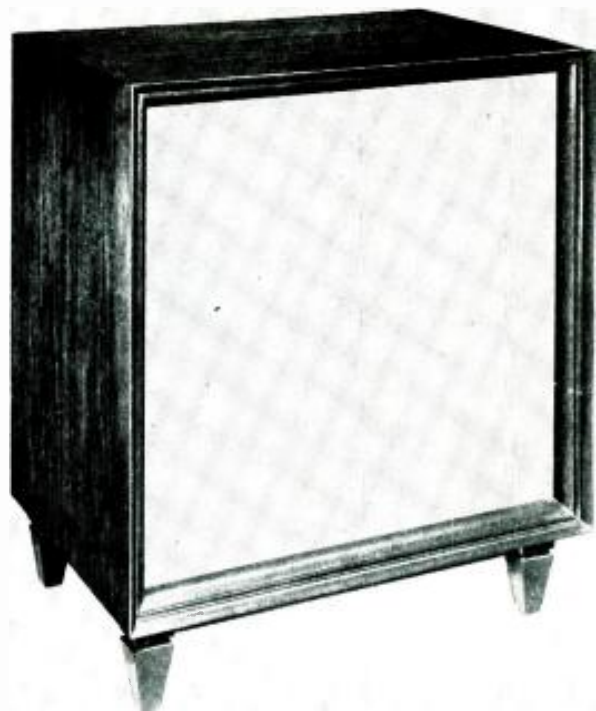
The third fact, impedance is almost automatically taken care of. The impedance of the output of your recorder is usually somewhere between 4 and 16 ohms. The only important point to remember is that the impedance figure for the speaker should match that of the recorder. If it does not there will be some distortion of the tone and the results will not be as good as they might. Any differences can easily be taken care of through the use of a transformer, one side of which has the same impedance as the speaker and the remaining side the same as the output jack on the recorder.



External amplifiers such as these are suitable for use with a tape recorder. Left: Fisher 30 watt, right: Sherwood with controls. There is a wide variety of amplifiers available which will work satisfactorily with tape recorders to give power to their output to fill large rooms or halls.



Speakers that can be used with tape recorders come in all shapes, sizes and prices. Shown above is a Stephens Tru-Sonic unit and to the right one of the many Electro-Voice speakers. Below is shown a kit speaker put out by Heathkit which can be put together at home from pre-cut parts. Even the smallest of units will be larger than the space provided in your recorder cabinet and can greatly enhance the sound put out by your machine. Speaker cabinets of the low-boy type can be used as stands on which to place the recorder and have it at a convenient height. Some recorder manufacturers make matching speakers for their units which are very attractive and also match electronically.



These figures are generally furnished on the speaker or in its accompanying direction sheet, in your recorder instruction book or on the schematic diagram for the recorder.

Because the current you will be conveying from your recorder to the speaker will be relatively large it will not be affected by hum, and ordinary wire, such as is used for electrical extension cords, may be used to make the connection.

Some speaker cabinets employ one large speaker, others may have more than one. The latter have a large speaker to carry the low notes and smaller speakers for the mid-range and high notes. These are interconnected by a "crossover network" a device which separates the high and low frequencies and feeds them to the appropriate speakers. A small speaker does best on the high notes, a large one, able to move a large quantity of air, produces the best results on the low notes.

The other jack on the recorder is the external amplifier jack. This, in contrast to the speaker jack is usually a high impedance output with a weak current. At the most it may come from the recorder pre-amplifier, sometimes from the head itself. Because the currents are weak, shielded wire must be used for making connections to an external amplifier to avoid loss and hum.

Sometimes this jack is not affected by the tone controls on the recorder and any tone control must be accomplished on the external amplifier.

As mentioned earlier, the amplifiers in tape recorders are usually very good—much better than the speaker in the recorder. So why consider an external amplifier at all?

An external amplifier is most useful if you want to cover a large area with sound. Using your recorder as the sound source, with an external amplifier and appropriate speakers there is actually no limit to the volume of the sound you can produce—you could fill Soldier's Field if need be.

Also, should you be called upon to produce music for a dance of fair size, or to use the recorder as part of a PA

system, the external amplifier will enable you to get enough volume to fill the hall.

When making connections between recorder and amplifier care should be taken to avoid hum. The use of shielded cable is advised, as mentioned above, and there should be a good ground connection between the two chassis through the shield. It is also helpful to plug the two units into the same power source and, if necessary reverse the plugs until minimum hum is secured.

If your recorder doesn't have an external amplifier jack you can still feed an amplifier by making the connection to the external speaker jack. In this case the phono/radio input should be used on the amplifier.





Photos by Larry Paulton

When using a doll for a dummy, it's best to memorize the script. While performing, the recorder is hidden nearby, and proper timing is most important.

YOU, *Too*, Can Be A Ventriloquist

by Andrew Johnson

. . . go ahead—be the life of the next party you give or attend.

HOW often have you watched Charlie McCarthy and his pals perform on your television screen and wished that you possessed the talents of an Edgar Bergen?

Your tape recorder can make that wish come true!

Without any training you, too, can be a "ventriloquist." And you do not need to invest in a costly "dummy."

You can even eat, drink or smoke while your dummy wisecracks, or you can sing a duet with your "other voice." We'd like to see Charlie try that with Bergen!

Almost everyone has at least two voices—his (or her) natural, objective voice, and an affected falsetto tone. By projecting this falsetto voice through your tape recorder and using your natural voice when you "make like a ventriloquist," you can put on an act that will both amuse and amaze your friends.

The "gimmick" is simple. Before you begin to record write out *exactly* what both voices will say. Give your dummy a name (I call mine "Tweeter.") and make him (or her) a distinctive character.

After you have prepared your script, take your recorder

where you can be alone to tape your act.

Turn on the machine, with the selector switch to "record," and, first, *speak* with your *falsetto*, or "dummy," voice INTO THE MICROPHONE. Next, *whisper* YOUR *line quietly* TO YOURSELF. (This whisper, which does not record, will leave time on the tape for you to speak the same line aloud when you do your act.)

Continue the procedure until the dummy says the "punch," or funny, line. At this point leave from two to five seconds' time (depending upon the reaction you think you'll get) on the tape for a "laugh." Have the dummy take up the dialogue again, using the same routine, and continue on to the end of the script.

Always give your dummy the punch lines, and keep your "straight" lines as short as possible. If one of your lines is too long the chance of misjudging the allotted tape time is increased and you might be interrupted by the recorded voice of your dummy.

Here is a partial sample script. (You can do better, of course.):

TWEETER (your "dummy" voice *on tape*): Hey, Andy, I saw some flying saucers today.

YOU (in your natural voice, but *whisper when taping*): Now, Tweeter, you know there are no such things as flying saucers.

TWEETER (*on tape*): There aren't? Did you ever try pinching a waitress with an armful of dishes?

(Count two to five seconds of silence at this point when recording, for the laugh you *hope* you'll get, then resume.

When playing the tape back, you will hear the dummy say his line, then you will speak your line aloud in your natural voice, exactly as written on the script, utilizing the space you left blank when you recorded. You may find it necessary to erase and record a second, or even a third, time before you are thoroughly satisfied with your timing.

If you are gifted with more than two "voices," you may write in as many "dummy" parts as you like. Or you may prefer to have a friend tape the dummy's voice for you.

You may use the tape recorder itself for your "dummy," pretending there's a little man inside it. If you sit behind the recorder you can hide your script in back of it.

You may prefer to use a doll for your dummy, however, and in that case it's best to memorize your script, keeping the recorder near but unobtrusive. Most any toy doll will do for a dummy. Or try making one out of an old sock stuffed with rags. Dummies with movable mouths can be bought for four dollars and up, but you'll be pretty good if you can anticipate the exact moment to move the mouth. I have been using an old Pinocchio doll with a busted nose. Remember, the "prop" is secondary, as the mystifying "gimmick" of the act lies in the pre-recorded tape.

The machine may cut in at times while your audience is still laughing at the previous joke. At other times, when a gag "lays an egg," you may be called upon to "ad lib," or

make idle talk, to fill up the time you left on the tape for the laugh you *didn't* get. But as a rule, if you timed the recording carefully, it works out surprisingly well. Of course if the situation gets out of hand you can always stop the machine temporarily.

If you know ahead of time who will be listening, you can use the persons in the audience as the butt of the dummy's jokes, inserting their names into the script.

A tape recorder with a remote control (if you're fortunate enough to own one) will not require any timing when recording. Simply put all the dummy's lines consecutively on the tape and then use the remote switch to feed the lines as you need them.

A real novelty, but requiring a more complicated procedure, is to make a tape of your friends' voices. Then, when you have accumulated enough material, borrow another tape recorder and re-record bits of your friends' voices as "dummies." They'll be flabbergasted when they hear themselves, and you'll either *be* a hit, or *get* hit—depending on what you made them "say."

For more realism try stuffing a miniature speaker inside your dummy's chest. The wires running from the recorder output to this extension speaker should be small and inconspicuous.

Tape recorder "ventriloquism" is sure-fire entertainment for the "little monsters." I made one recording for my grandchildren where "Tweeter" recites familiar nursery rhymes but keeps "forgetting" his lines. The children, needing no prompting from me and glad of a chance to "get into the act," sympathetically help the poor little fellow over the "rough" spots. "Tweeter" has become a real friend to them.

You, too, can be the life of the party when you "make like a ventriloquist" with your tape recorder.

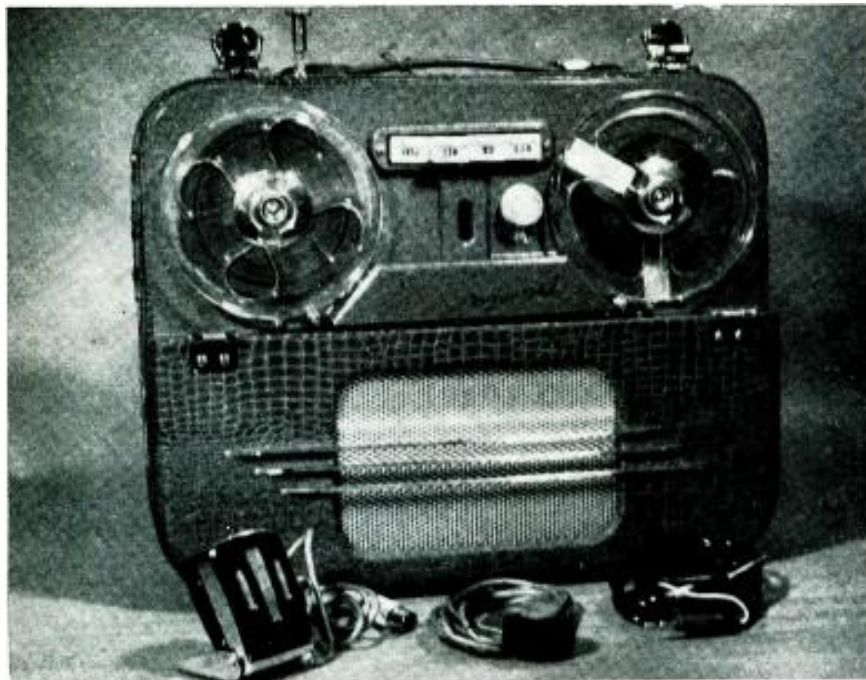


Author with script. Speak your falsetto voice into the mike, but whisper your natural voice softly to prevent it from recording. The whisped line will leave on the tape for you to speak the same line while performing.



Eating, drinking or smoking while your "dummy" wisecracks presents no problem at all with a tape recorder. For this part of the tape, however, you might disguise your voice to sound more like you are talking with your mouth muffled.

NEW PRODUCT REPORT



BUTOBA TRANSISTORIZED PORTABLE

... completely self contained, spring motor driven, dual speed 3 $\frac{3}{4}$ and 1 $\frac{7}{8}$ ips.

THE Butoba Transistorized Recorder is, with the exception of one tube, a completely transistorized unit. Its power for the electronics is obtained from dry cells, a rechargeable wet cell or from any car battery of 6 volts. The tape drive is accomplished by means of a spring motor.

As transistors require no warm-up time the recorder is ready to record or play instantly.

The spring motor is hand wound and will power the recorder at the 1 $\frac{7}{8}$ inch per second speed for 40 minutes or at the 3 $\frac{3}{4}$ speed for 22 minutes. This permits a long span of recording without rewinding the spring. The unit takes five inch reels of tape. A dial, which is reset when the motor is wound indicates the elapsed time and when it reaches the three minute mark the numerals are in red as a reminder to rewind before the motor runs down.

The dry cells should be of the leak-proof type and are estimated to have a life of 50 hours of recording or playback. In addition a rechargeable cadmium storage battery is available as an accessory and a battery charger is also

obtainable which can be built-in the recorder.

Recording is dual track and the unit has an erase head which means that it is not necessary to use virgin tape on it.

Controls are pushbutton operated and the response is instantaneous. One of the most unusual features is the rewind. This is operated by pushing in a lever, shown in the photos, with a pumping motion. A surprising rewind speed can be reached with this simple device, in some cases higher than on a powered recorder.

The volume and tone controls are located in a well on the side of the case and can be operated with the case closed. The microphone is gold plated and also available is a telephone recording attachment.

Our tests indicated that it would reach the manufacturer's specifications of 50 to 9,000 cycles plus or minus 3 db however, the wow and flutter was greater than a standard recorder due to the spring wound motor. Even at that, it was not objectionable and would make no difference at all on speech.

S T A F O K S T E D

Product: Butoba Transistorized Portable TS-6.

*Distributor: Audio Master
17 E. 45th St., New York, N. Y.*

Price: \$345.00

The recorder is not a hi-fi musical instrument and no claims are made in that direction. It is adequate for speech and for music on a boat, plane or other traveling vehicle, or at the beach.

This is the first recorder which we have tested which would make a real "vacation recorder" as it is small, being only 12 x 15 x 5 inches in size, it is attractively finished and the total weight including the batteries is only about 20 pounds.

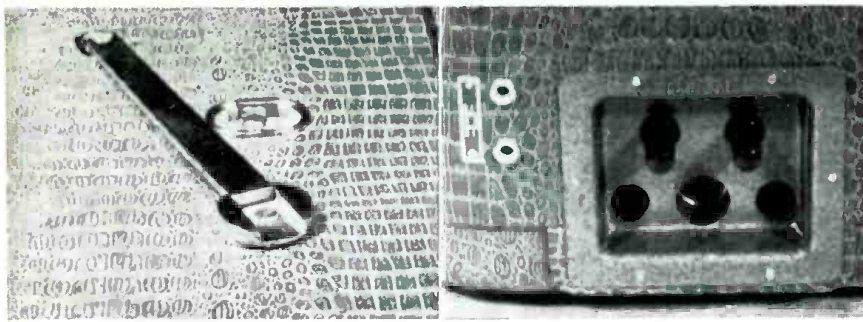
The volume from the loudspeaker is adequate for an ordinary size room. The speaker is built-in and sounds recorded can be played back immediately through it.

The recording level is indicated by a "magic line" type of tube which is quite bright and easily seen in daylight. Recordings made with the unit on location were good.

We believe this recorder should have good application in radio broadcasting for on-the-spot reporting of news events and features. While the controls cannot be operated without the cover being removed, they could be pre-set and the unit modified so it could be



The recorder with the case closed looks like a piece of luggage. The speaker grille is protected by the metal bars across it.



The rewind and speed change levers are on the back of the case. The lever latches in as shown when not in use. Right: the volume and tone controls are operated by the two knobs in the well on the side of the case. Other connections are for connecting to radio etc. Unit may also be powered by connecting to a 6 volt battery in car or other vehicle.

controlled from the outside for secret interviews or recordings. In appearance it looks much like a small, good-looking suitcase.

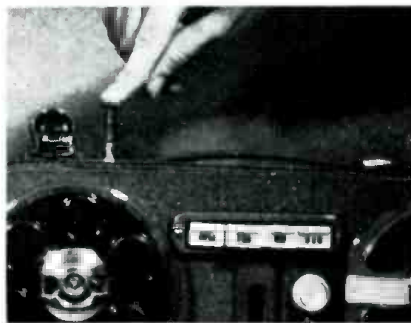
On the unit which we had for testing the crank handle had rather sharp edges and we believe that if the factory would round these off before plating, the danger of an accidental scratch would be avoided.

The signal-to-noise ratio of the recorder was very good on test and the erase frequency is effective and does a good job.

When not in use the batteries should be disconnected by pushing down the playback key only and the spring motor should be allowed to run down.

In addition to playback through its built-in oval speaker, the recorder may be played through a radio by using the connecting cord.

When using the rewind, the stop and playback keys should be depressed and the rewind lever unlocked from its carrying position by rotating it until it pops out. Short sharp pushes on the lever will build up good speed. When finished rewinding the lever is pushed into the case and locked into position.



Rewind is accomplished by pushing in the plunger shown. Rewind speed is surprisingly fast. Lever is locked in case by pushing in and rotating it when finished.



Controls are push button operated. Above the control buttons can be seen the "magic line" recording level indicator which is bright enough for daylight use. Knob shown resets timing dial when motor is rewind.



Left: a view in the back of the case showing the spring wound motor which will run the recorder for 22 minutes at the $3\frac{3}{4}$ ips speed or 40 minutes at the $1\frac{1}{8}$ ips speed. Right: the oval speaker is covered by cloth to protect it. Dry cell batteries are mounted in clips at top right of photo. A rechargeable wet cell may also be used instead of the dry cells if desired. Battery life is estimated at 50 hours by manufacturer.



ROBINS' AUDIO ACCESSORIES

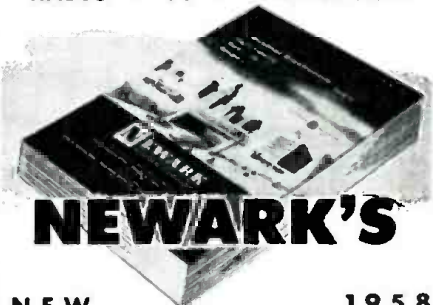


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STEREO SECTION

NEW TAPES

By Georgie Sigsbee

CLASSICAL ORCHESTRAL

GRIEG

Peer Gynt Suite No. 1

The Florence May Festival Orchestra
Vittorio Gui, Conductor

LIVINGSTONETTE 2002 C. 5" reel
Stereo . \$6.95 . 15 mins.

Each of the four movements of this Suite (Morning, Ase's Death, Anitra's Dance and In the Hall of the Mountain King) are performed with sensitivity by Gui and the orchestra. He gives a hauntingly sad por-

trayal of "Ase's Death" and a vibrant, dramatic interpretation to the final movement.

This tape is the premiere classical work in the "Livingstonette" series. It is beautifully recorded and all of the compelling instrumentation is captured in stereo for your listening pleasure.

See August 1956 for review on a monaural recording (Omega 8001) of this composition.

OPERA

MOZART

The Abduction from the Seraglio
(An Opera in Three Acts (Concert Version)

The Cologne Opera Soloists and Chorus
The Guerzenich Orchestra of Cologne
Otto Ackerman, Conductor

CONCERT HALL SOCIETY RX-52

Stereo... \$23.90... 89 mins.

Through fine stereophonic recordings one can now capture the aural perspective and sense of stage action which adds authenticity to drama and/or opera and you can feel as though you were seated almost at the footlights. This is such a recording.

I think Mozart would have liked this production, for it conveys some of his best features; a vocal intimacy (achieved here by generally good mike placement and direct projection by each character); zest and pace of good theater (tribute to the conductor and routined cast); participants trained in best European traditions (an advantage of tapes recorded abroad), and rousing finales (which Mozart uniquely constructed to climax each act).

For the music lover and opera goer, this two-reel production is an ideal, concertized condensation of musical highlights. The plot is typical "Eastern horse-opera" of 18th century Vienna, but as engaging as most TV plots today. From the familiar, lively overture to the paean of "all's-well" praise at the conclusion, the work will come singing throughout your stereo-equipped

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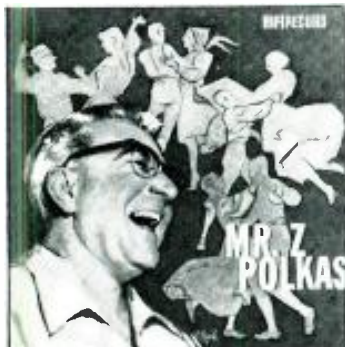
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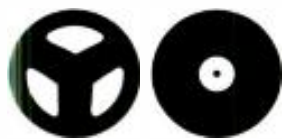
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home. The young Dutch tenor lead, Van Kesteren, sings with a contagious virility that is matched more by the vivacious second soprano role of "Blonde" than by the young American prima donna, Marilyn Tyler. The dialogue is spoken, briefly, in German.

I feel that the producers could provide more than a three paragraph synopsis and I venture to make a few suggestions. In the annotations they could supply a list of the principal arias and the English translations for the dialogues or perhaps libretto and study aids might well be included with a recording of this cost. The excellent reproduction and the score itself justify such a bonus for the listener.

ORCHESTRAL
ENCHANTING STRAUSS
New Pizzicato Polka
Aquarellen Waltz
Fire Festival Polka

Vienna State Opera Orchestra
Josef Drexler, Conductor

LIVINGSTONETTE 2003 C
Stereo . . . \$6.95 . . . 14½ mins.

The first and last selections are available on two other stereo albums conducted by Drexler (Livingston 722 F and 721 F). These compositions by Johann and Joseph Strauss are performed with facility and charm.

The recording is flawless. I do have one complaint . . . I do not care for the new packaging on the releases. The plastic top tends to split or come off . . . and I guess I am inherently lazy as I do not like to have to work at detaching the tassel fixture and dig out the tape. A box is much the easiest way to get the tapes out—or in.

OFFENBACH MELODIES
La Belle Hélène: Overture
La Pèrichole: Selection

Boston Pops Orchestra
Arthur Fiedler, Conductor

RCA BCS-50
Stereo . . . \$8.95 . . . 18½ mins.

More of Offenbach's delightful music, in this instance performed with gaiety and élan by Fiedler and the Pops.

A thoroughly enchanting recording in all respects. The splendid string section and rich horn performances are beautifully displayed in stereo reproduction.

OFFENBACH
Gaité Parisienne

Minneapolis Symphony Orchestra
Antal Dorati, Conductor

MERCURY MCS5-15
Stereo . . . \$11.95 . . . 27 mins.

Dorati conducts the *Gaité* arrangement made by Manuel Rosenthal for the Ballet Russe De Monte Carlo, and a very fine job he does of it too. Dorati has always been one of my favorite conductors of ballet.

His knowledge of the art is reflected in his interpretations.

There is one thing that strikes me about this recording . . . it is not a bright, reverberant one. If it were I think it would lend an airy, buoyancy to the music. Recorded on the stage of the Northrop Memorial Auditorium on the University of Minnesota campus, the resulting sound is warm and of concert hall realism but it seems to me that the acoustics of the hall are such that the sounds are more quickly absorbed and thus the light, ethereal effect is not there. Nonetheless, this is a fine stereo recording performed with spirit.

RIMSKY-KORSAKOFF
Scheherazade

Vienna State Opera Orchestra
Conducted by Hermann Scherchen

SONOTAPE SWB 9006
Stereo . . . \$17.95 . . . 46 mins.

The cover picture, alone, will make quite an impression on the musical customer . . . male division. If such whistle-bait can lure some into listening to music, maybe this is good. (!)

Scherchen seems to dig deeply into the score. He carefully etches the vivid tones of this oriental musical fairy tale with deep, sonorous effects. Tasteful direction, combined with sensitive skill, make this a most competent interpretation. The interplay of rhythms and kaleidoscopic orchestration is such that one becomes fascinated by the sound of the orchestra via stereo.

This is a flawless recording.

TCHAIKOVSKY
Nutcracker Suite
Hamburg Philharmonia Orchestra
Henrich Alster, Conductor

BEL CANTO #24
Stereo . . . \$9.95 . . . 22 mins.

The novelty of stereo recording is insufficient to lift this performance above the average, although a routine interpretation comes through with adequate sound. The absence of program notes confirms my impression that this is intended as just another piece of agreeable background music.

TCHAIKOVSKY
Waltz from "Eugene Onegin"

Bamberg Symphony
Heinrich Hollresier, Conductor

PHONOTAPES Cameo SC 403
Stereo . . . \$4.98 . . . 8 mins.

The Polonaise, or as it is more commonly known, "the waltz," which Tchaikovsky utilized in his opera "Eugene Onegin" is a well-known, pleasant bagatelle. Hollresier and the Bamberg group treat it with lyricism in this brief, but well-recorded, tape.

POPULAR
TIME FOR TINA, Vol. II

It's Been A Long, Long Time
 Hold Me
 I Wanna Be Loved
 Let's Do It
 How Long Has This Been Going On
 Goodnight, My Love

Tina Louise, Vocalist
 Buddy Weed and His Orchestra

CONCERT HALL EX-47
 Stereo . . . \$8.95 . . . 22 mins.

Tina Louise fairly oozes intimacy. Her delivery is quietly rendered in a slow, sultry fashion. I was somehow reminded of the, if you will pardon the word, sexy weather forecasters . . . female division. She may well have appeal (and it is beamed in this direction) to the male population.

You'll hear Coleman Hawkins featured on tenor sax, Tyree Glenn on trombone and Hilton Jefferson on alto sax. Buddy Weed and the aggregation come through with a good job.

The stereo recording is capably accomplished.

IT'S DANCE TIME

Around the World in Eighty Days
 Sunrise Serenade
 Rain on the Roof
 Moonlight Cocktail
 Linger Awhile
 Amapola
 By the Light of the Silvery Moon
 Cachita

Dick Contino and His Orchestra

MERCURY MS2-12
 Stereo . . . \$8.95 . . . 21 mins.

If your memory goes back to the days of Horace Heidt's radio-talent programs, you will recall Contino and the splash he made playing his accordion. Here he backs his instrument with an orchestra and proceeds to cut loose and demonstrate his still quite able talent on the "squeeze box."

From the opening number, which includes wordless vocal colorings, you will find the beat danceable. "Linger Awhile" and "By the Light of the Silvery Moon" culled up memories of Shep Fields and his ripplin' rhythms. "Amapola" and "Cachita" (catch the bass on the accordion . . . someone made the remark it sounded as though the instrument had indigestion!) . . . provide good spotlights for Contino.

The sound is very good . . . content-wise it is pleasant for background or dancing.

PAL JOEY

What Is A Man
 I Could Write a Book
 Zip
 Bewitched
 Take Him
 That Terrific Rainbow

Vivian Blaine

MERCURY MS2-15
 Stereo . . . \$8.95 . . . 20 mins.

Vivian Blaine, star of stage and screen, sings these selections from "Pal Joey" in a

pleasant manner. She is given good backing by a nameless studio orchestra and the entire musical setup is accorded excellent engineering. If my back were against the wall I would have to admit that Miss Blaine sings well but that she does not particularly impress me on this recording. However, her vocalizing on "Take Him" and "That Terrific Rainbow" possesses more of the "right in there" feeling for the lyrics than she demonstrates on the preceding four.

On the Sunnyside of the Street
 Swanee River
 Tangerine
 Song of India
 Marie
 So Rare
 Swing Low Sweet Chariot
 Boogie Woogie
 Green Eyes
 Deep River
 I'm Gettin' Sentimental Over You

OMEGATAPE ST-7027
 Stereo . . . \$11.95 . . . 32 1/2 mins.

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- ST-34 • AFRICAN SAFARI
- ST-35 • HAWAIIAN LUAU

nal Tommy Dorsey orchestra, the tunes are those closely associated with the two brothers, the performance is Dorsey stereotyped in stereo, the engineering is very good.

There is a mixture of slow and fast, of instrumental and instrumental-vocals. There is some fine solo work by Ray Linn on trumpet, Tommy Pederson on trombone and Milt Raskin at the keyboard. The Eberle-O'Connell shoes are filled by Al Cava who has an agreeable voice and Adele Francis who, I am afraid, is not quite up to the task. In "Deep River" and "Song of India" the men get their teeth in it and slam forth with spirit. As a whole the recording is certainly a memory bit which is, after all, its purpose.

"Maria Elena" is listed on the notes but don't listen for it . . . it isn't there.

JAZZ

THE ART OF PEPPER

- The Breeze and I
- Without a Song
- Fascinating Rhythm
- Long Ago and Far Away
- I Can't Believe That You're In Love With Me

OMEGATAPE ST-2030

Stereo \$11.95 . . . 26 mins.

With Art as the meat with pepper, and Carl as the vegetables with salt, here is served up a musical stew with plenty of gravy furnished by Ben Tucker on bass and Chuck Flores on drums. Art Pepper is a fine alto artist with a deft, strong touch. On this recording his partner in jazz is Carl Perkins who has a fluid, easy style at the piano and improvises with considerable flexibility.

"Without A Song" and "Fascinating Rhythm" showcase both the instrumental and creative ability of this team. In "I Can't Believe . . ." the bass work by Tucker is reminiscent of Buddy Hackett and the by-play between Pepper and Tucker is very effective.

A good tape which is well recorded.

GOLD COAST JAZZ, Vol. 2

- Fu-Dunk
- Evelina
- I Remember You
- Lons-On-Ya
- How Deep is the Ocean
- Star Eyes
- Everything Happens to Me
- Pu-Dah

The Lon Norman Sextet

CRITERIATAPE

Stereo . \$11.95

This is a good combo which works cohesively to produce some fine jazz sounds. Solo breaks provide spotlights for individual improvisations and the jazz fan should be pleased with the whole production.

Lon Norman, trombonist, not only leads the group but does the colorful arrangements. Gus Moss, tenor; Bill Ladley, drums; Al Simi, bass; John Williams, piano and Vinnie Tanno, trumpet; round out the sextet. The recording showcases Tanno on trumpet. Tanno, who has played with Kenton and Herman, is a talented arrist and puts in some enthusiastic work.

if not available at your dealer, write direct.

Bel Canto

MAGNETIC RECORDED TAPES

DEPT. TC 2919 S. LA CIENEGA BLVD., CULVER CITY, CALIF. TE 0-2191

The beat is predominately up with "How Deep is the Ocean," "Everything Happens to Me," and "Pu-Dah" providing a down-empo to things.

A compatible, exuberant group—recorded with authenticity.

SHOW MUSIC

WEST SIDE STORY

COLUMBIA TOB-13
Stereo \$23.95 57 mins.

This is an original cast recording of the Broadway musical based on Jerome Robbins' conception of a modern Romeo-Juliet story. The book by Arthur Laurents deals with an "American" street gang who are opposing a group of Puerto Ricans. The setting is New York. Tony (Larry Kerr) who is co-founder of the Jets ("American" gang) is in love with Maria (Carol Lawrence) whose brother is leader of the Sharks (Puerto Rican gang) and so on into the story. The lyrics by Stephen Sondheim are interesting and the music by Leonard Bernstein is dynamic and stimulating. The colorful effects of the musical score and the stereo reproduction of the singers is fascinating. As for the vocal skill of the cast I cannot hear anything to rave about but I was impressed with Carol Lawrence above all the others. She has a clear delivery and her tonal quality is good.

Columbia supplies excellent notes with the album. Those who have seen the production tell me the choreography of Jerome Robbins is a delight to behold . . . They also derive more enjoyment from hearing this album than do those of us who have not had the pleasure of seeing the show.

The sound is skillfully managed.

MISCELLANEOUS

MARCH

BLACK WATCH

Pipe and Drum Tunes
Black Watch Royal Highland Regiment

PHONOTAPES Cameo Series
Stereo \$4.98 . . . 9 mins.

Here is a stereo edition of the monaural version (PMC 1009 reviewed May 1957) of the Black Watch Regiment. In their lower priced Cameo Series (monaural . . . \$2.98) *Phonotapes* is now releasing stereo tapes, priced at \$4.98.

Although what I am going to say would not usually apply to most musical recordings I do think the monaural version is closer, more exciting than the stereo release. I must hark back to what I stated in the first review . . . the monaural recording has "good audio perspective . . . you'll hear the regiment marching to front and rear . . ." Now, for the even more realistic, spread effect . . . the back and forth from one side of room to the other . . . then the . . . stereo version is IT. But I'll stick my neck out and say for the added four minutes and overall exciting impact, I'll take the monaural version! The percussion is more of the chest-thumping kind and even the calls seem more discernible.

MARCH

RUFFLES AND FLOURISHES

Music for Field Trumpets and Drums

Eastman Symphonic Wind Ensemble
Frederick Fennell, Conductor

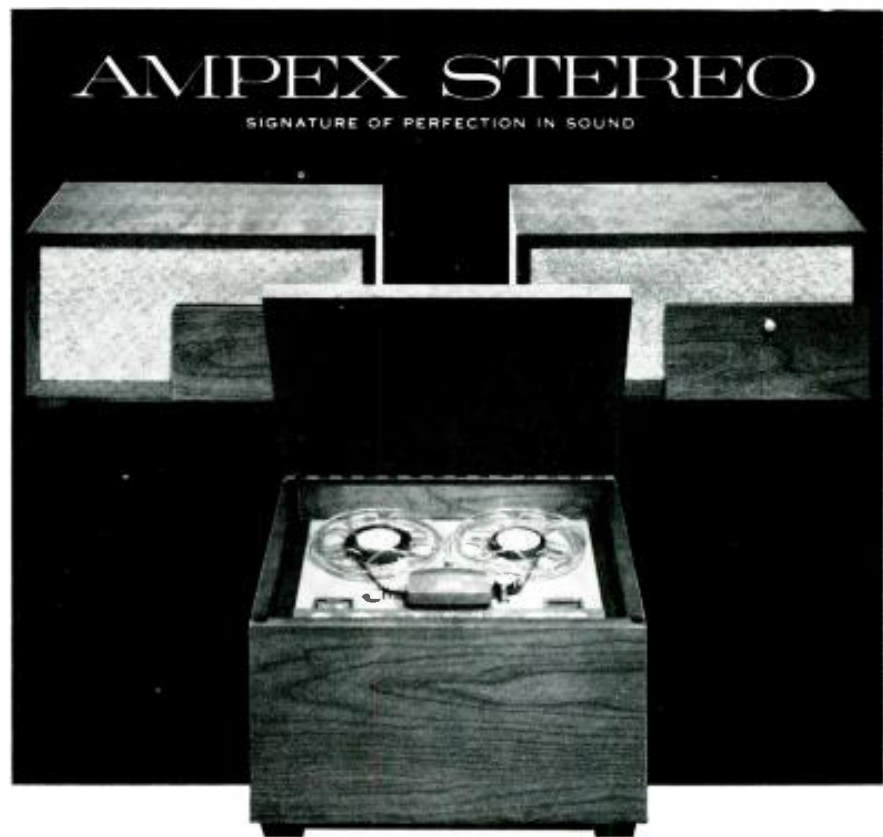
MERCURY MS5-13
Stereo \$8.95 . . . 21 mins.

This is different from the usual march music fare. Here Fennell conducts members of the Eastman wind ensemble in a wide variety of music and calls based upon the field music of the U. S. Armed Forces. You will hear music for rendering honors, traditional marches and inspection pieces (both serious; i. e., "The American Flag," "The President's March," and light; i. e., "Soapsuds Row," "You're in the Army Now"); plus two drum solos and twelve bugle calls. The latter are bound to awaken

mixed memories but certainly pleasant reactions for ex-GI's who can listen and not have to act. I have found after each hearing that this remains a very interesting and enjoyable tape. The notes provided by *Mercury* are both informative and guiding. The drum solos, are excellent fodder for the hi-fi man. Moore's piece which defines the twenty-six rudiments of drumming, "Connecticut Half-Time" is the more exciting of the two.

Recorded in the Eastman Theatre in Rochester, this is a clearly defined stereo recording. The engineering was accomplished with good purpose . . . the drums predominately on one side, the trumpets on the other . . . yet no hole in the middle.

This is a tape I would consider not only a good hi-fi showpiece but, in essence, a good "collector's item" of authentic martial music.



Recorder-Stereophonic Reproducer

—Two-speed, precision-built tape transport, capable of playing over 4 hours from a single 7" reel of tape; sustained frequency response 30-16,000 cps (7½ ips), with dynamic range over 55 db; Flutter and wow under 0.25% rms at 7½ ips; Precision timing accuracy affords perfection of pitch held to tolerances of less than 1/3 of a half tone at highest frequencies.

Amplifier-Speakers — Electronically and acoustically matched for optimum reproduction of stereo and monaural sound. These units deliver more undistorted sound per watt than the great majority of 12" and 15" speakers available today. Environmental inverse feedback from speaker voice coil circuit to cathode of first amplifier stage affords improved damping, lower distortion. Tilt-out push-button control panel for selecting input (Tape, TV, Tuner, or Phono); bass, treble and volume controls.

Complete Specifications—Information on the units shown above, plus consoles, portables, and unmounted units, available in free new full-color brochure.

Here is a stereo system you'll be as proud to show as you will to operate. The Ampex A121-SC Modular home music system was designed to satisfy not only the needs of the audio perfectionist, but also the increasing desire for a system that is as pleasing to the eyes as it is to the ears.

The A121-SC is an integrated system, and though any of the individual units can be incorporated smoothly into your own system, the combination of the three provides a level of performance not possible to achieve by any other means.



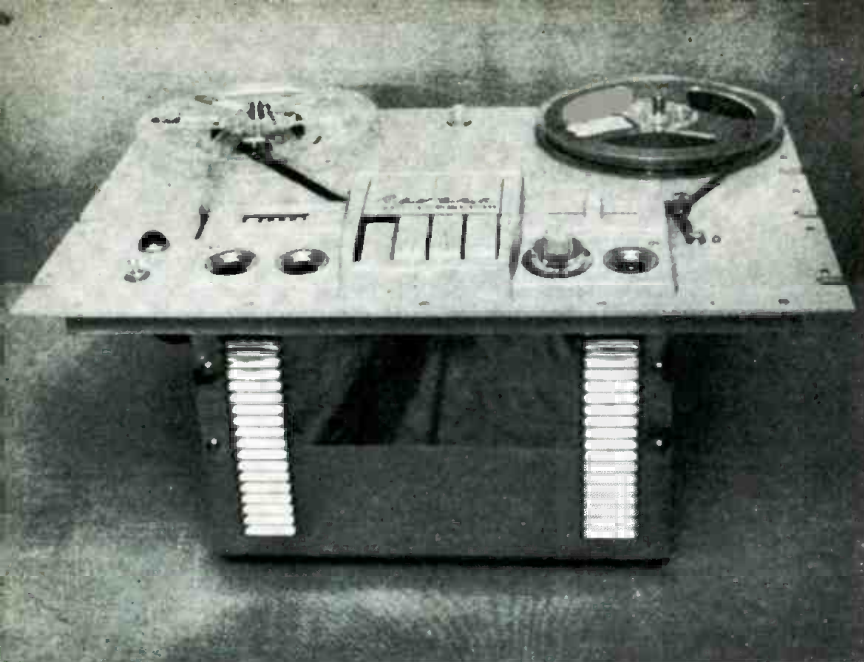
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ADDRESS _____

CITY _____

CONVERTING REVERE RECORDERS TO STEREO



OF all the various makes of recorders which we have so far converted to stereo playback the Revere Recorder has proved to be the easiest by far. This is due to two factors. 1: that the conversion kit which contains the stereo head assembly is already completely wired and needs only to be plugged into the appropriate place on the chassis and 2: the Revere contains no preamplifier for the second channel and hence no rewiring into the preamplifier is required.

No soldering is necessary nor are there any connections to be made. The only part of the job which requires any sort of machine tool is the drilling of a quarter inch hole in the back plate of the recorder. All other work can be performed with a screw driver and with the small Bristol wrench provided in the kit.

The kit is the SK-707 and is suitable for installation in the Revere single rotary models T-1100, T-1200, T-900, and TR-1000. It will also provide stereo playback in the Revere keyboard models T-700B, 8-700, TR-800D, TR800, T-10, TR-20, and T-70000 series and the T-11. The kit is attractively boxed and contains the stereo head assembly including an attached erase head, a fiber insulator, the small Bristol wrench for adjusting the head alignment, and the stereo connecting cable on the end of which is a small jack already connected and wired.

The recorder which we converted was the T-11 model shown in the photograph above. First step in the conversion was to remove the top deck which is accomplished by removing the control knobs. The volume and the tone control are removed simply by prying them up; the rewind lever knob comes off by removing the small set screw at the rear. The reel spindles are removed by taking the three small

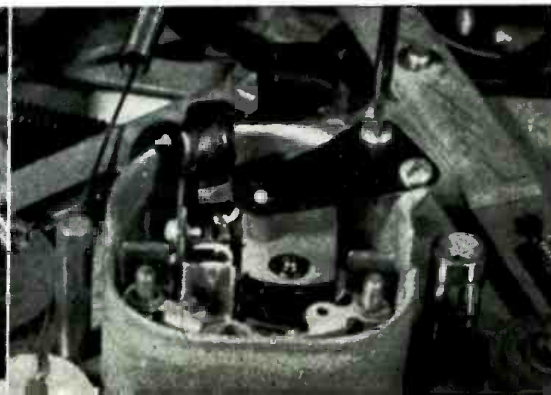
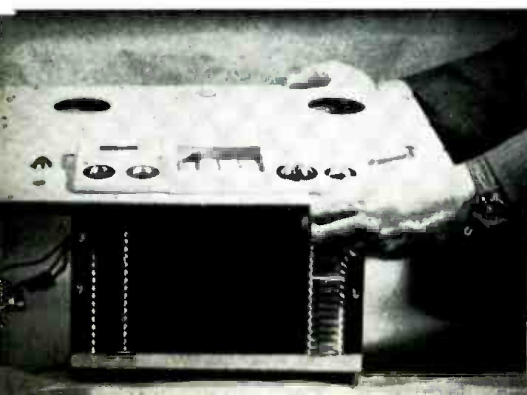
screws out of their sockets and there are five screws between the reel spindles which must be taken out. Immediately above the input jack and above the normal lamp are two screws which are loosened until the threads no longer engage but are not removed from the recorder. The record key lock is then released and the record lock is gently pried to the left and the top plate may be slipped off. In the head cup will be found the old head held down by a spring which goes across the top of the head. This spring is removed by taking out the two screws which hold it and the sound head cable plug is removed from the socket at the rear of the recorder. Be sure to note at this point the path of the black cable as it leads to the head cup, as it is necessary to retrace it with the new cable when the stereophonic head is installed.

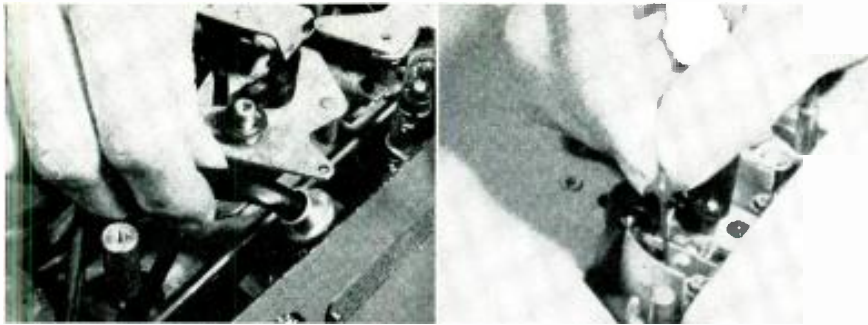
After unplugging the old cable, it is removed from the chassis and the old head lifted from the cup. The stereophonic head and its associated cable is then taken out of the kit and placed in the head cup in the same position as occupied by the former head.

There are two brass pivot studs at the bottom of the head cup which engage holes in the brass alignment plate to which the stereo head is attached. Be sure that these pivot studs do engage the holes. When this has been accomplished select the longer of the two fiber insulators furnished with the kit and put the small pegged end in the head spring. The head spring is then remounted so that it holds the head down tightly in place.

There will be two cables coming from the new head. One of which terminates in a four pronged plug and the other in the small jack which was mentioned previously. Route

The first step in the conversion of the Revere recorder to stereo playback is to remove the top plate. Center: The new head is placed in the head cup in the same position as the old head which has been removed. Be sure that the pivot studs engage the holes in the brass plate on the bottom of the head. Right: installation of the new head is complete by installing the head spring together with the fiber washer to hold the head assembly in place in the recorder.





Left: after the head is installed the cables are routed to the back of the recorder following same path as the old cable. The four prong plug is then plugged into the recorder. Right: the head is adjusted by means of the Bristol wrench for maximum high frequency response.

both cables along the path that had been taken by the cable which you removed. The plug is inserted in the socket from which the other plug had been removed and the small jack is mounted on the back panel by drilling a one quarter inch hole. If desired the jack need not be mounted on the rear panel as the connecting cable which is furnished in the kit can be led out the bottom of the tube replacement opening. In our case, we did mount the jack on the back of the recorder.

Before putting on the top cover plate, the head should be aligned for maximum high frequency response. This is done by placing a stacked stereophonic tape on the recorder and turning the tone control lever to maximum treble. Just to the left of the erase head will be found a very small adjusting screw into which the Bristol wrench will fit. Insert the Bristol wrench in this screw and start the tape playing. Turn the screw back and forth until you reach the point where the maximum high frequency response is heard. Once this point has been reached, the Bristol wrench is removed and no further adjustment is necessary.

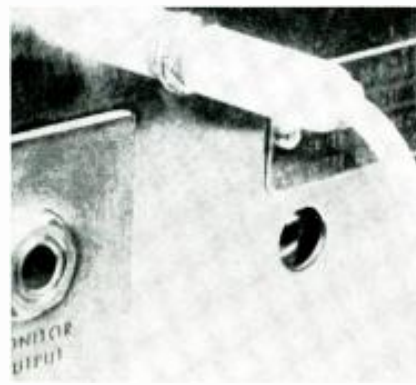
This, believe it or not, completes the installation of the stereo playback kit in the Revere recorder with, of course, the exception of putting back the top plate.

The only difficulty in putting the plate back on is to be sure to pry the record lock lever slightly with a screw driver so it will clear the key board opening and allow the plate to go back in place. For the sake of convenience we also removed the on-off switch and the pilot light to the left of the recorder so that we might completely detach the plate, for the purpose of making the photographs. If you do not detach these units the plate must then be kept near the recorder so as not to impose any strain on the connecting wires.

After the plate has been positioned the knobs are replaced in their original positions by pressing them back on and the reel spindles are attached with the three screws which were found in each. The other screws are replaced and tightened and the recorder is ready to play.

As mentioned previously, the output from the second channel comes directly from the head and there is no pre-amplifier contained in the recorder. Hence for outside connections to a stereo system it must be connected to a preamplifier and power amplifier in order to drive the speaker with sufficient power. For the other channel an external speaker is plugged into the monitor jack on the recorder.

We believe that the installation of a new head in the Revere recorder can be accomplished by anyone irrespective of the knowledge the person has of electronics or even of handling tools. As we have outlined above the installation procedure is extremely simple and the steps are so well described in the installation instructions, which come with the kit, that anyone who has never tackled the insides of a recorder has nothing to fear.



The small jack at the end of the lower head cable is installed in the back of the recorder slightly above and to the right of the input jack.

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RATES: Commercial ads, \$20 per word. Individual ads, non-commercial, \$0.5 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, Hi-Fi Tape Recording Magazine, Severna Park, Md.

1-INCH, 30-MINUTE TAPE and strong lightweight carton that cost only 4¢ to mail anywhere in the U. S. Carton and tape can be used many times, only \$1.00. George F. Bischof, 1503 E. Vickery Blvd., Fort Worth 4, Texas.

ANY 1200 TAPE DUPLICATED—one or both tracks, monaural or stereo, \$5.00 per reel postpaid if check accompanies order. Send master and instructions to W. A. Yoder Company, 711 North Cleveland Street, Richmond, Va.

SYNCHRONIZER HOOKUP: Make sound movies with your tape recorder, \$10.00. Anderson, 2842 South "B" Street, Stockton, Calif.

LEARN HYPNOTISM, SELF-HYPNOSIS from recorded tapes! Other helpful "Mind-Power" tapes, books, recordings! Free catalog. Write, Philanthropic Library, Drawer TR697, Ruidoso, New Mexico.

TOP QUALITY TAPE-MYLAR 1/2 mil 2400' \$2.99, 6 \$2.89. 1800' 1 mil acetate \$1.89, 6 \$1.84, 12 \$1.79. Acetate 1200' 1 1/2 mil \$1.39, 6 \$1.36, 12 \$1.29. All boxed 7". Guaranteed Postage add 20¢ per reel. Catalogue. Recording Service, P. O. Box 2314, Wallingford, Conn.

FREE TAPE RECORDINGS of Christian Shut-In music, Western Gospel Singing great Baptist Chorus, Christmas and Easter cantatas, the "Messiah," Complete Church services, (Southern Baptist but no doctrines) Biblical dramatizations, and many others. Also available, amazing Carillon Chime recordings. For complete list write Charley Summers, Box 986, Mobile, Alabama.

AMPEX "CAPRICE" STEREOPHONIC. OUTFIT, Model A-122-SP, complete with recorder and both speakers in three portable cases. Purchased in November and hardly used. Guaranteed in absolutely spotless condition, still in factory cartons. Cost \$849.50, first \$649.50 takes it. Your money refunded if not satisfied. Reason for selling: going to buy Ampex professional equipment. Al Caggiano, Bridgeton, R.D. 2, New Jersey.

TAPE RECORDER AND HI-FI Equipment: Berlant Broadcast recorder, Model BRX-2, like brand new, used in home only as a hobby, cost \$595.00, will deliver in factory carton for \$395.00. Garrard professional turntable, Model 301, perfect, delivery in factory carton for \$60.00. Pickering Flux-valve Minneapolis pickup arm with diamond needle, never used, \$45.00. G.E. transcription arm with Reconton magnetic cartridge, both like new, both for \$17.00. Jeanne Li Calzi, Greenwich, New Jersey.

ELECTRO-VOICE (TWO-WAY) Speaker System, in custom Walnut Enclosure, 25 watt capacity; 30-18,000 C.P.S. response. Last one; like new, \$340.00 value for only \$210.00. B. K. Balch, 611 Livingston Rd., Linden, New Jersey.

TRADE-IN HEADQUARTERS FOR recorders, Hi-Fi: Top dollar toward Acrosound, Ampex, Altec, Fentone, Fisher, Garrard, Marantz, Pickering, Stevens, Thorens, others. Many like-new components at a big saving. Money-back guarantee. Our customers trust us. Greenwich Specialty, Greenwich, New Jersey.

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EVERY ISSUE "TAPE RECORDING" to Dec. 57. Best offer. Wm. English, 229 West 22nd St., Chester, Pa.

GUARANTEED RECORDING TAPE, 1200'—\$1.39, 1800'—\$1.99, 2400'—\$3.99 on 7" reels, empties 7"—\$5. Minimum order assorted, \$10.00. Tape-Box 295, Bloomfield, New Jersey.

AMPEX DUPLICATION of your pre-edited monaural or stereo tape. Also staggered to stack, 1200' \$5.00. Quantity rates available. Remit with order. Pro Arte, Box 1001, New Brunswick, New Jersey.

WANTED: DISC RECORDER turntable with overhead lathe type feed and microgroove lead screw.

Will consider complete outfit, but prefer mechanism only. State make, condition and price. Richard Suenaga, 360 Yellowstone, Pocatello, Idaho. TAPE DUPLICATED—1200ft. \$5.00, 1800ft. \$6.00. Recorded on new Scotch 111A tape. Work guaranteed. Send tape and payment to J. Carl Horneff, 111 Cedarcroft Ave., Audubon 6, New Jersey.

PHONOGRAPH RECORDS prior 1940 wanted. Also records dubs, tapes of voices of people of interest, from newsreels, movie shorts, air, radio, past or present, all types, also army/navy transcription shows; movie trailers. Jacob S. Schneider, 109 West 85, New York City.

MINIFON BATTERY RECORDER P 55. Little used only transformer and holder. \$200. Dr. H. Unger, 400 Forest Avenue, Buffalo, New York.

FOR SALE—Jensen G610 Triaxial speaker mounted in Klipsch designed Rebel KR-3 enclosure, \$180.00. Kenneth Rauscher, 1848 Sobro Avenue, Valley Stream, Long Island, New York.

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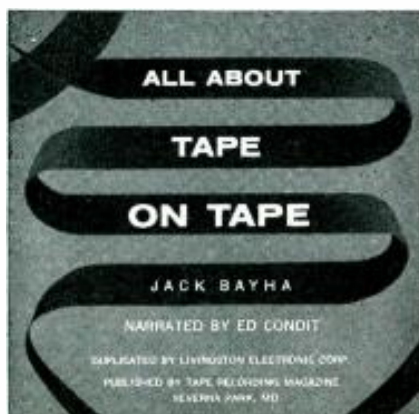
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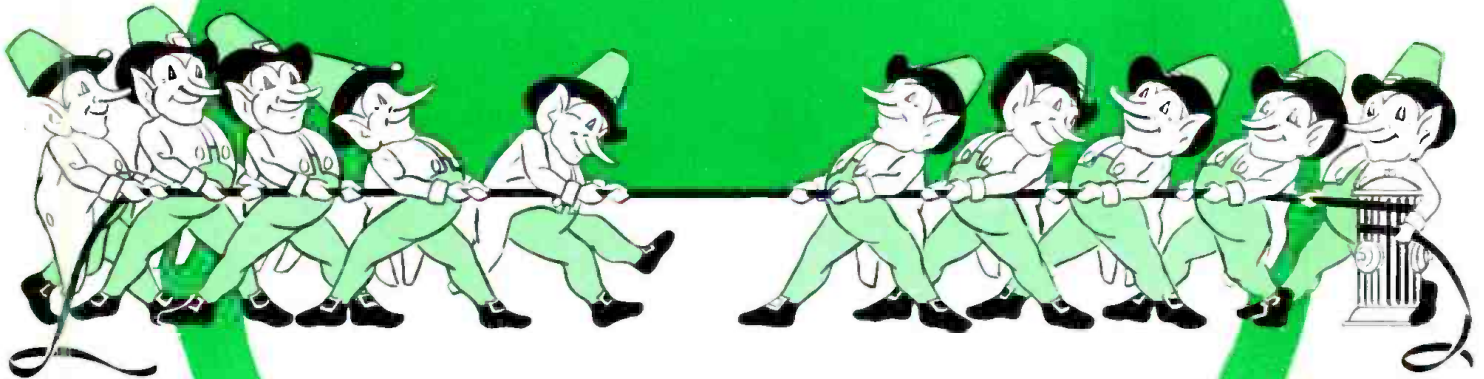
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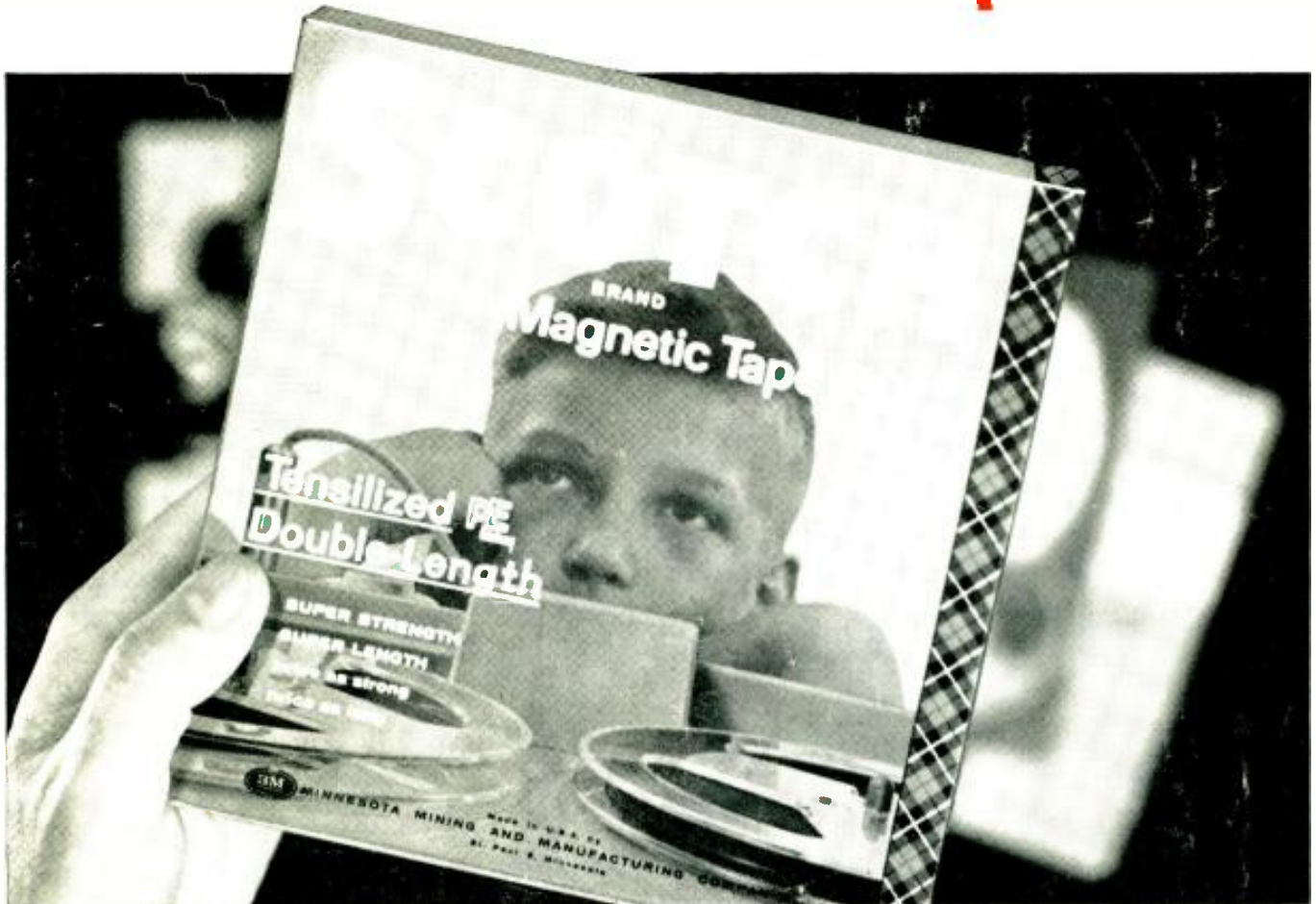
ORRadio Industries, Inc., Opelika, Alabama
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